

ENCLOSURE 1 TO NL-09-010

COPY OF CALCULATION FEX-00083-00

DYNAMIC LOADING OF EMERGENCY DIESEL GENERATORS

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

CON EDISON CALCULATION/ ANALYSIS COVER SHEET

3/16/98

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Title: DYNAMIC LOADING OF EMERGENCY DIESEL GENERATORS

Drawings

Component	
Type	Description
GEN	GENERATOR

Component	Style	Description
GEN		GENERATOR (AC OR DC)

System	Description
480V	480 VOLT ELECTRICAL

Structure Description
EDGB EMERGENCY DIESEL GENERATOR BUILDING

Preparer: George A. Mulligan Update Date: 1/21/98
Signature: _____

Reviewer:

Signature/Date:

Approval/Date Roger K. Sullivan / 12/13/28

Confirm. Required?-----

Concurrence (If Required)

PREPARER/DATE *JM 12/16/98*REVIEWER/DATE *JH 12/18/98*CLASS
IE

SUBJECT/TITLE

INDIAN POINT - DYNAMIC LOADING OF EMERGENCY DIESEL GENERATORS

PROJECT NO.

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OBJECTIVE

The objective of this calculation is as stated under Section 2.0 PURPOSE.

METHODOLOGY/ASSUMPTIONS

The methodology of this calculation is as described under Section 7.0 SIMULATION OF SAFETY INJECTION AND RECIRCULATION SEQUENCES.

REFERENCES

References are included in Section 10.

CONCLUSIONS

The conclusions of this calculation are as stated under Section 9.0 CONCLUSIONS.

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DESCRIPTION OF CHANGE SHEET			
<u>Revision Number</u>	<u>Description of Change</u>	<u>Reason of Change</u>	
00	Original Issue		

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XVII	SVP - SOFTWARE VALIDATION PLAN	5
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1.0 INTRODUCTION

The Indian Point Unit No. 2 has three emergency diesel generators (DG21, DG22 and DG23). Power Technologies Inc. performed a study to predict the dynamic behavior of the diesel generator units during several normal and abnormal operating conditions. As part of this study, models were developed to simulate the dynamics of the diesel engine, governor, generator, voltage regulator, and motors. The developed models and simulation results are included in Power Technologies Inc. Report No. R88-91 which was issued in September 1991 and revised in June 1993.

2.0 PURPOSE

The purpose of this study is to update the work performed by Power Technologies Inc. to reflect normal and abnormal operating conditions and load levels determined by Westinghouse Electric Corporation. These operating conditions and load levels are as detailed in Westinghouse report WCAP-123655, Revision 1 entitled "Emergency Diesel Generator Loading Study."

The component models developed by Power Technologies Inc. are used in this study without modifications. Such models include engine model, governor model, generator model, voltage regulator model, and individual motor models. These component models were used to develop the overall models of the emergency diesel generator units and their loads under various normal and abnormal conditions. However, the individual motor models were updated to reflect the revised load levels determined by Westinghouse. The motors are modeled as double rotor motor to predict the motor behavior during starting and running conditions. The motor feeder impedances were included in the model to account for feeder voltage drops. Also, the overall models accounted for the changes in sequencing times identified by Westinghouse.

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3.0 MOTOR STARTING SEQUENCES

Each of the three diesel generator sets (DG21, DG22, DG23) provide power for a different group of motors. Starting time begins when the safety injection signal is given.

During injection the starting sequence of each group is:

a. **Diesel Generator 21 (Bus 5A)**

<u>Starting Time (sec)</u>	<u>Event</u>
13	Safety injection pump 21
25	Service water pump 21 (or 24)
30	Containment recirculation fan 21
35	Containment recirculation fan 22
40	Containment spray pump 21

b. **Diesel Generator 22 (Bus 2A & 3A)**

<u>Starting Time (sec)</u>	<u>Event</u>
13	Safety injection pump 22
18	Residual heat removal pump 21
25	Service water pump 22 (or 25)
30	Containment recirculation fan 24
35	Containment recirculation fan 23
40	Auxiliary feedwater pump 21

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c. Diesel Generator 23 (Bus 6A)

Starting Time (sec)Event

13	Safety injection pump 23
18	Residual heat removal pump 22
25	Service water pump 23 (or 26)
30	Containment recirculation fan 25
35	Auxiliary feedwater pump 23
40	Containment spray pump 22

During recirculation under normal conditions, the sequence of events for each group is:

d. Diesel Generator 21 (Bus 5A) - Normal Conditions

Time (min)Events

4.0	Charging pump 21 on
17.0	Charging pump 21 off
18.0	Containment spray pump 21 off
23.0	Recirculation pump 21 on
25.0	Safety injection pump 21 off
29.0	Component cooling pump 21 on

e. Diesel Generator 22 (Bus 2A & 3A) - Normal Conditions

Time (min)Events

4.0	Charging pump 22 on
17.0	Charging pump 22 off
18.0	Safety injection pump 22 off
20.0	Residual heat removal pump 21 off
22.0	Service water pump 25 on
6 seconds later	Component cooling pump 22 on

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f. Diesel Generator 23 (Bus 6A) - Normal Conditions

Time (min)Events

4.0	Charging pump 23 on
17.0	Charging pump 23 off
20.0	Residual heat removal pump 22 off
25.0	Safety injection pump 23 off
29.0	Service water pump 26 on
6 seconds later	Recirculation pump 22 on
32.0	Containment spray pump 22 off

During recirculation with failure of one of the three diesel generators, the sequence of events is:

g. Diesel Generator 22 (Bus 2A & 3A)-Failure of DG21

Time (min)Event

4	Charging pump 22 on
22	Charging pump 22 off
25	Residual heat removal pump 21 off
27	Service water pump 25 on
6 seconds later	Component cooling water pump 22 on
30	Safety injection pump 21 off

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h. Diesel Generator 23 (Bus 6A)-Failure of DG21

<u>Time (min)</u>	<u>Event</u>
25	Residual heat removal pump 22 off
28	Recirculation pump 22 on
30	Safety injection pump 23 off
38	Containment spray pump 22 off

i. Diesel Generator 21 (Bus 5A)-Failure of DG22

<u>Time (min)</u>	<u>Event</u>
4	Charging pump 21 on
22	Charging pump 21 off
23	Containment spray pump 21 off
27	Service water pump 24 on
28	Recir. Water pump 21 on
30	Safety injection pump 21 off

j. Diesel Generator 23 (Bus 6A)-Failure of DG22

<u>Time (min)</u>	<u>Event</u>
4	Charging pump 23 on
22	Charging pump 23 off
25	Residual heat removal pump 22 off
27	Service water pump 26 on
30	Safety injection pump 23 off
38	Containment spray pump 22 off

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k Diesel Generator 21 (Bus 5A)-Failure of DG23

<u>Time (min)</u>	<u>Event</u>
4	Charging pump 21 on
27	Charging pump 21 off
33	Recirculating pump 21 on
35	Safety injection pump 21 off
46	Containment spray pump 21 off

l Diesel Generator 22 (Bus 2A & 3A)-Failure of DG23

<u>Time (min)</u>	<u>Event</u>
4	Charging pump 22 on
27	Charging pump 22 off
30	Residual heat removal pump 21 off
32	Service water pump 25 on
5 seconds later	Component cooling water pump 22 on
35	Safety injection pump 22 off

4.0 TIMER TOLERANCES AND PROCESS SIGNAL INTERLOCKS

The work performed by Power Technologies, Inc. included the simulation of four injection sequences accounting for timer tolerances. Since the work was completed, the old pneumatic type timers (AGASTAT) were replaced by electronic timers having high accuracy and repeatability (within +/- 2 PERCENT). Therefore, timer tolerances and their potential effects were not considered in this study. However, process signal interlocks and permissive may cause motor feeder breakers to close at times other than nominal. Therefore, the following four injection sequences analyzed by Power Technologies, Inc. were updated to account for potential process signal effects, which are much more severe than the effects of timer tolerances.

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m. Diesel Generator 21 (Bus 5A)-CR21 & CR22 Concurrently

Starting Time (sec)Event

13

Safety injection pump 21

25

Service water pump 21 (or 24)

30

Containment recir. fans 21 & 22

40

Containment spray pump 21

n. Diesel Generator 21 (Bus 5A)-CR21 & CR22 One Sec. Apart

Starting Time (sec)Event

13

Safety injection pump 21

25

Service water pump 21 (or 24)

30

Containment recir. fan 21

31

Containment recir. fan 22

40

Containment spray pump 21

o. Diesel Generator 22 (Bus 2A & 3A)-CR23 & AF21 Concurrently

Starting Time (sec)Event

13

Safety injection pump 22

18

Residual heat removal pump 21

25

Service water pump 22 (or 25)

30

Containment recir. fan 24

35

Containment recir. fan 23 and

Auxiliary feedwater pump 21

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p. Diesel Generator 22 (Bus 2A & 3A)-CR23 & AF21 (one sec apart)

Starting Time (sec)

Event

13	Safety injection pump 22
18	Residual heat removal pump 21
25	Service water pump 22 (or 25)
30	Containment recir. fan 24
35	Containment recir fan 23
36	Auxiliary feedwater pump 21

5.0 MOTOR LOADING

The revised motor loading identified in Westinghouse Report WCAP-12655, Revision 1 are as follows:

FUNCTION	RATED POWER (HP)	Input Power/Rated HP (PU)
AUXILIARY FEEDWATER PUMP (AF)	400	1.287
CHARGING PUMP (CH)	200	1.005
COMPONENT COOLING PUMP (CC)	250	1.222
CONTAINMENT-RECIRCULATION FAN (CR)	350	0.957
CONTAINMENT SPRAY PUMP (CS)	400	1.099
RECIRCULATION PUMP (RC)	350	1.160
RESIDUAL HEAT REMOVAL PUMP (RH)	400	1.059
SAFETY INJECTION PUMP (SI)	400	1.059
SERVICE WATER PUMP (SW)	350	1.042

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6.0 MOTOR CONTROL CENTERS (MCCs) LOADING

Miscellaneous MCC loads, as identified in Westinghouse report WCAP-12655, Rev 1, are lumped together as follows, and are energized upon diesel generator breaker closing at $t=10$ s:

DG 21	MCC 26A	143 kW
DG 22	MCC 26C	206 kW
DG 23	MCC 26B	140 kW

In addition, MCC29A with a loading of 109 kW is switched to DG21 at the start of the recirculation phase.

To reduce the simulation model size, all MCC loading at each diesel generator were lumped together (except EDG 21) regardless of their switching time and assumed to be energized at $t=10$ second and remain energized for the duration of the loading sequence. This approach is considered more conservative. The following table shows the actual MCC running load kW vs. the MCC kW load used in the PSS/E simulations. More conservative larger lumped MCC loads were used in the simulations during safety injection mode ($t = 0-1$ min). Also, a minimum 3% voltage margin is available according to Section 8.0.2. The small discrepancies of MCC loads at the end of recirc mode for EDG 22 and EDG 23 will have minimum effect on generator voltage, and will not degrade the 3% margin.

Description	Actual Safety Injection Load (kW), $t = 0-1$ min	Actual Max Recirc. Load (kW) $t > 1$ min	Load Used in PSS/E Simulation (kW)
EDG 21 (Source: WCAP-12655 Table 5.2-2a)			
MCC 26A & 26AA	85.4	62.7	143 @ $t = 10$ s - 60min
MCC 29A	0	107.3	109 @ $t = 4$ - 60 min
EDG 22 (Source: WCAP-12655 Table 5.2-2b)			
MCC211, 24A, 26C	76.5	183.9 @ $t=5-17$ min 229.9 @ $t=17-60$ min	206 @ $t = 10$ s - 60min
EDG 23 (Source: WCAP-12655 Table 5.4-2b)			
MCC26B, 26BB & 27A	69.8	95.3 @ $t=5-50$ min 203 @ $t=50$ min	140 @ $t = 10$ s - 60min

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7.0 SIMULATION OF SAFETY INJECTION AND RECIRCULATION SEQUENCES

The PSS/E software was used to simulate the normal and abnormal injection and recirculation sequences identified in 3 above. The following parameters were monitored during the simulations:

- motor speed
- motor terminal voltages
- diesel generator mechanical, electrical and reactive power
- diesel generator terminal voltage
- diesel generator speed and field voltage

Consistent with the simulation performed by Power Technologies, Inc., $t=0$ in the simulations corresponds to $t=10$ s in real time. In real time, $t=10$ s coincides with the instant of diesel generator breaker closing 10 seconds after the initiation of a safety injection signal. Also, since there are few significant electrical events during recirculation, the 30 minutes recirculation period has been compacted to 30 seconds of simulation. The events during recirculation are mainly motor starts and stops. Since motor transients are shorter than 5 seconds, the interval between events was reduced to 5 seconds of simulation. Also, the simulations accounted for the impedance of the motor feeders to determine the motor terminal voltages. The cable impedances determined by PTI in the original simulations were used.

8.0 SIMULATION RESULTS

The simulation results indicate the following:

- 1) During all the simulated injection and recirculation sequences, whether normal or abnormal, the sequenced motors are capable to start and accelerate. Also, running motors do not stall during subsequent motor starting intervals. Pump motors with lower inertia constants start and accelerate to rated speeds within about one or two seconds while fan motors with high inertia constants start and accelerate in three to four seconds.
- 2) During all normal injection and recirculation sequences, the generator and motor terminal voltages are well above the commonly acceptable level of 75% of rated with a margin of more than 3%. Specifically, all generator and motor terminal voltages remain above 80% of rated except for a few motors (AF23, CR25, RH22

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and SW23) which experience terminal voltage of between 75 and 80% of rated during DG23 injection sequence as shown in Attachment III, Page 2.

- 3) During all normal and abnormal injection and recirculation sequences, except the four abnormal injection sequences caused by process signal interlocks (Attachment XIII, XIV, XV and XVI), the diesel generator frequencies are above the commonly acceptable level of 95% of rated.
- 4) During the abnormal injection sequences caused by process signal interlocks and resulting in containment recirculation fans and/or auxiliary feedwater pump starting concurrently or one second apart, the generators frequencies may drop to less than 90% of rated (Attachment XV Page 6 and Attachment XVI Page 6). However, such abnormal events are less likely. Moreover, in spite of such excessive speed drops, the diesel generators and running motors are capable of recovering to their normal operating speeds within approximately 3 seconds. Voltage drop down to 75% of rated motor voltage is momentary and the voltage regulator boosts excitation voltage and causes the voltage to recover within a few seconds.
- 5) The diesel generators loading are as follows:

- **DG 21**

The highest loading under all operating conditions is 1749 kW (Attachment IX Page 5 of 7) is within the diesel generator continuous rating of 1750 kW.

- **DG 22**

The highest loading at the end of the normal injection sequences and injection sequences considering process signal interlocks is 2180 kW (Attachment XVI, Page 5 of 7). It is within the diesel generator 1/2 hour rating of 2300 kW. At the end of the recirculation sequences, the highest loading is 2045 kW (Attachment VII, Page 5 of 7). which is within the 2 hour rating of 2100 kW.

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• **DG 23**

The highest loading at the end of the normal and abnormal recirculation sequences is 1765 kW (Attachment VI, Page 5 of 8). It is within the diesel generator 2 hour rating of 2100 kW. At the end of the injection sequences, the load is 2130 kW (Attachment III, Page 5 of 8) and is within the 1/2 hour rating of 2300 kW.

The results of the simulated sequences are included in the following attachments:

- Attachment I - Diesel Generator 21 - Injection (Normal)
- Attachment II - Diesel Generator 22 - Injection (Normal)
- Attachment III - Diesel Generator 23 - Injection (Normal)
- Attachment IV - Diesel Generator 21 - Recirculation (Normal)
- Attachment V - Diesel Generator 22 - Recirculation (Normal)
- Attachment VI - Diesel Generator 23 - Recirculation (Normal)
- Attachment VII - Diesel Generator 22 - Recirculation (Failure of DG21)
- Attachment VIII - Diesel Generator 23 - Recirculation (Failure of DG 21)
- Attachment IX - Diesel Generator 21 - Recirculation (Failure of DG 22)
- Attachment X - Diesel Generator 23 - Recirculation (Failure of DG 22)
- Attachment XI - Diesel Generator 21 - Recirculation (Failure of DG23)
- Attachment XII - Diesel Generator 22 - Recirculation (Failure of DG 23)
- Attachment XIII - Diesel Generator 21 - Injection (CR21&CR22 concurrent)
- Attachment XIV - Diesel General 21 - Injection (CR21&CR22 one sec apart)

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Attachment XV - Diesel General 22 - Injection (CR23&AF21 concurrently)

Attachment XVI - Diesel Generator 22 - Injection (CR23&AF21 one sec apart)

In the graphs included in the attachments, the following bases are used.

Diesel generator base voltage	480V
Motor base voltage	460V or 440V
Base MVA	2.2 MVA
Base frequency	60 Hertz

9.0 CONCLUSIONS

Based on the results of the simulations utilizing the models previously developed by Power Technologies, Inc., the following is concluded:

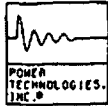
- During all analyzed sequences, the sequenced motors can start, accelerate and do not stall during subsequent load application.
- The capabilities of DG 21, DG22 and DG23 are not exceeded during all the normal and abnormal sequences analyzed.

10.0 REFERENCES

- 1) IEEE Std 1110-1991, "IEEE Guide for Synchronous Generator Modeling Practices in Stability Analysis."
- 2) IEEE Committee Report, "Excitation System Models for Power System Stability Studies," Trans. PAS, Vol. PAS-100, No.2, Feb 1981, pp. 494-509.
- 3) Power Technologies Inc. Report No. R88-91, Revised June 1993, "Emergency Diesel Generator Loading Sequences for Consolidated Edison Company of New York.
- 4) Westinghouse Report WCAP-123655, Rev. 1, "Emergency Diesel Generator Loading Study".

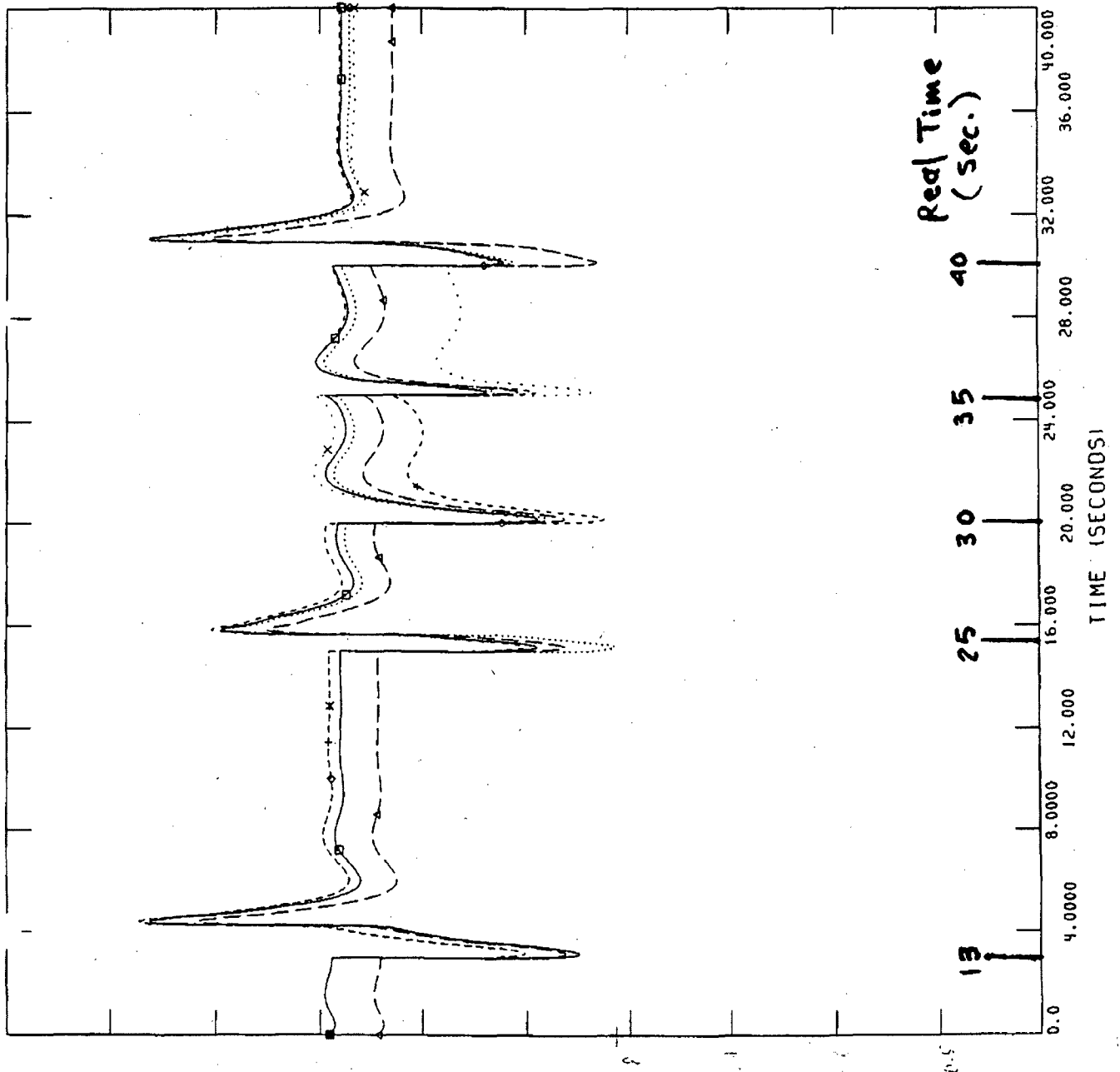
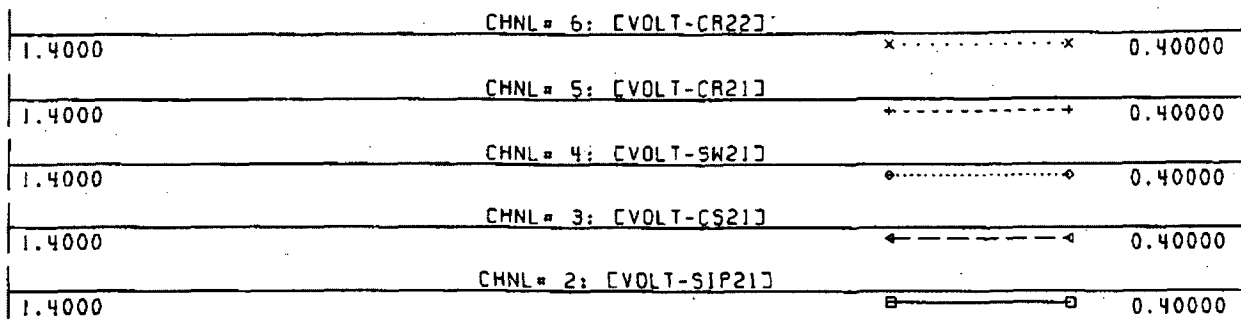
ATTACHMENT I

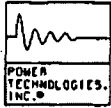
DIESEL-GENERATOR 21 - INJECTION (NORMAL)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS SA
LOADING SEQUENCE FROM 10 TO 40 SECONDS
STARTING SEQUENCE: MCC26A-S121-SW21-CR21-CR22-CS21
FILE: c:\psse24w\coned\dynam\dg21norm.out

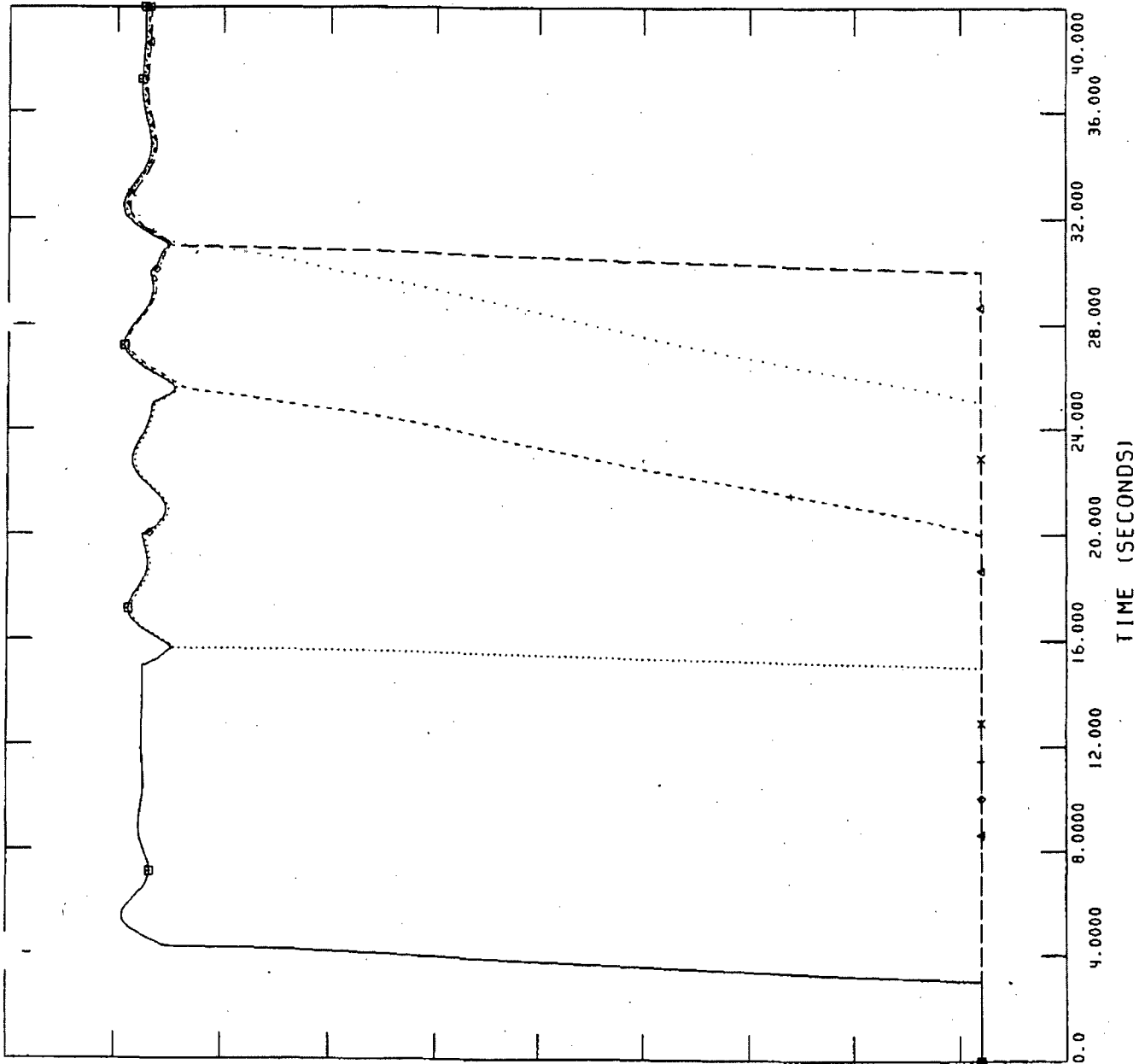
Thu. Jan 08 1998 11:41
MOTOR VOLTAGES



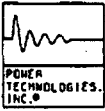


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
STARTING SEQUENCE: MCC26A-SI21-SW21-CR21-CR22-CS21
FILE: c:\psse24w\coned\dynam\dg21norm.out

0.15000	CHNL # 11: [SPDN-CR22]	x.....x	-1.100
0.15000	CHNL # 10: [SPDN-CR21]	+-----+	-1.100
0.15000	CHNL # 9: [SPDN-SW21]	o.....o	-1.100
0.15000	CHNL # 8: [SPDN-CS21]	^-----^	-1.100
0.15000	CHNL # 7: [SPDN-SIP21]	□-----□	-1.100

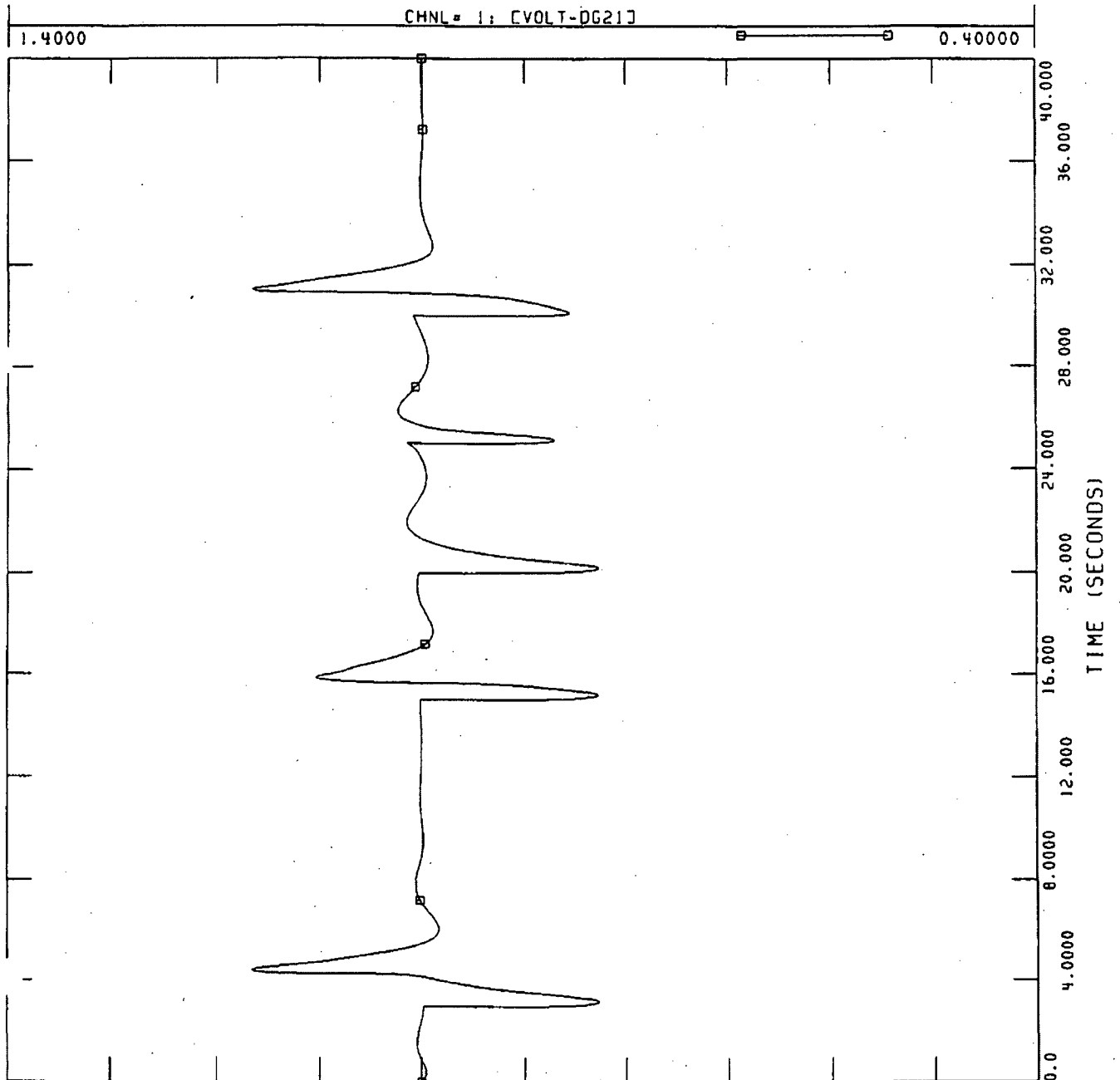


Thu. Jan 08 1998 11:35
MOTOR SPEEDS



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
STARTING SEQUENCE: MCC26A-S121-SW21-CR21-CR22-CS21
FILE: c:\psse24w\coned\dynam\dg2\norm.out

Thu, Jan 08 1998 11:41
DIESEL VOLT:

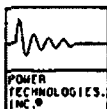


5	'GENSAL'	1	3.5	0.05	0.05	1.35
	0		1.33	1.000	0.22	0.14
	0.13		0.296	0.7540	/	
5	'EXST2A'	1	0	60.0	0.15	1.2
	-1.2		1	0.5	0.04	0.50
	3.50		3.50	0.7	4.5	/
5	'DEGOV'	1	0.0220	0.20	0.1	10.000
	0.25		0.039	0.009	0.025	1.069
	-0.05		/			
51	'CMOTOR'		0.0120	0.0750	4.00	0.0600
	0.080		0.009	0.068	0.0	0.4320
	2.0		1.00	0.96462	0.5	/ SI21
52	'CMOTOR'		0.018	0.0730	3.55	0.07
	0.070		0.016	0.075	0.0	0.376
	2.0		1.0	1.00416	0.5	/ CS21
53	'CMOTOR'		0.022	0.075	2.80	0.060
	0.070		0.0190	0.0670	0.0	3.015
	2.0		1.0	0.84075	0.5	/ CRF21
56	'CMOTOR'		0.022	0.075	2.80	0.060
	0.07		0.019	0.067	0.0	3.015
	2.0		1.0	0.84075	0.5	/ CRF22
59	'CMOTOR'		0.020	0.0720	2.80	0.05
	0.07		0.014	0.0450	0.0	0.225
	2.0		1.0	0.94244	0.5	/ SWP24
50	'CMOTOR'		0.020	0.072	2.8	0.05
	0.07		0.014	0.045	0.0	0.225
	2.0		1.0	0.94244	0.5	/ SWP21
55	'CMOTOR'		0.020	0.083	3.30	0.060
	0.0840		0.0410	0.06400	0.0	0.404
	2.0		1.0	1.13393	0.5	/ CCP21
7	'CMOTOR'		0.0220	0.0750	2.800	0.0600
	0.070		0.0190	0.0670	0.0	0.4490
	2.0		1.0	1.02841	0.5	/ RP21
58	'CMOTOR'		0.018	0.072	3.60	0.06
	0.072		0.018	0.07	0.0	0.181
	0.01		1.0	0.914910	0.5	/ CHP21
0	'NETFRQ'		/			

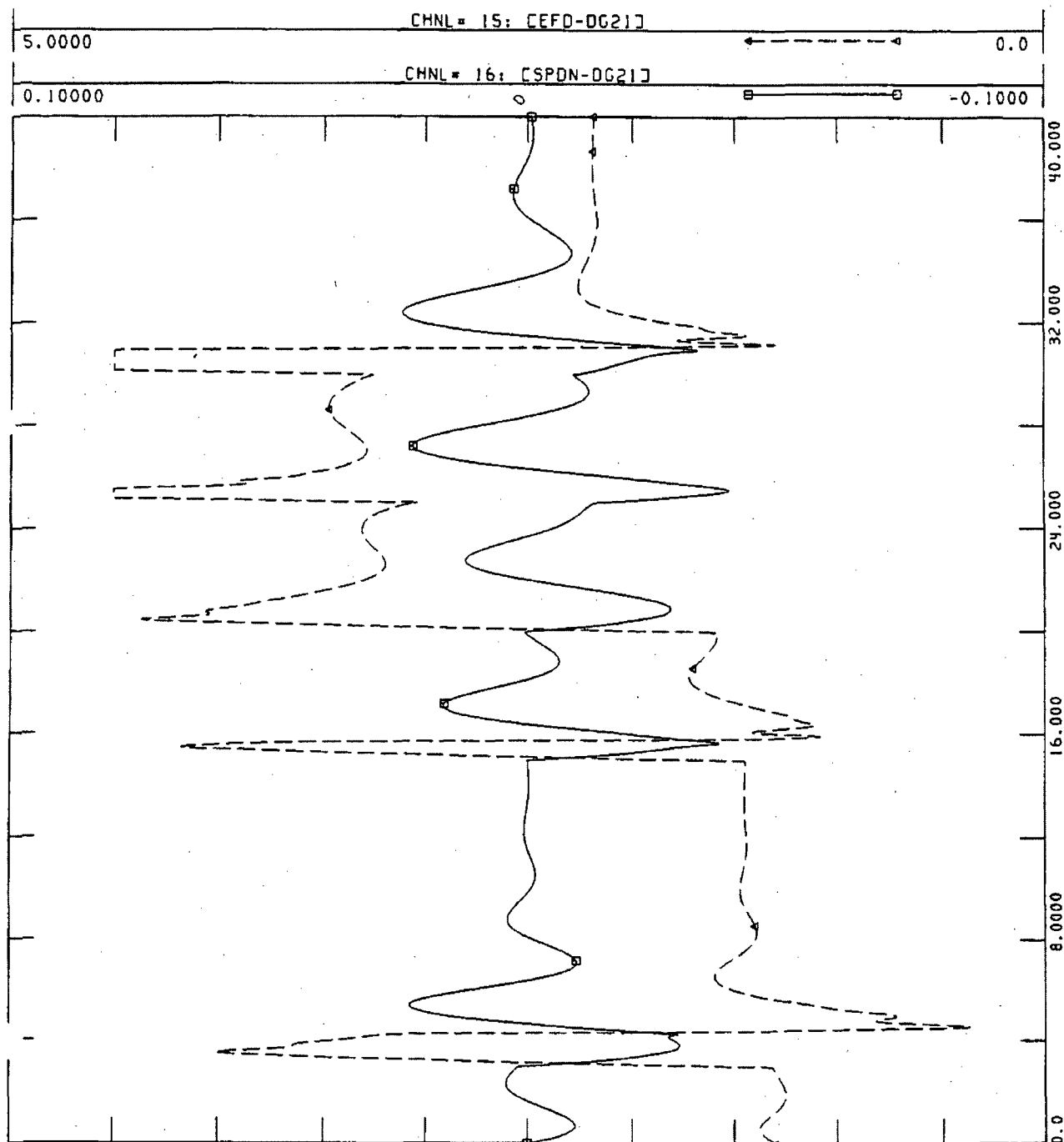
MENU, OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR, SNPDG21N. SNP
 LOFL
 CASE, DG21CON. SAV
 FACT
 R.
 STRT
 DG21NORM. OUT

RUN
 0 30 3
 PSAS
 1

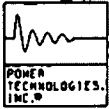
CHANGE MWP LOAD BUS 54 TO 0.143 MW	/10.0 SEC	MCC26A @143 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.321	/25.0 SEC	SW21 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR21 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.319	/35.0 SEC	CR22 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.349	/40.0 SEC	CS21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		



INDIAN POINT-2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
STARTING SEQUENCE: MCC26A-SI21-SW21-CR21-CR22-CS21
FILE: c:\psse24w\coned\dynam\dg21norm.out

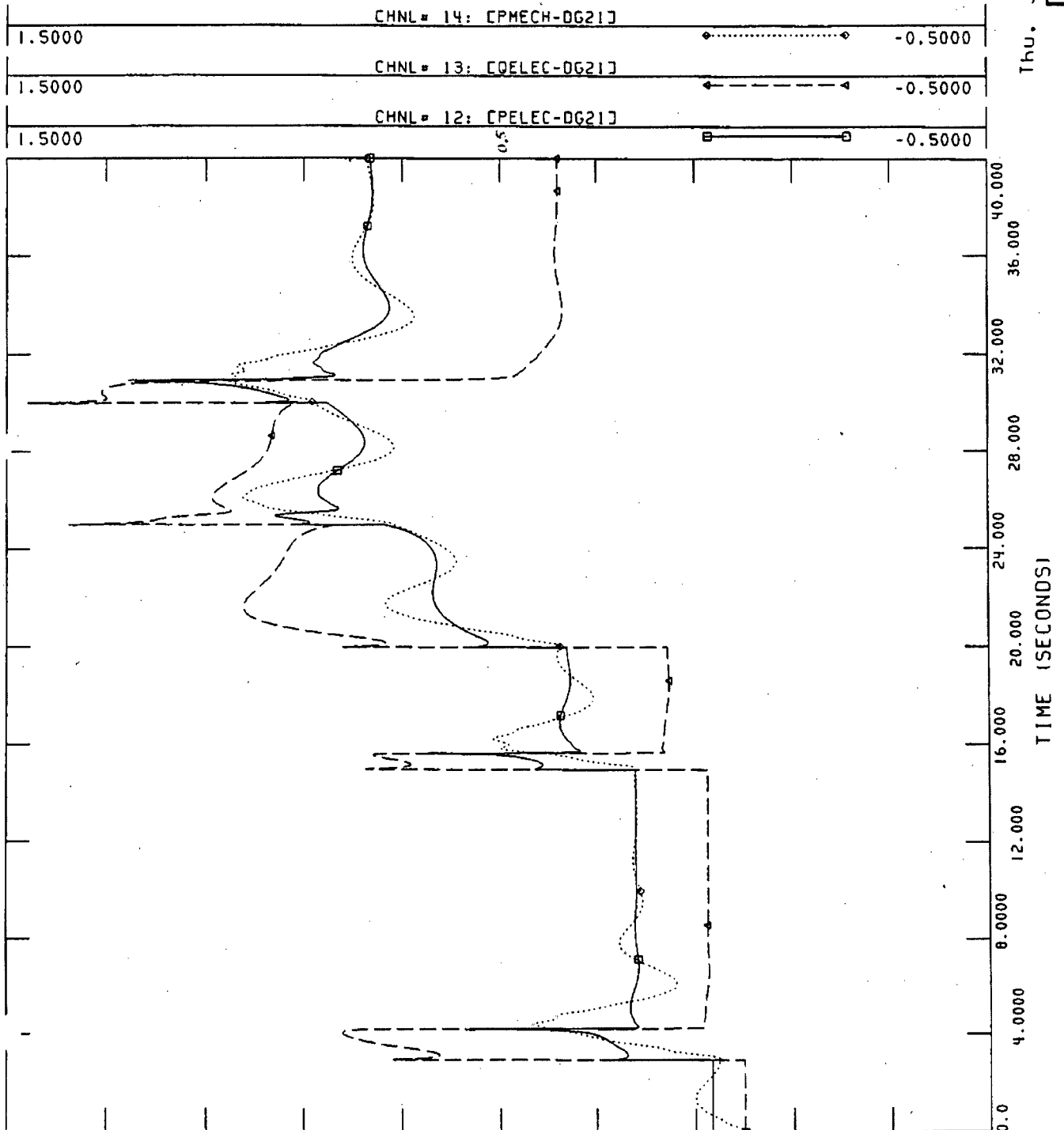


Thu, Jan 08 1998 11:5
DIESEL SPEED & FLD VOLT

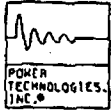


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
STARTING SEQUENCE: MCC26A-SI21-SW21-CR21-CR22-CS21
FILE: c:\psse24w\coned\dynam\dg21norm.out

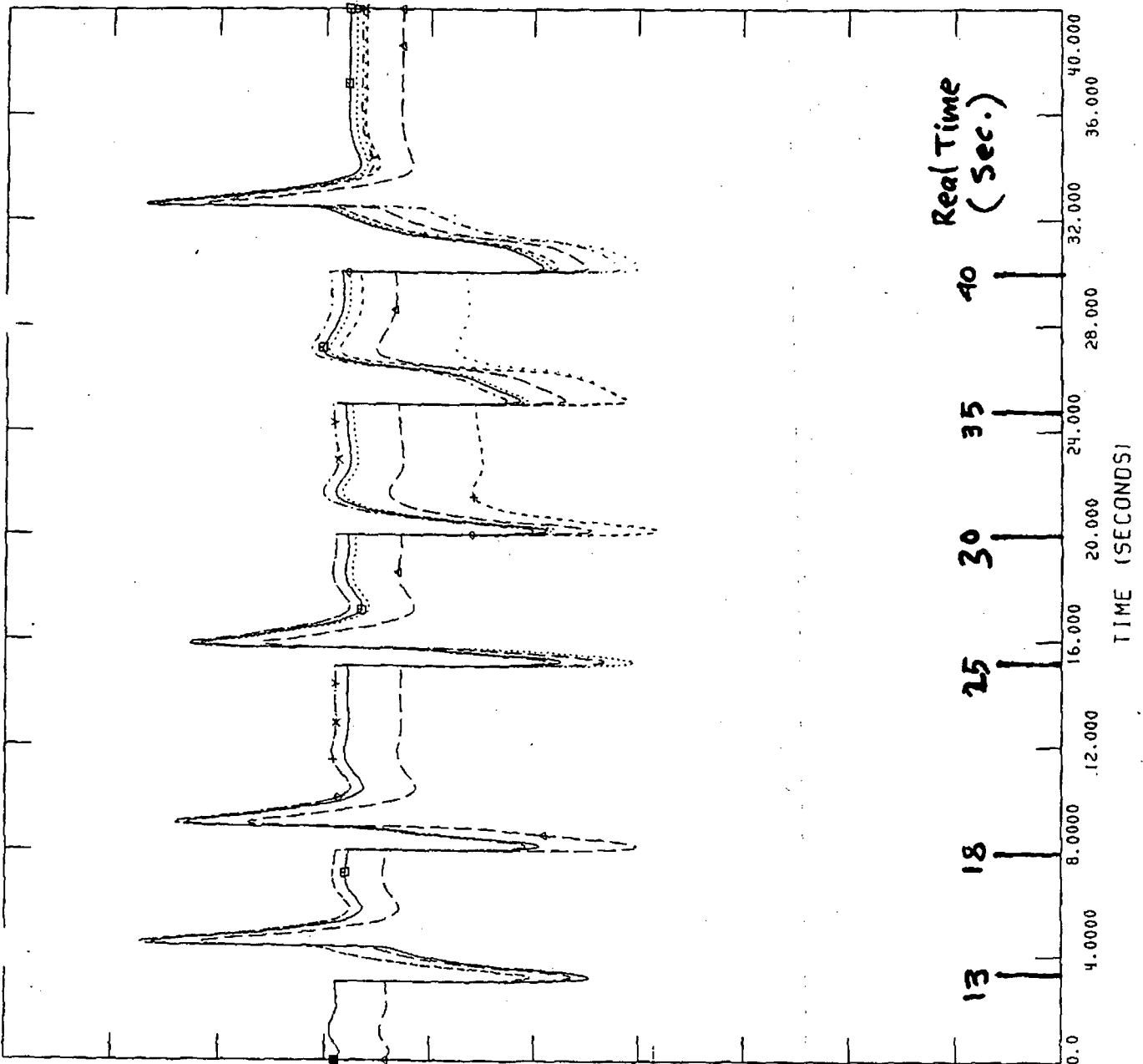
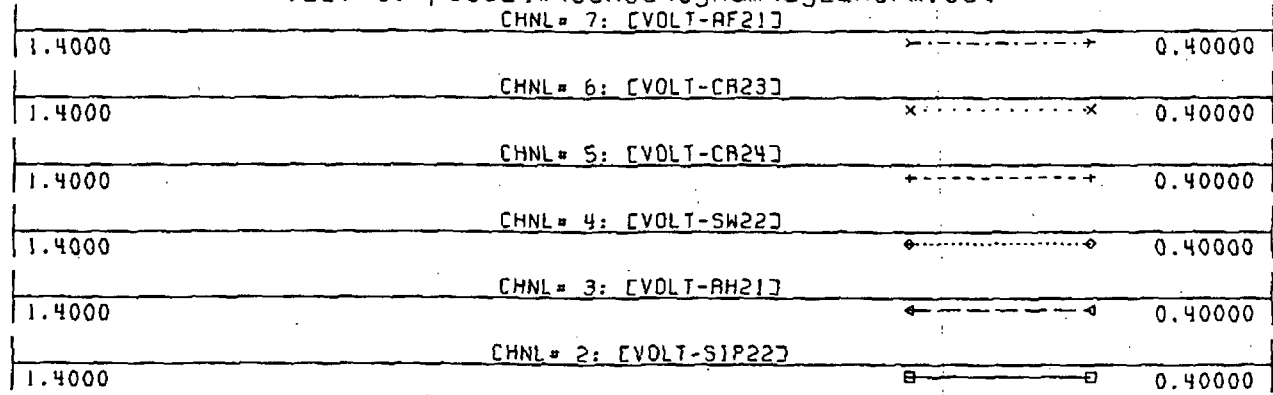
Thu, Jan 08 1998 11:41
DIESEL POWER



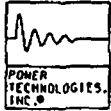
ATTACHMENT II
DIESEL-GENERATOR 22 - INJECTION (NORMAL)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: S122-RHR21-SW22-CR24-CR23-AF21
FILE: c:\psse24w\coned\dynam\dg22norm.out

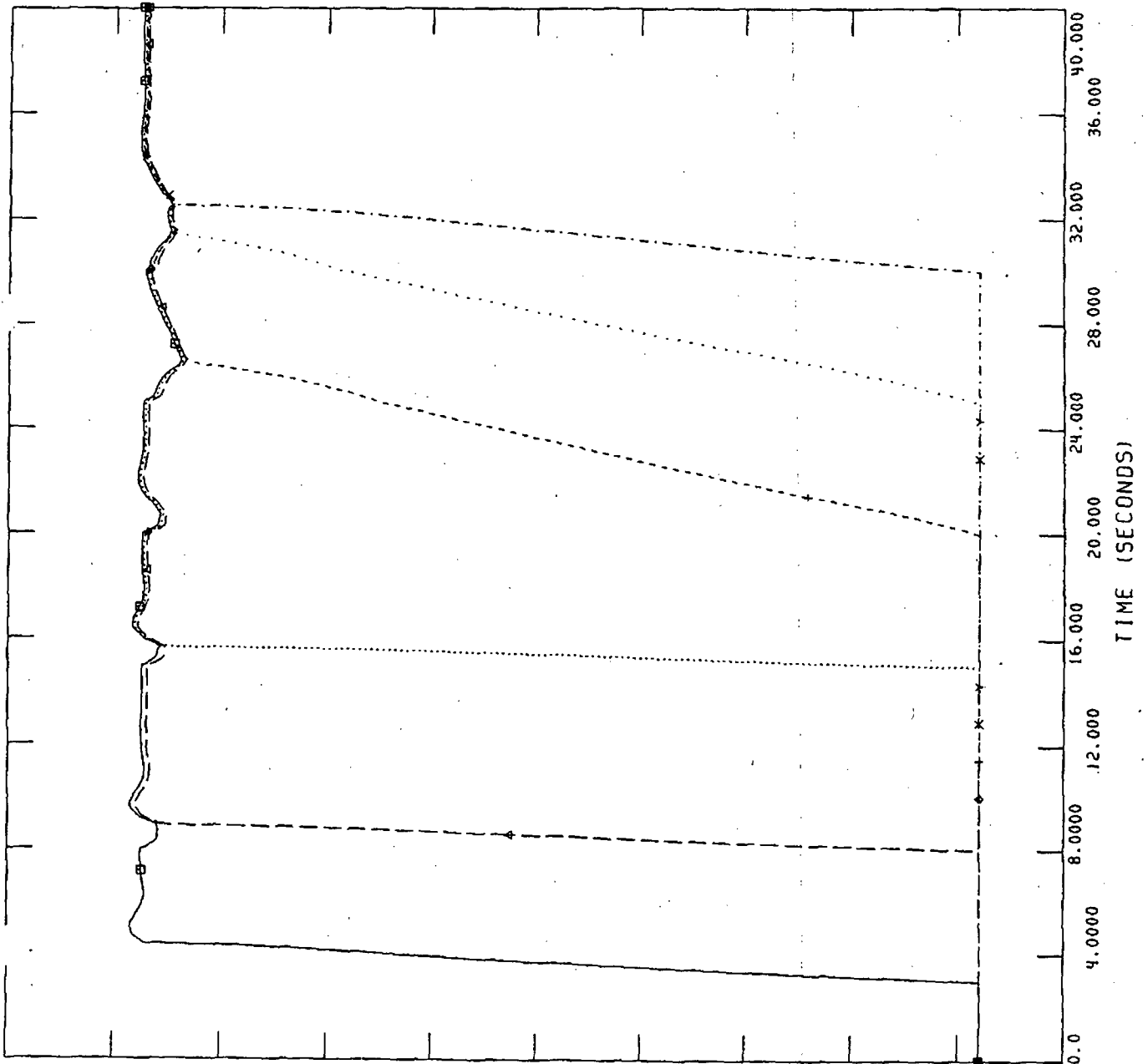


Fri. Jan 09 1998 16:51
MOTOR VOLTAGES

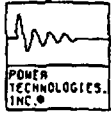


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: SI22-AHR21-SW22-CR24-CR23-AF21
FILE: c:\psse24w\coned\dynam\dg22norm.out

0.15000	CHNL = 13: [SPDN-AF21]	-1.100
0.15000	CHNL = 12: [SPDN-CR23]	-1.100
0.15000	CHNL = 11: [SPDN-CR24]	-1.100
0.15000	CHNL = 10: [SPDN-SW22]	-1.100
0.15000	CHNL = 9: [SPDN-AH21]	-1.100
0.15000	CHNL = 8: [SPDN-SIP22]	-1.100

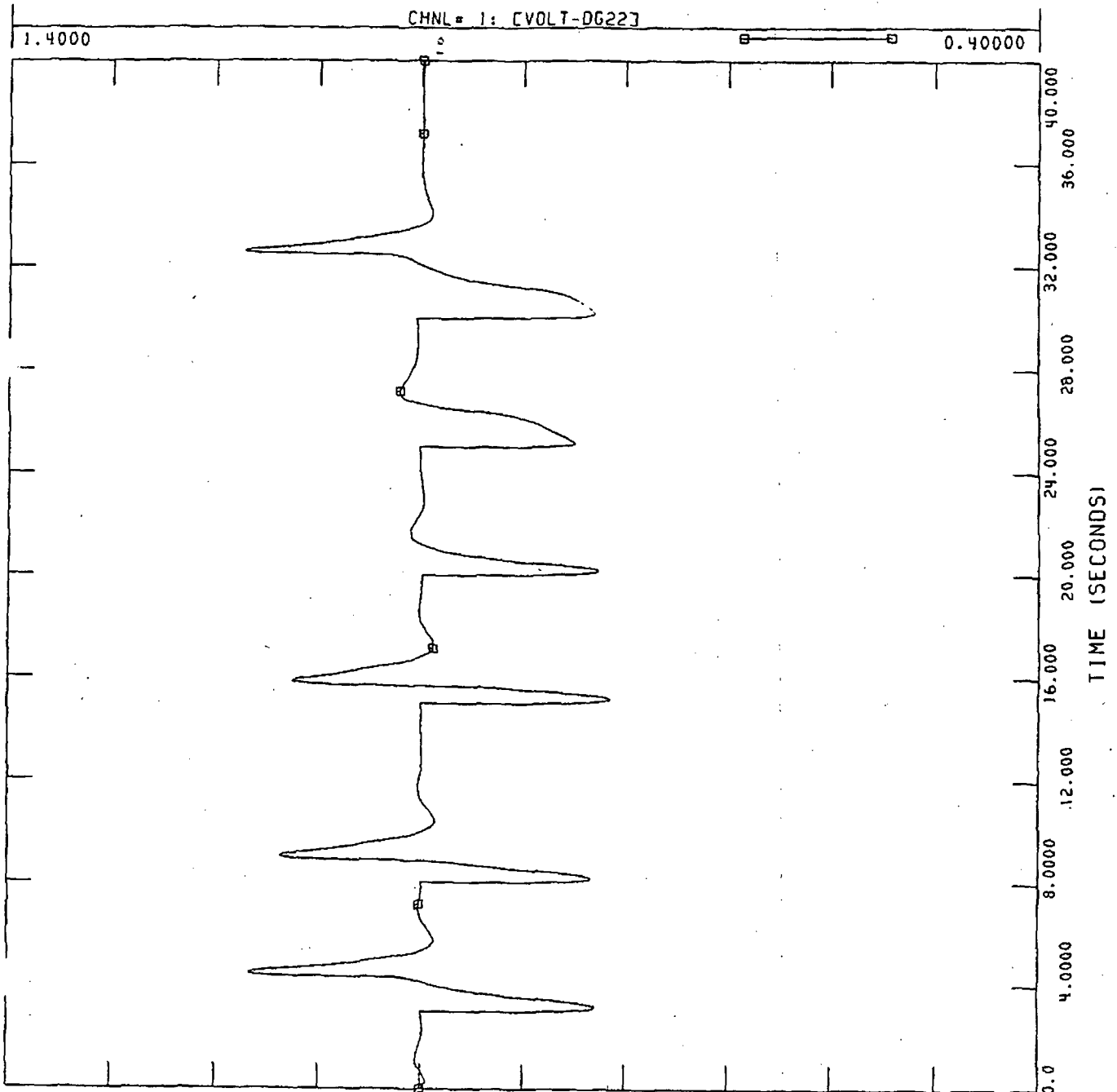


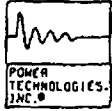
Fri, Jan 09 1998 16:3
MOTOR SPEED:



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: S122-RHR21-SW22-CR24-CR23-AF21
FILE: c:\psse24w\coned\dynam\dg22norm.out

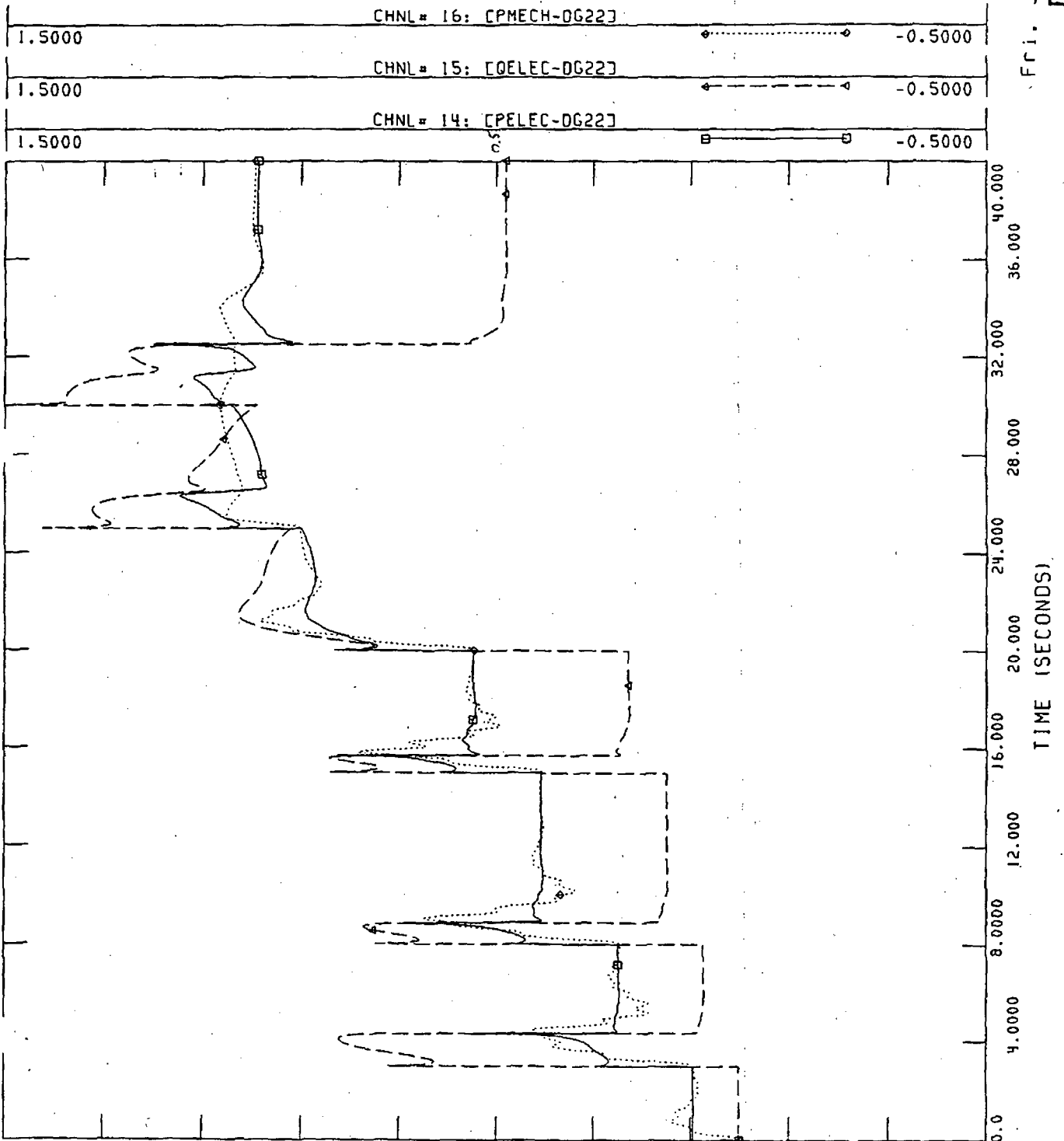
Fri, Jan 09 1998 17:0
DIESEL VOLT:

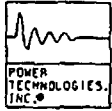




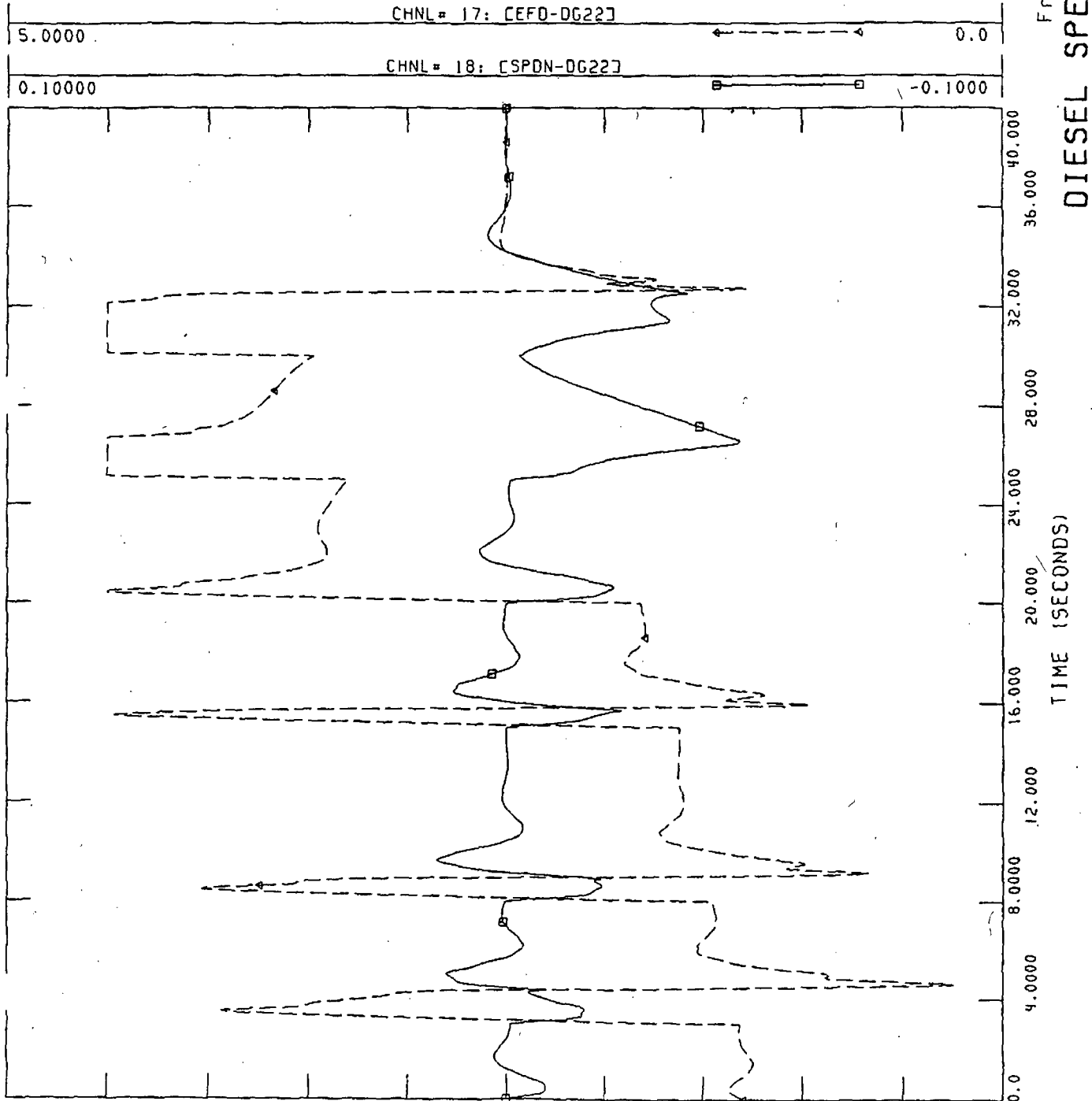
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: S122-RHR21-SW22-CR24-CR23-AF21
FILE: c:\psse24w\coned\dynam\dg22norm.out

Fri, Jan 09 1998 16:50
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: S122-RHR21-SW22-CR24-CR23-AF21
FILE: c:\psse24w\coned\dynam\dg22norm.out



0622.0YK

2	'GENSAL'	1	3.5	0.05	0.05	1.35
		0	1.33	1.0000	0.22	0.140
		0.1300	0.2960	0.7540		/
2	'EXST2A'	1	0	60.00	0.15	1.2
		-1.2	1.	0.5	0.04	0.50
		3.5	3.5	0.7	4.5	/
2	'DEGOV'	1	0.022	0.20	0.10	20.000
		0.25	0.039	0.009	0.025	1.069
		-0.05	/			
26	'CMOTOR'		0.0120	0.07500	4.000	0.0600
		0.080	0.0090	0.0680	0.00	0.4320
		2.0	1.000	0.964620	0.5	/ SIP22
27	'CMOTOR'		0.022	0.075	2.800	0.060
		0.070	0.019	0.067	0.000	3.0150
		2.0	1.000	0.84075	0.5	/ CR23
33	'CMOTOR'		0.022	0.075	2.8000	0.060
		0.070	0.0190	0.0670	0.000	3.015
		2.0	1.000	0.84075	0.5	/ CR24
25	'CMOTOR'		0.020	0.0720	2.800	0.050
		0.070	0.014	0.0450	0.000	0.2250
		2.0	1.000	0.94244	0.5	/ SWP22
34	'CMOTOR'		0.0200	0.0720	2.800	0.050
		0.0700	0.0140	0.0450	0.000	0.225
		2.0	1.000	0.94244	0.5	/ SWP25
36	'CMOTOR'		0.016	0.070	3.800	0.070
		0.070	0.0160	0.0750	0.00	0.376
		2.0	1.000	0.99984	0.5	/ RH21
37	'CMOTOR'		0.016	0.085	3.000	0.040
		0.0850	0.0120	0.0450	0.00	0.601
		2.0	1.000	1.13955	0.5	/ AF21
4	'CMOTOR'		0.020	0.0830	3.300	0.060
		0.0840	0.0410	0.0640	0.00	0.404
		2.0	1.000	1.13393	0.5	/ CCP22
32	'CMOTOR'		0.0180	0.0720	3.600	0.060
		0.072	0.0180	0.0700	0.00	0.181
		0.010	1.000	0.91491	0.5	/ CHP22
0	'NETFRQ'		/			

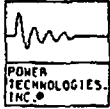
MENU, OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR, SNPDG22N.SNP
 LOFL
 CASE, DG22CON.SAV
 FACT
 R. 1
 STRT
 DG22NORM.OUT

RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 31 TO 0.206 MW	/10.0 SEC	MCC26C @206 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI22 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.349	/18.0 SEC	RH21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW22 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR24 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/35.0 SEC	CR23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.364	/40.0 SEC	AF21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
EN.		

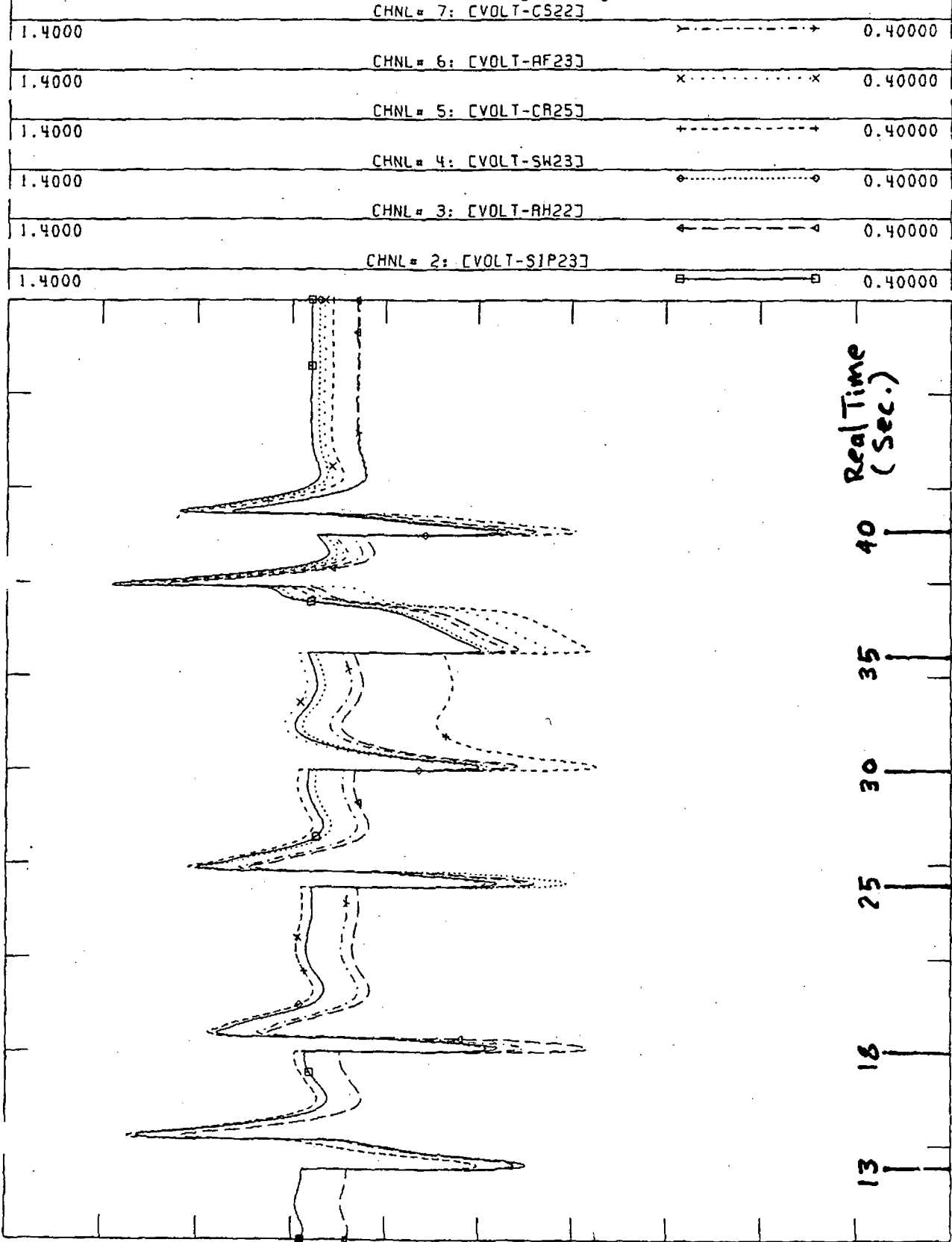
ATTACHMENT III

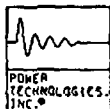
DIESEL-GENERATOR 23 - INJECTION (NORMAL)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: MCC26B-S123-RH22-SW23-CR25-AF23-CS22
FILE: c:\psse24w\coned\dynam\dg23norm.out

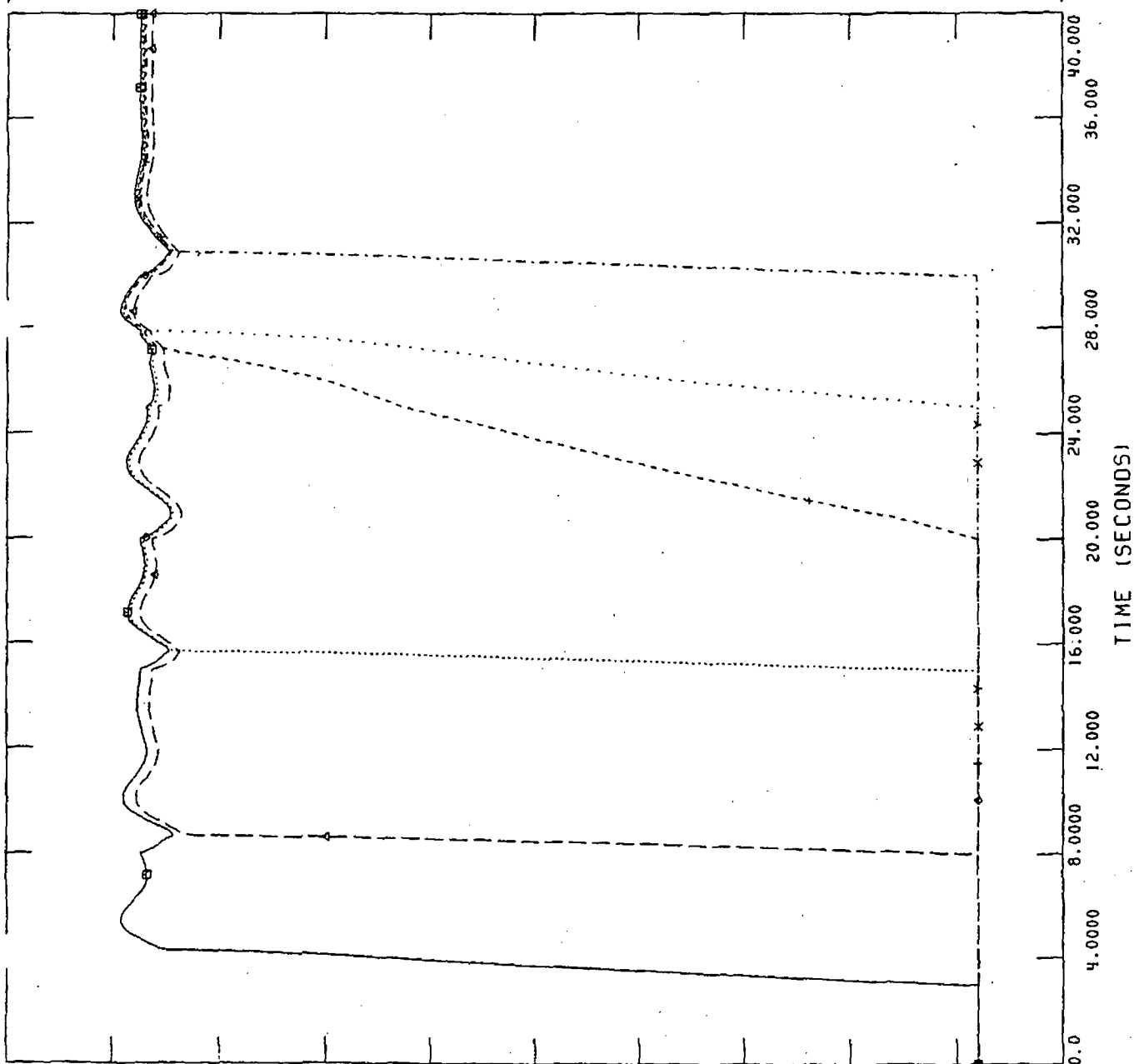
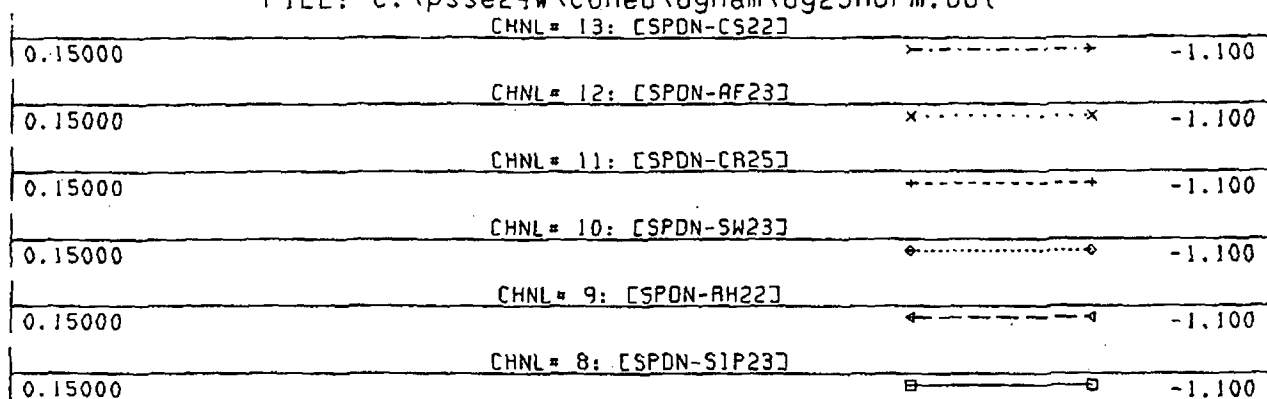
Mon. Jan 12 1998 10:25
MOTOR VOLTAGES

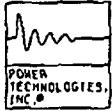




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: MCC26B-SI23-RH22-SW23-CR25-AF23-CS22
FILE: c:\psse24w\coned\dynam\dg23norm.out

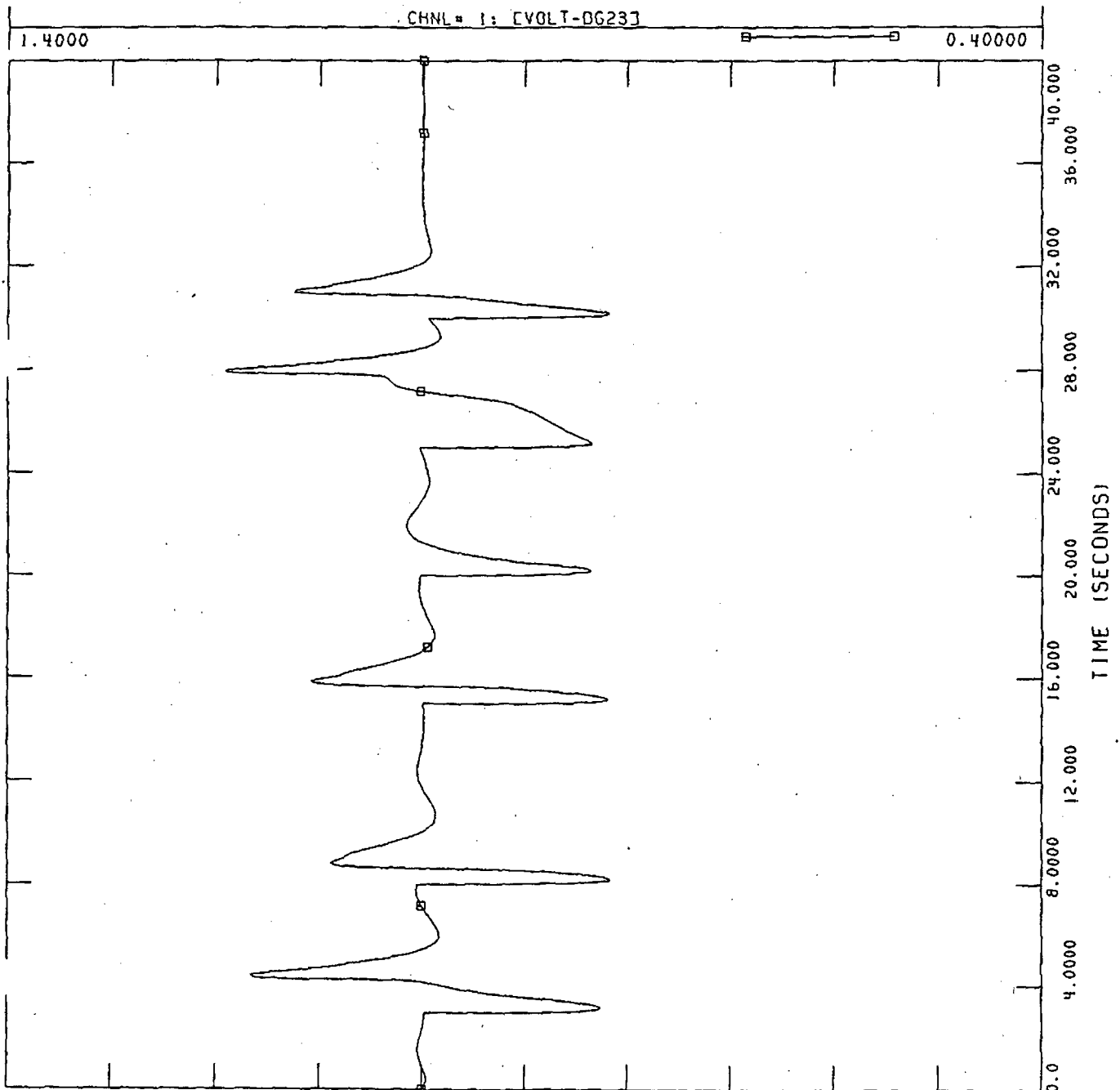
Mon. Jan 12 1998 10:2
MOTOR SPEED:

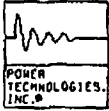




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: MCC26B-S123-RH22-SW23-CR25-AF23-CS22
FILE: c:\psse24w\coned\dynam\dg23norm.out

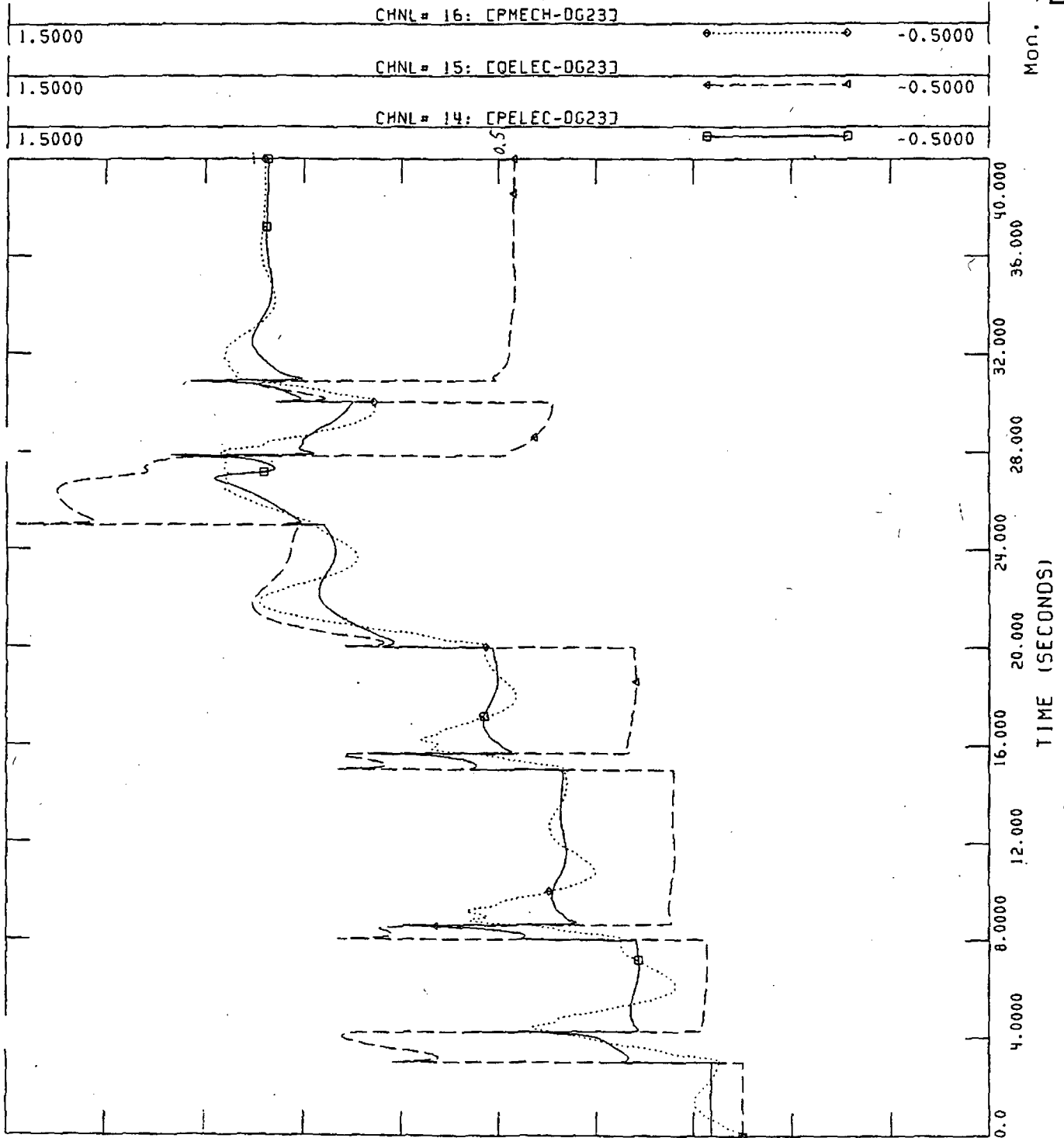
Mon. Jan 12 1998 10:28
DIESEL VOLTS

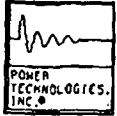




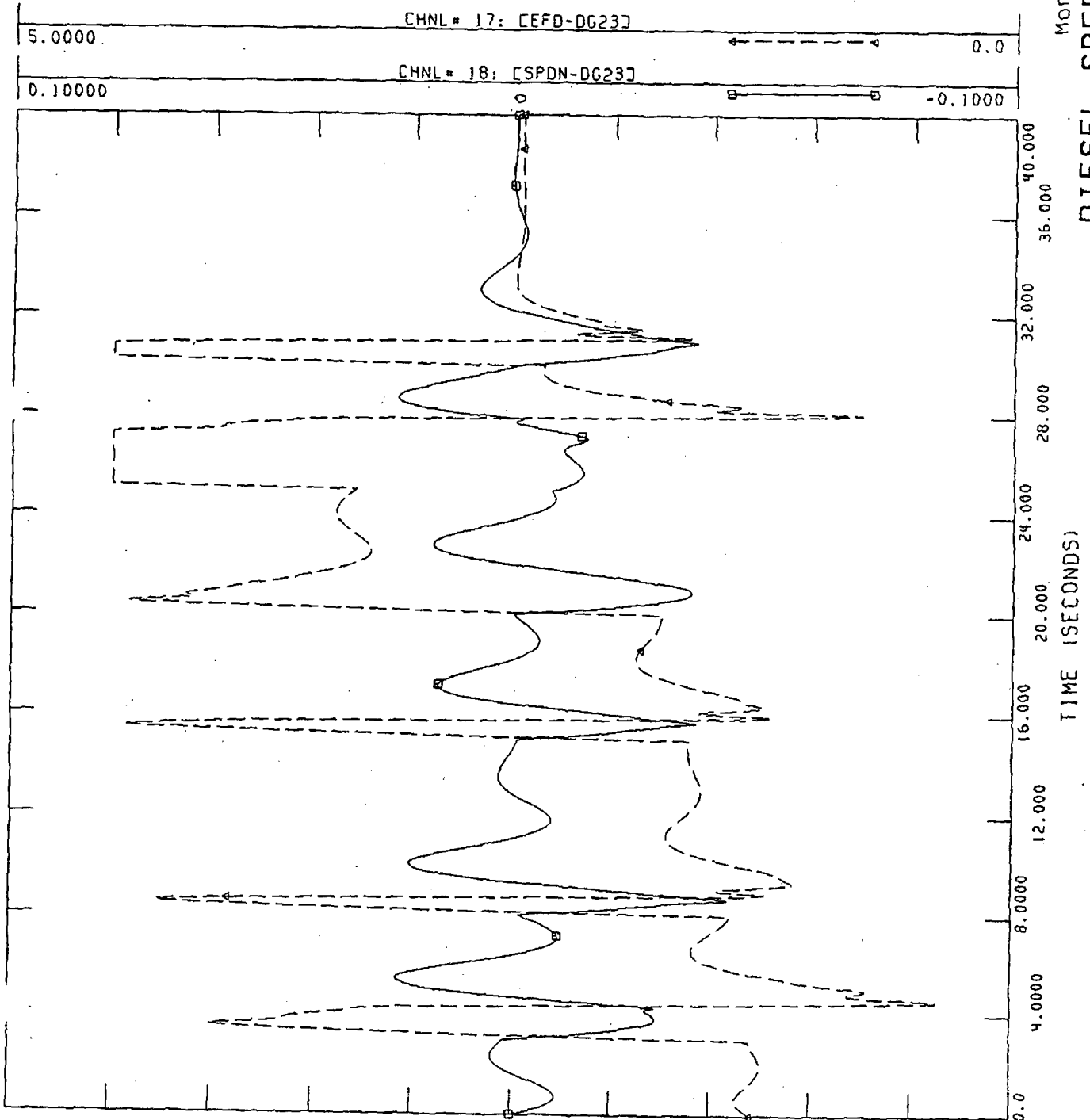
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: MCC26B-SI23-RH22-SW23-CR25-AF23-CS22
FILE: c:\psse24w\coned\dynam\dg23norm.out

Mon, Jan 12 1998 10:27
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 10 TO 50 SECONDS
STARTING SEQUENCE: MCC26B-SI23-RH22-SW23-CR25-AF23-CS22
FILE: c:\psse24w\coned\dynam\dg23norm.out



Mon. Jan 12 1998 10:30
DIESEL SPEED & FLD VOLTS

6	'GENSAL'	1	3.5	0.05	0.05	1.35
	0		1.33	1.0000	0.22	0.14
	0.13		0.2960	0.7540	/	
6	'EXST2A'	1	0.0	60.0	0.15	1.2
	-1.2		1	0.5	0.04	0.50
	3.50		3.50	0.7	4.5	/
6	'DEGOV'	1	0.0220	0.200	0.1	10.000
	0.25		0.039	0.009	0.025	1.069
	-0.05		/			
65	'CMOTOR'		0.0120	0.0750	4.00	0.0600
	0.080		0.009	0.068	0.00	0.432
	2.0		1.000	0.96462	0.5	/ SIP23
66	'CMOTOR'		0.022	0.075	2.80	0.06
	0.070		0.019	0.067	0.000	3.0150
	2.0		1.000	0.84075	0.5	/ CRF25
62	'CMOTOR'		0.020	0.072	2.800	0.050
	0.070		0.014	0.0450	0.00	0.225
	2.0		1.000	0.94244	0.5	/ SWP26
63	'CMOTOR'		0.020	0.072	2.80	0.050
	0.070		0.014	0.045	0.000	0.225
	2.0		1.000	0.94244	0.5	/ SWP23
64	'CMOTOR'		0.016	0.085	3.000	0.040
	0.0850		0.0120	0.0450	0.000	0.601
	2.0		1.000	1.1396	0.5	/ AFP23
67	'CMOTOR'		0.018	0.066	3.600	0.0450
	0.0680		0.0410	0.0550	0.000	0.376
	2.0		1.000	0.98207	0.5	/ RHR22
68	'CMOTOR'		0.018	0.073	3.550	0.070
	0.070		0.0160	0.0750	0.000	0.376
	2.0		1.000	1.00416	0.5	/ CSP22
J	'CMOTOR'		0.020	0.083	3.300	0.060
	0.0840		0.0410	0.0640	0.000	0.404
	2.0		1.000	1.13393	0.5	/ CCP23
70	'CMOTOR'		0.022	0.075	2.800	0.060
	0.070		0.0190	0.0670	0.000	0.449
	2.0		1.000	1.02841	0.5	/ RCP22
69	'CMOTOR'		0.018	0.072	3.600	0.060
	0.072		0.0180	0.0700	0.000	0.181
	0.010		1.000	0.91491	0.5	/ CHP23
0	'NETFRQ'		/			

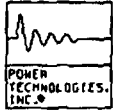
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPDG23N.SNP
LOFL
CASE,DG23CON.SAV
FACT
R. J
STRT
DG23NORM.OUT

RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 61 TO 0.140 MW	/10.0 SEC	MCC26B @140 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI23 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.347	/18.0 SEC	RH22 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW23 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/30.0 SEC	CR25 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 95 TO 0.364	/35.0 SEC	AF23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.321	/40.0 SEC	CS22 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

ATTACHMENT IV

DIESEL-GENERATOR 21 - RECIRCULATION (NORMAL)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)

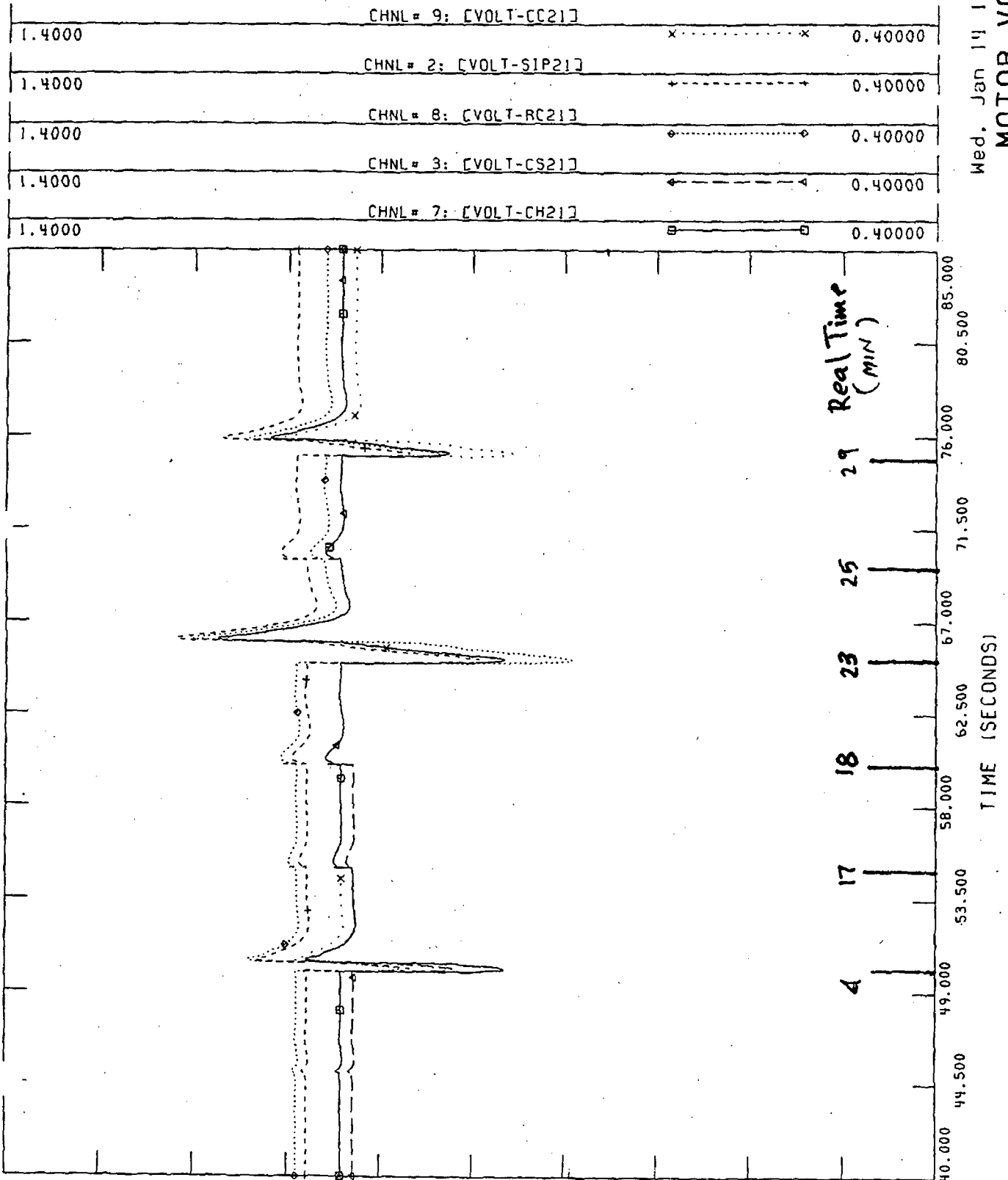
DIESEL GENERATOR #21 BUS 5A

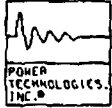
LOADING SEQUENCE FROM 1 TO 29 MINUTES

SEQUENCE: CH21 ON - CH21 OFF - CSP21 OFF - RCP21 ON - S121 0

FILE: c:\psse24w\coned\dynam\recird21.out

Wed. Jan 14 1998 9:45
MOTOR VOLTAGES





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)

DIESEL GENERATOR #21 BUS 5A

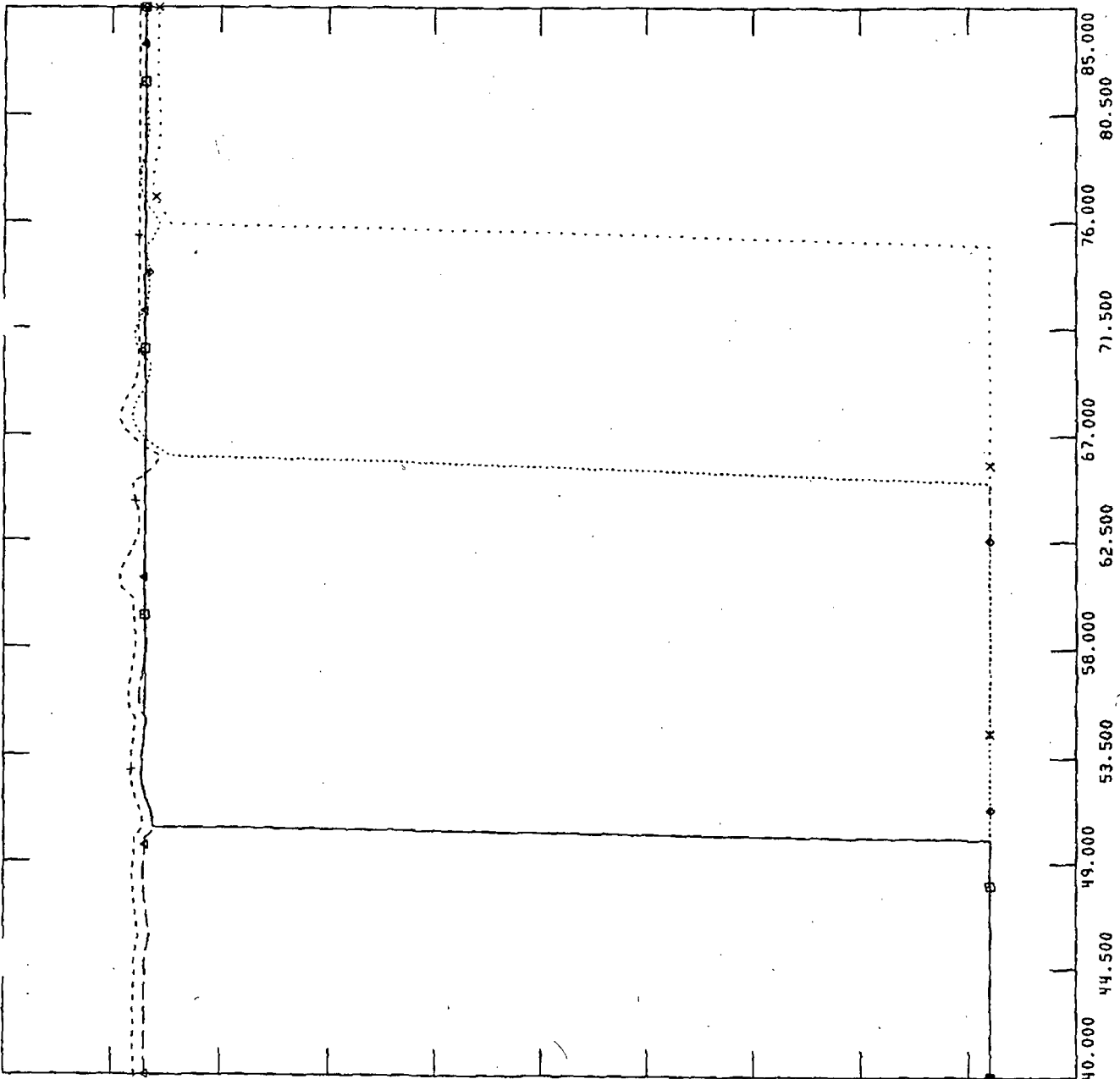
LOADING SEQUENCE FROM 1 TO 29 MINUTES

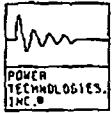
SEQUENCE: CH21 ON - CH21 OFF - CSP21 OFF - RCP21 ON - SI21 0

FILE: c:\psse24w\coned\dynam\recird21.out

Wed. Jan 14 1998 9:42
MOTOR SPEEDS

0.15000	CHNL # 17: [SPDN-CC21]	x.....x	-1.100
0.15000	CHNL # 10: [SPDN-SIP21]	+-----+	-1.150
0.15000	CHNL # 16: [SPDN-RC21]	o.....o	-1.100
0.15000	CHNL # 11: [SPDN-CS21]	←-----→	-1.100
0.15000	CHNL # 15: [SPDN-CH21]	□-----□	-1.100





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)

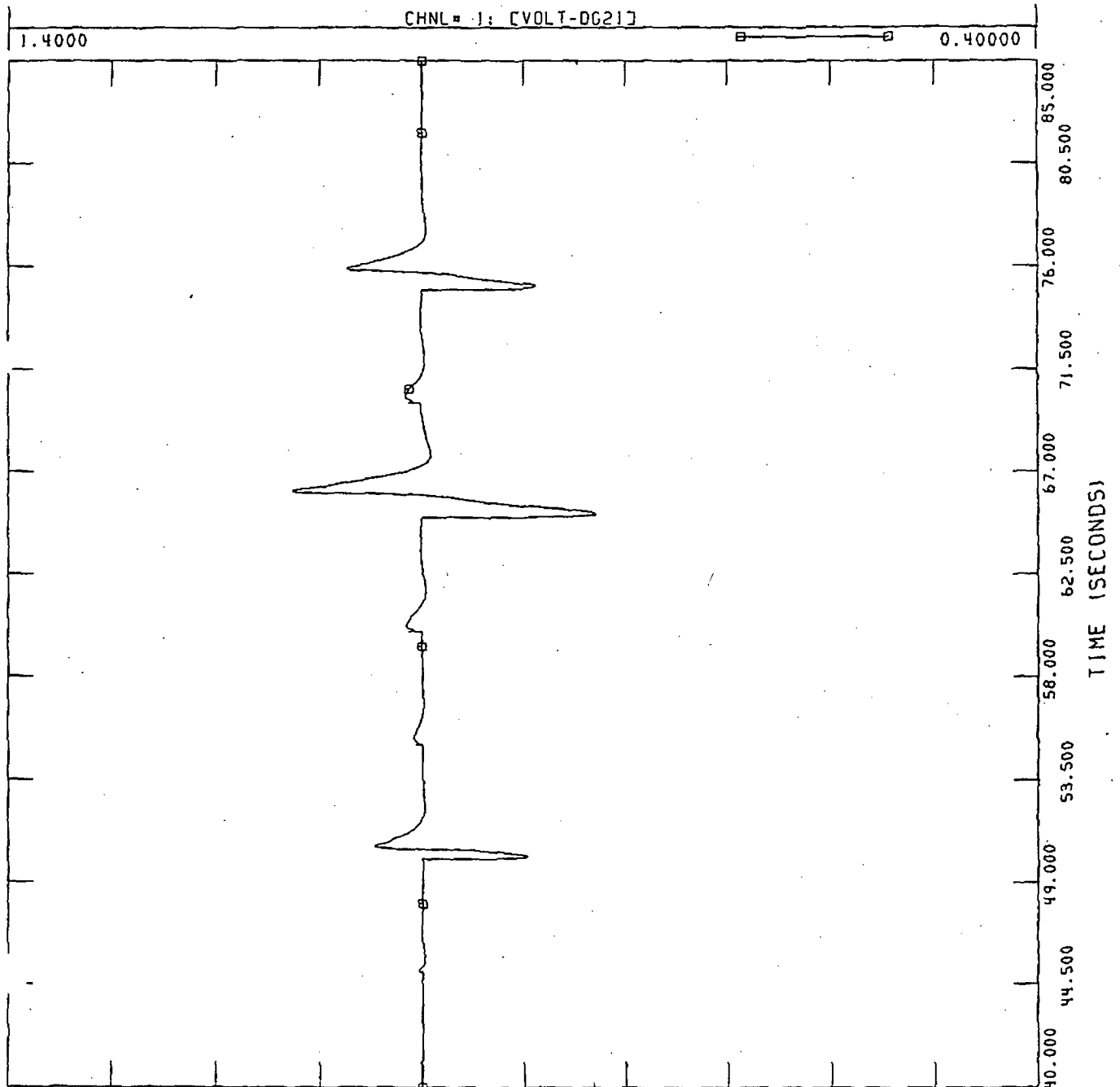
DIESEL GENERATOR #21 BUS 5A

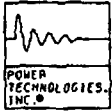
LOADING SEQUENCE FROM 1 TO 29 MINUTES

SEQUENCE: CH21 ON - CH21 OFF - CSP21 OFF - RCP21 ON - SI21 0

FILE: c:\psse24w\coned\dynam\recird21.out

Wed. Jan 14 1998 9:47
DIESEL VOLTS





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)

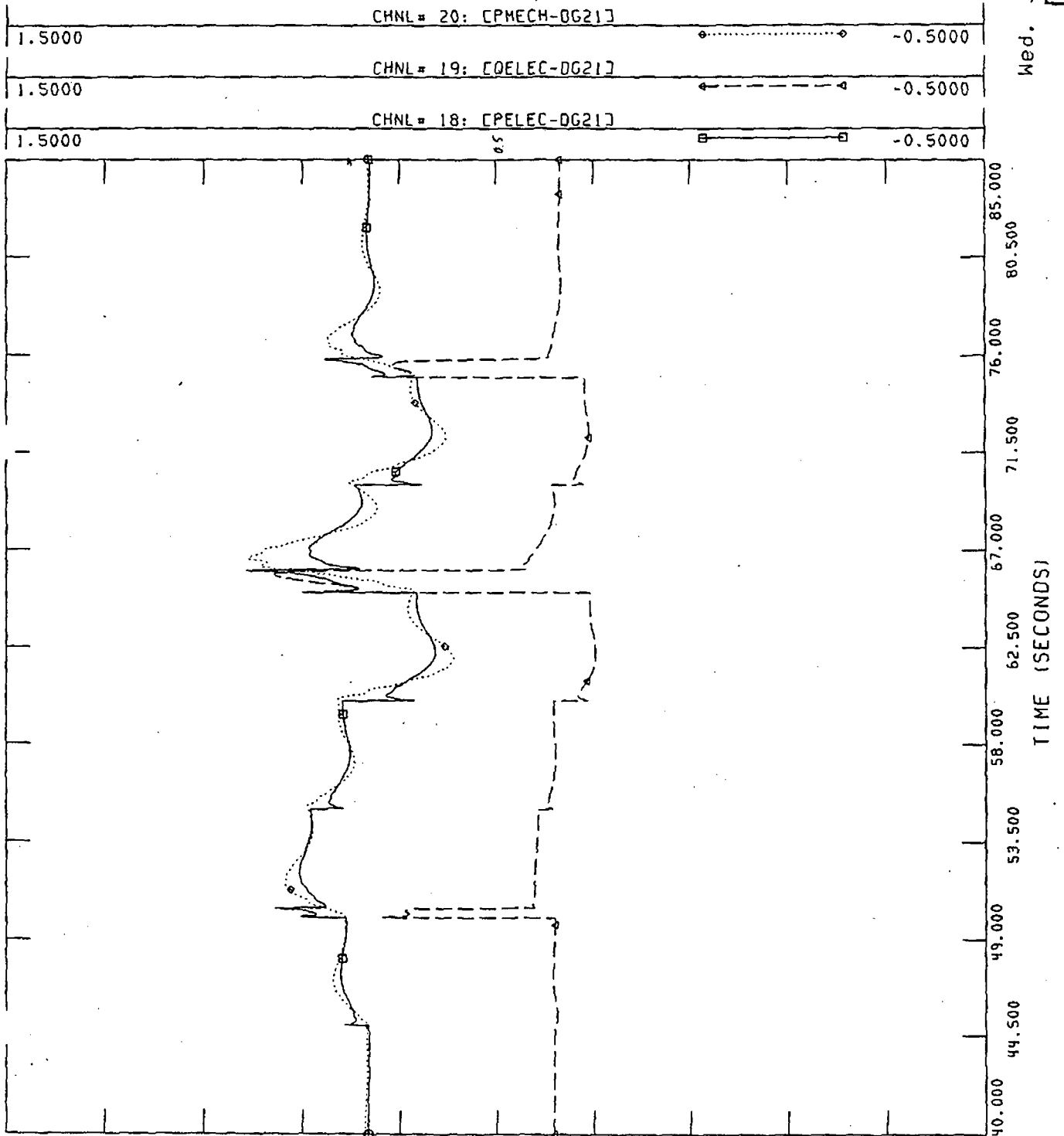
DIESEL GENERATOR #21 BUS 5A

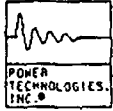
LOADING SEQUENCE FROM 1 TO 29 MINUTES

SEQUENCE: CH21 ON - CH21 OFF - CSP21 OFF - RCP21 ON - SI21 0

FILE: c:\psse24w\coned\dynam\recird21.out

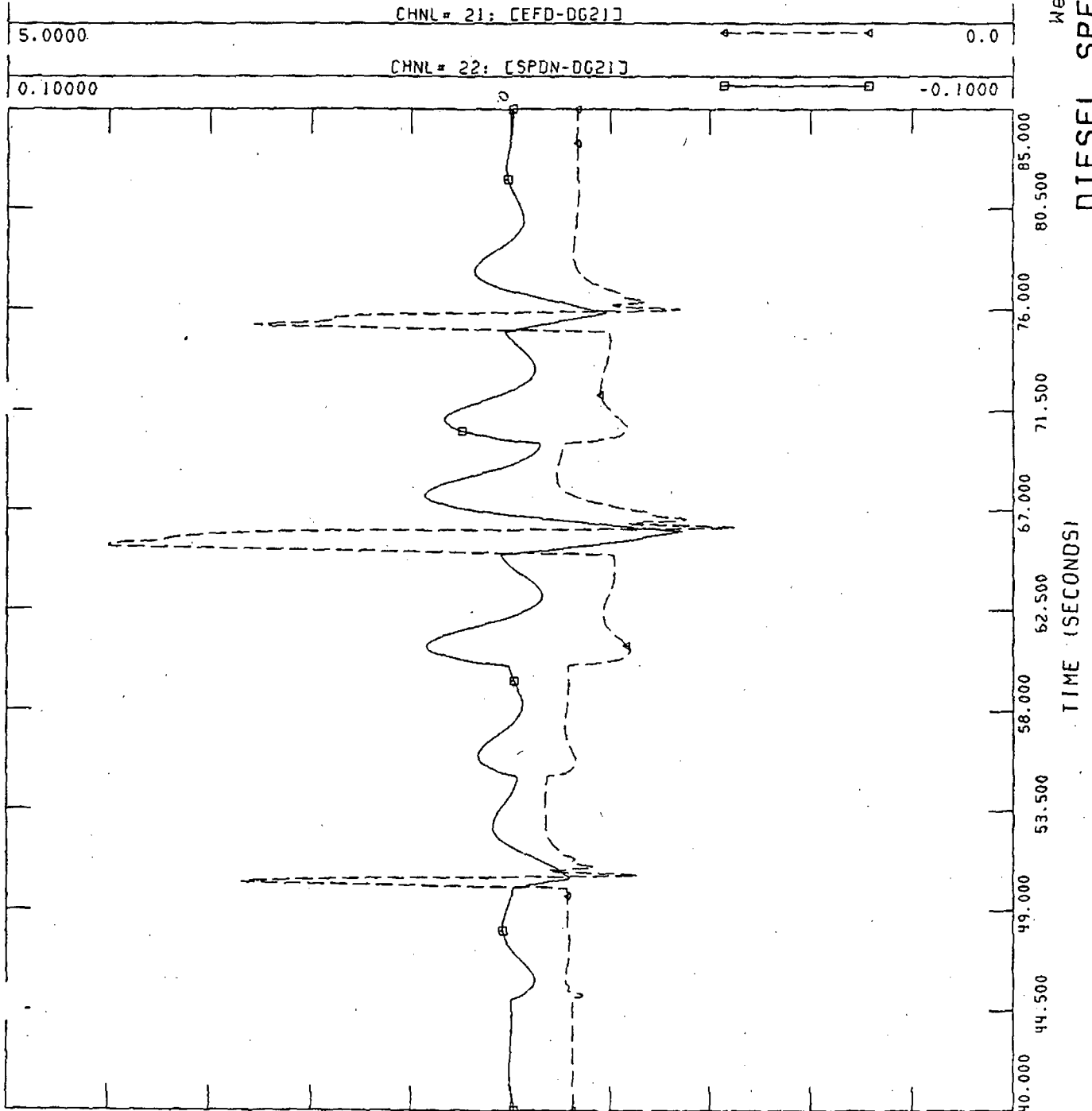
Wed. Jan 14 1998 9:4
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 29 MINUTES
SEQUENCE: CH21 ON - CH21 OFF - CSP21 OFF - RCP21 ON - S121 0
FILE: c:\psse24w\coned\dynam\recird21.out

Wed. Jan 14 1998 9:48
DIESEL SPEED & FLD VOLTS



5	'GENSAL'	1	3.5	0.05	0.05	1.35
		0	1.33	1.000	0.22	0.14
		0.13	0.296	0.7540	/	
5	'EXST2A'	1	0	60.0	0.15	1.2
		-1.2	1	0.5	0.04	0.50
		3.50	3.50	0.7	4.5	/
5	'DEGOV'	1	0.0220	0.20	0.1	10.000
		0.25	0.039	0.009	0.025	1.069
		-0.05	/			
51	'CMOTOR'		0.0120	0.0750	4.00	0.0600
		0.080	0.009	0.068	0.0	0.4320
		2.0	1.00	0.96462	0.5	/ SI21
52	'CMOTOR'		0.018	0.0730	3.55	0.07
		0.070	0.016	0.075	0.0	0.376
		2.0	1.0	1.00416	0.5	/ CS21
53	'CMOTOR'		0.022	0.075	2.80	0.060
		0.070	0.0190	0.0670	0.0	3.015
		2.0	1.0	0.84075	0.5	/ CRF21
56	'CMOTOR'		0.022	0.075	2.80	0.060
		0.07	0.019	0.067	0.0	3.015
		2.0	1.0	0.84075	0.5	/ CRF22
59	'CMOTOR'		0.020	0.0720	2.80	0.05
		0.07	0.014	0.0450	0.0	0.225
		2.0	1.0	0.94244	0.5	/ SWP24
50	'CMOTOR'		0.020	0.072	2.8	0.05
		0.07	0.014	0.045	0.0	0.225
		2.0	1.0	0.94244	0.5	/ SWP21
55	'CMOTOR'		0.020	0.083	3.30	0.060
		0.0840	0.0410	0.06400	0.0	0.404
		2.0	1.0	1.13393	0.5	/ CCP21
7	'CMOTOR'		0.0220	0.0750	2.800	0.0600
		0.070	0.0190	0.0670	0.0	0.4490
		2.0	1.0	1.02841	0.5	/ RP21
58	'CMOTOR'		0.018	0.072	3.60	0.06
		0.072	0.018	0.07	0.0	0.181
		2.0	1.0	0.914910	0.5	/ CHP21
0	'NETFRQ'		/			

MENU, OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR, SNPDG21N.SNP
LOFL
CASE, DG21CON.SAV
FACT
R. 1
STRT
RECIRD21.OUT

RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 54 TO 0.143 MW
RUN TO 3 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.347
RUN TO 15 SECONDS PRINT 0 PLOT 3
SET CON 108 TO 0.321
RUN TO 20 SECONDS PRINT 0 PLOT 3
SET CON 69 TO 0.319
RUN TO 25 SECONDS PRINT 0 PLOT 3
SET CON 82 TO 0.319
RUN TO 30 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.349
RUN TO 45 SECONDS PRINT 0 PLOT 3
CHANGE MWP LOAD BUS 49 TO 0.109 MW
RUN TO 50 SECONDS PRINT 0 PLOT 3
SET CON 147 TO 0.177 *never transition*
RUN TO 55 SECONDS PRINT 0 PLOT 3
SET CON 147 TO 0.0
RUN TO 60 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.0
RUN TO 65 SECONDS PRINT 0 PLOT 3
SET CON 134 TO 0.319
RUN TO 70 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.0
RUN TO 75 SECONDS PRINT 0 PLOT 3
SET CON 121 TO 0.217
RUN TO 85 SECONDS PRINT 0 PLOT 3
PASS
FIN
END

/10.0 SEC MCC26A @143 KW

/13.0 SEC SI21 ON

/25.0 SEC SW21 ON

/30.0 SEC CR21 ON

/35.0 SEC CR22 ON

/40.0 SEC CS21 ON

/MCC29A @ 109 KW

/4.0 MIN CH21 ON

/17.0 MIN CH21 OFF

/18.0 MIN CSP21 OFF ✓

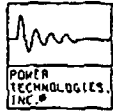
/23.0 MIN RCP21 ON

/25.0 MIN SI21 OFF

/29.0 MIN CC21 ON

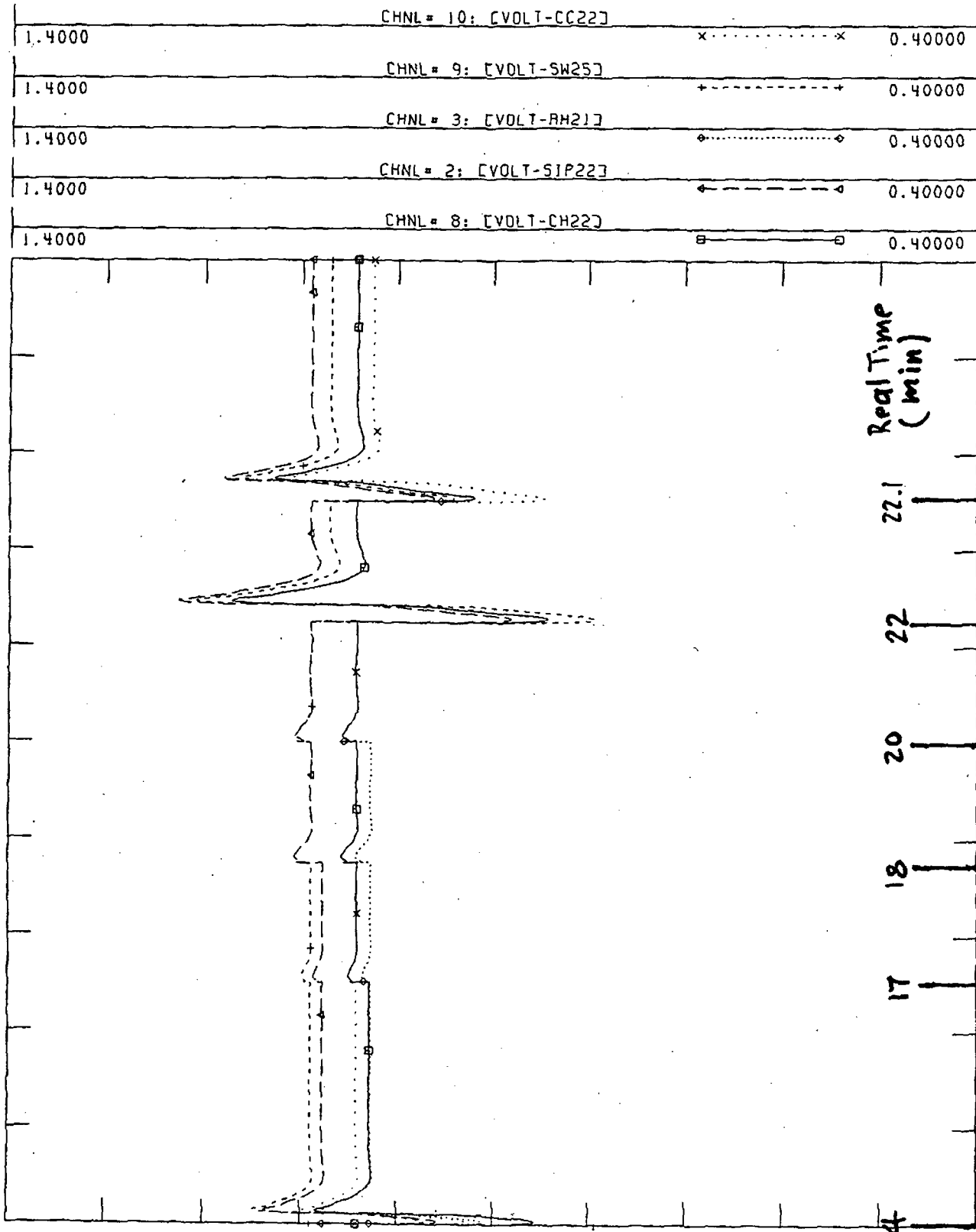
ATTACHMENT V

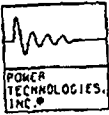
DIESEL-GENERATOR 22 - RECIRCULATION (NORMAL)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 22 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-S122 OFF-RH21 OFF-SW25 ON
FILE: c:\psse24w\coned\dynam\recird22.out

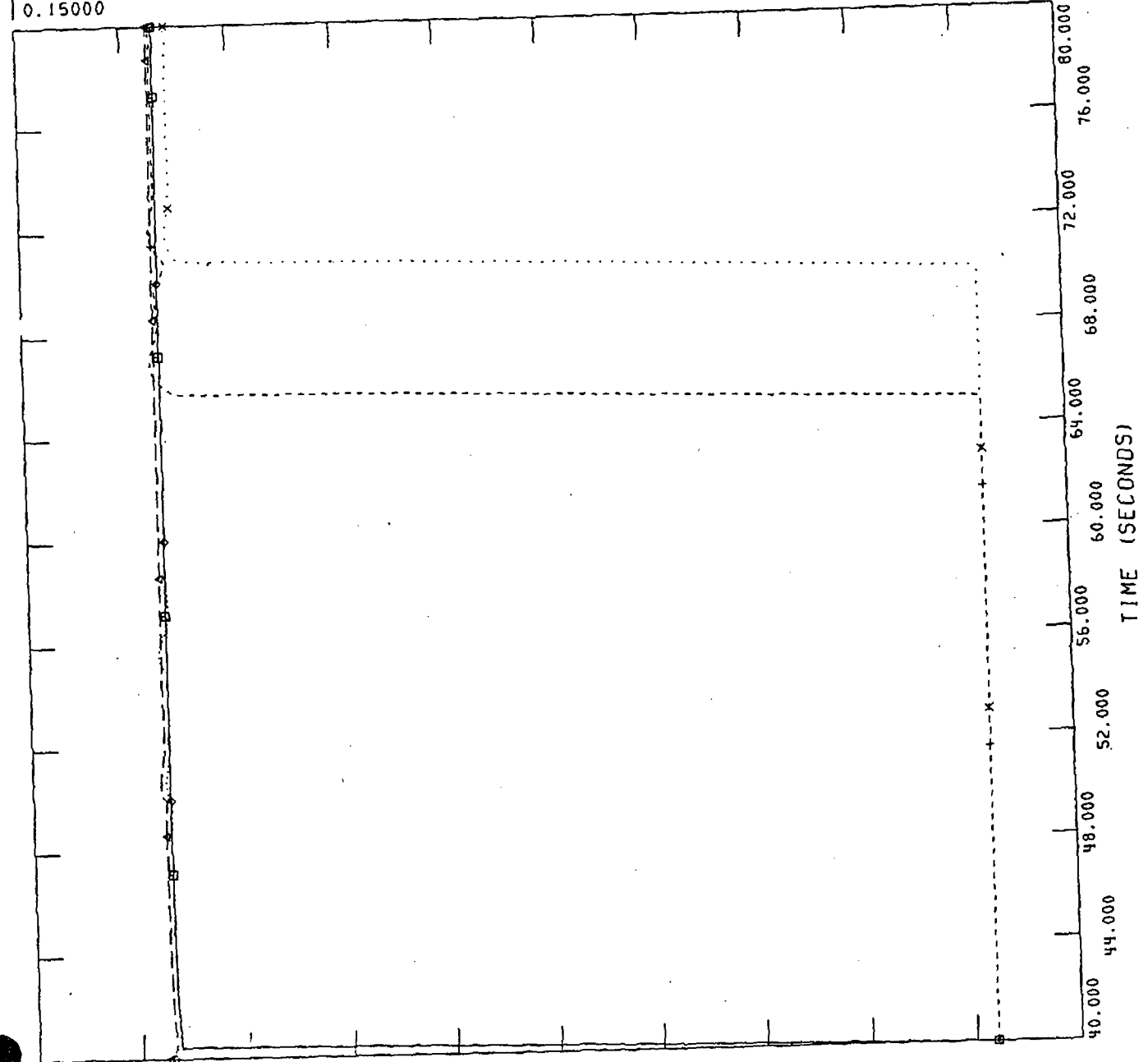
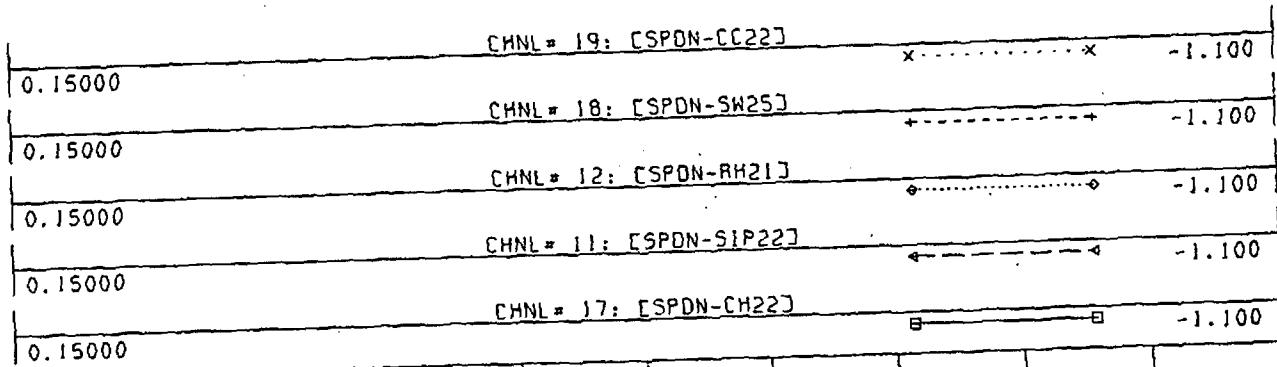
Wed. Jan 14 1998 10:00
MOTOR VOLTAGES

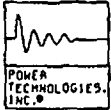




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 22 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-SI22 OFF-RH21 OFF-SW25 ON
FILE: c:\psse24w\coned\dynam\recird22.out

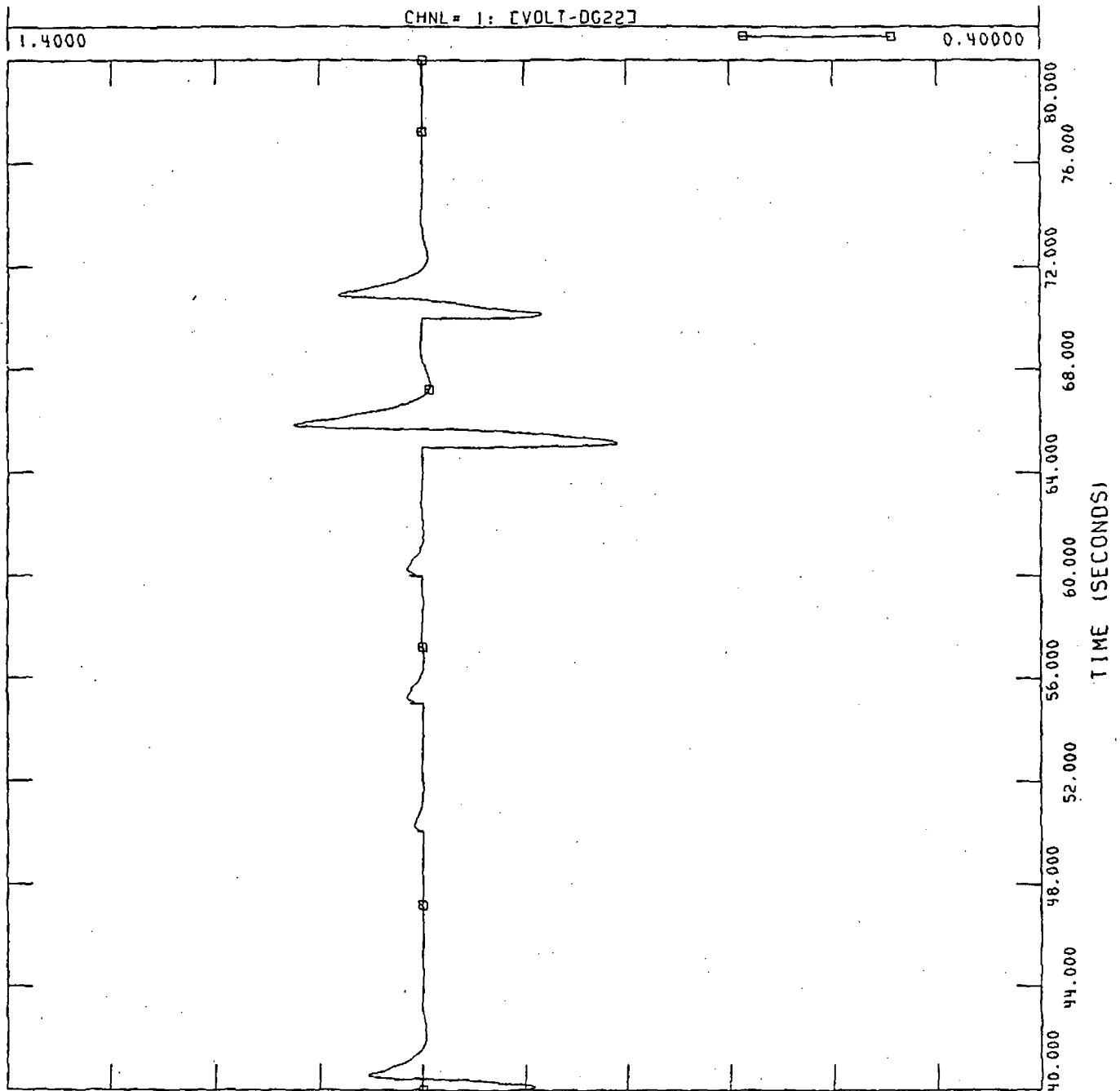
Wed. Jan 14 1998 9:51
MOTOR SPEEDS

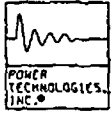




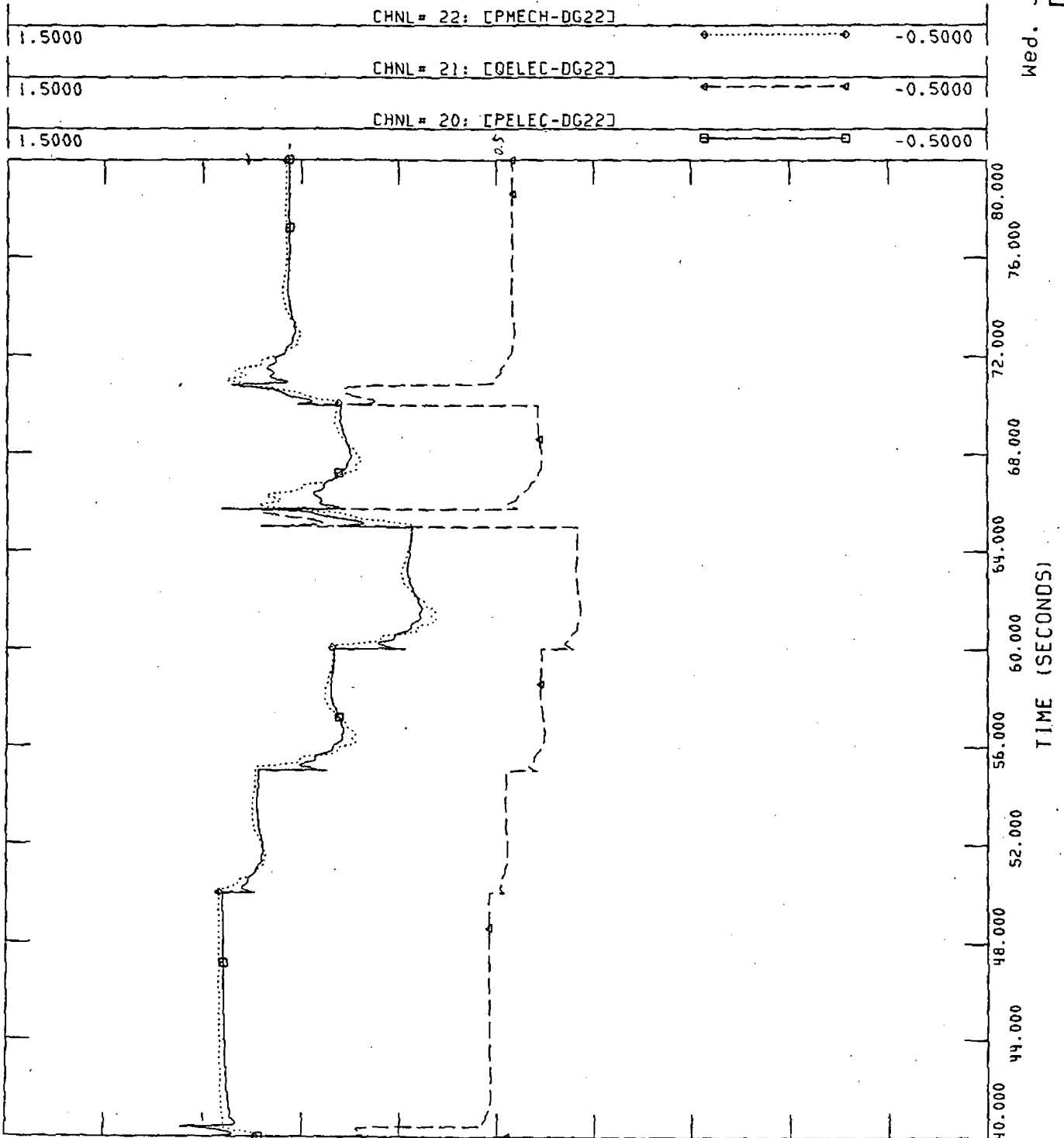
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 22 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-S122 OFF-RH21 OFF-SW25 ON
FILE: c:\psse24w\coned\dynam\recird22.out

Wed. Jan 14 1998 10:01
DIESEL VOLTS

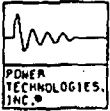




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 22 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-S122 OFF-AH21 OFF-SW25 ON
FILE: c:\psse24w\coned\dynam\recird22.out

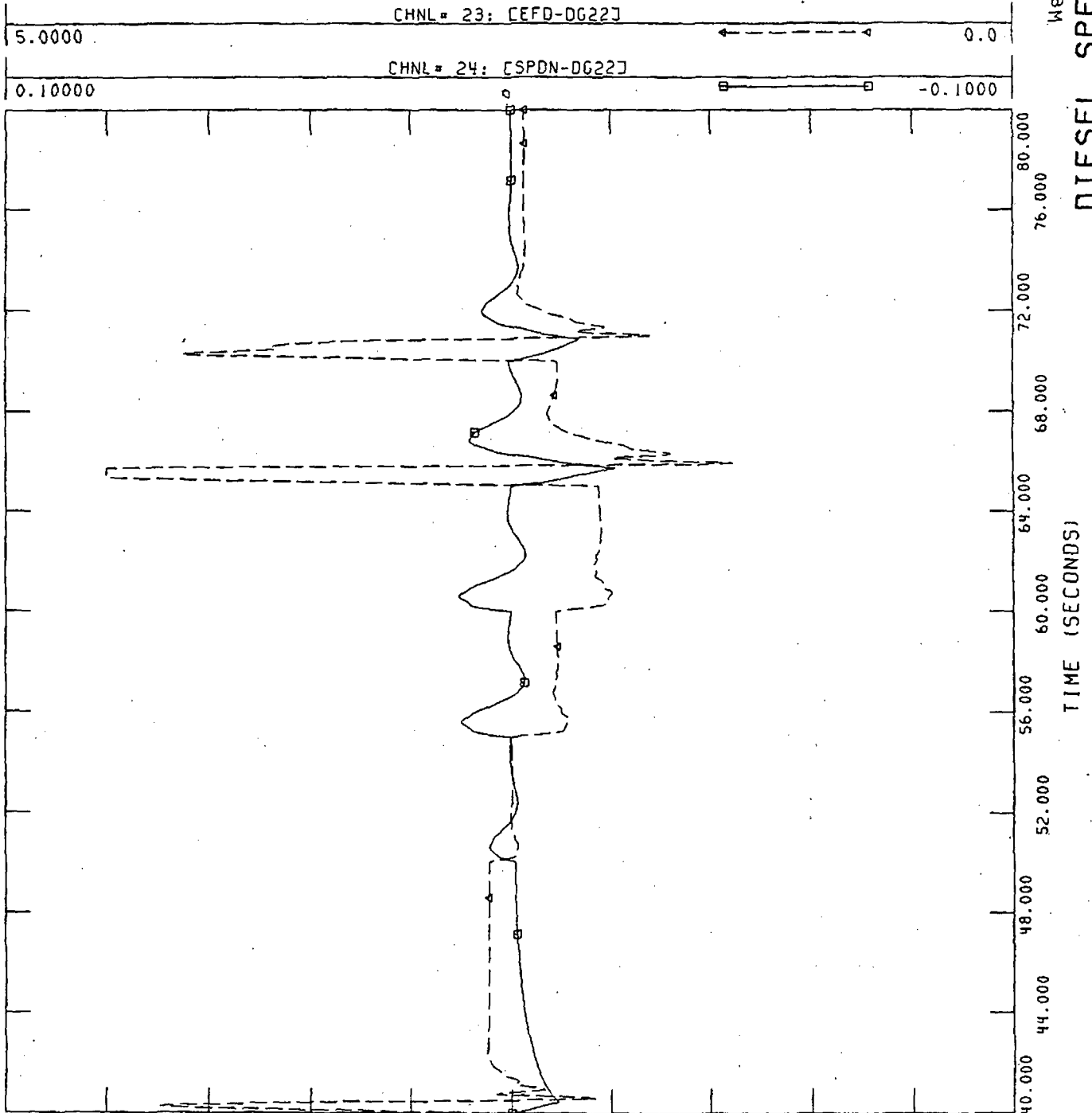


Wed. Jan 14 1998 10:00
DIESEL POWER



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 22 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-SI22 OFF-RH2) OFF-SW25 ON
FILE: c:\psse24w\coned\dynam\recird22.out

Wed, Jan 14 1998 10:11
DIESEL SPEED & FLD VOLTS



2	'GENSAL'	1	3.5	0.05	0.05	1.35
	0		1.33	1.0000	0.22	0.140
	0.1300		0.2960	0.7540		/
2	'EXST2A'	1	0	60.00	0.15	1.2
	-1.2		1.	0.5	0.04	0.50
	3.5		3.5	0.7	4.5	/
2	'DEGOV'	1	0.022	0.20	0.10	20.000
	0.25		0.039	0.009	0.025	1.069
	-0.05		/			
26	'CMOTOR'		0.0120	0.07500	4.000	0.0600
	0.080		0.0090	0.0680	0.00	0.4320
	2.0		1.000	0.964620	0.5	/ SIP22
27	'CMOTOR'		0.022	0.075	2.800	0.060
	0.070		0.019	0.067	0.000	3.0150
	2.0		1.000	0.84075	0.5	/ CR23
33	'CMOTOR'		0.022	0.075	2.8000	0.060
	0.070		0.0190	0.0670	0.000	3.015
	2.0		1.000	0.84075	0.5	/ CR24
25	'CMOTOR'		0.020	0.0720	2.800	0.050
	0.070		0.014	0.0450	0.000	0.2250
	2.0		1.000	0.94244	0.5	/ SWP22
34	'CMOTOR'		0.0200	0.0720	2.800	0.050
	0.0700		0.0140	0.0450	0.000	0.225
	2.0		1.000	0.94244	0.5	/ SWP25
36	'CMOTOR'		0.016	0.070	3.800	0.070
	0.070		0.0160	0.0750	0.00	0.376
	2.0		1.000	0.99984	0.5	/ RH21
37	'CMOTOR'		0.016	0.085	3.000	0.040
	0.0850		0.0120	0.0450	0.00	0.601
	2.0		1.000	1.13955	0.5	/ AF21
24	'CMOTOR'		0.020	0.0830	3.300	0.060
	0.0840		0.0410	0.0640	0.00	0.404
	2.0		1.000	1.13393	0.5	/ CCP22
32	'CMOTOR'		0.0180	0.0720	3.600	0.060
	0.072		0.0180	0.0700	0.00	0.181
	2.0		1.000	0.91491	0.5	/ CHP22
0	'NETFRQ'		/			

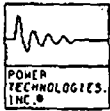
MENU, OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR, SNPDG22N.SNP
 LOFL
 CASE, DG22CON.SAV
 FACT
 R. J
 STRT
 RECIRD22.OUT

RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 31 TO 0.206 MW	/10.0 SEC	MCC26C @206 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI22 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.349	/18.0 SEC	RH21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW22 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR24 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/35.0 SEC	CR23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.364	/40.0 SEC	AF21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.177	/4.0 MIN	CH22 ON
RUN TO 50 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.0	/17.0 MIN	CH22 OFF
RUN TO 55 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.0	/18.0 MIN	SI22 OFF
RUN TO 60 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.0	/20.0 MIN	RH21 OFF
RUN TO 65 SECONDS PRINT 0 PLOT 3		
SET CON 95 TO 0.321	/22.0 MIN	SW25 ON
RUN TO 70 SECONDS PRINT 0 PLOT 3		
SET CON 134 TO 0.217	/22.0 MIN	CC22 ON
RUN TO 80 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

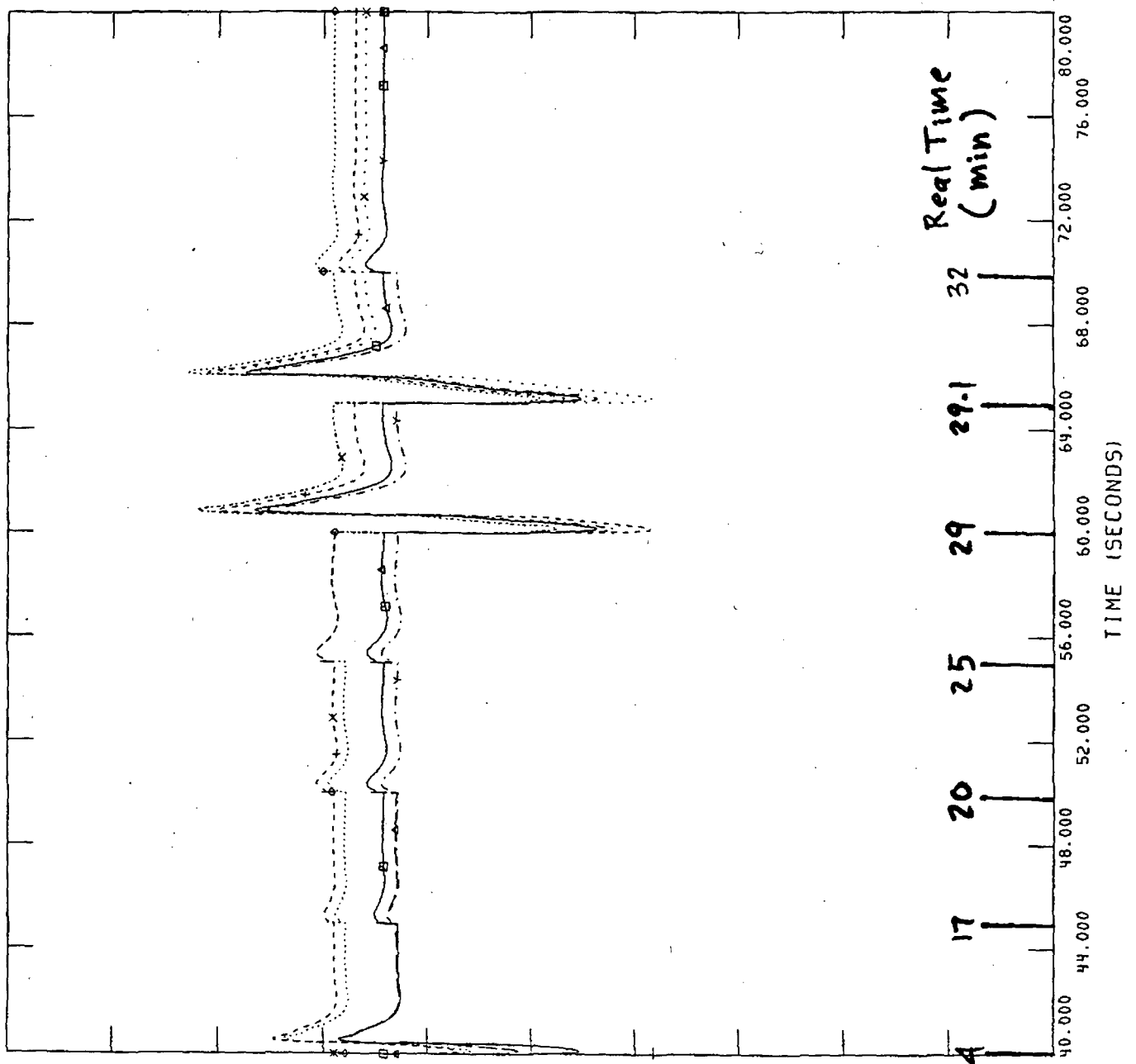
ATTACHMENT VI

DIESEL-GENERATOR 23 - RECIRCULATION (NORMAL)

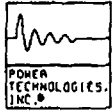


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 32 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-AH22 OFF-SI23 OFF-SW26 ON-RCP22 0
FILE: c:\psse24w\coned\dynam\recird23.out

1.4000	CHNL # 7: [VOLT-CS22]	0.40000
1.4000	CHNL # 10: [VOLT-RCP22]	0.40000
1.4000	CHNL # 9: [VOLT-SW26]	0.40000
1.4000	CHNL # 2: [VOLT-SIP23]	0.40000
1.4000	CHNL # 3: [VOLT-AH22]	0.40000
1.4000	CHNL # 8: [VOLT-CH23]	0.40000



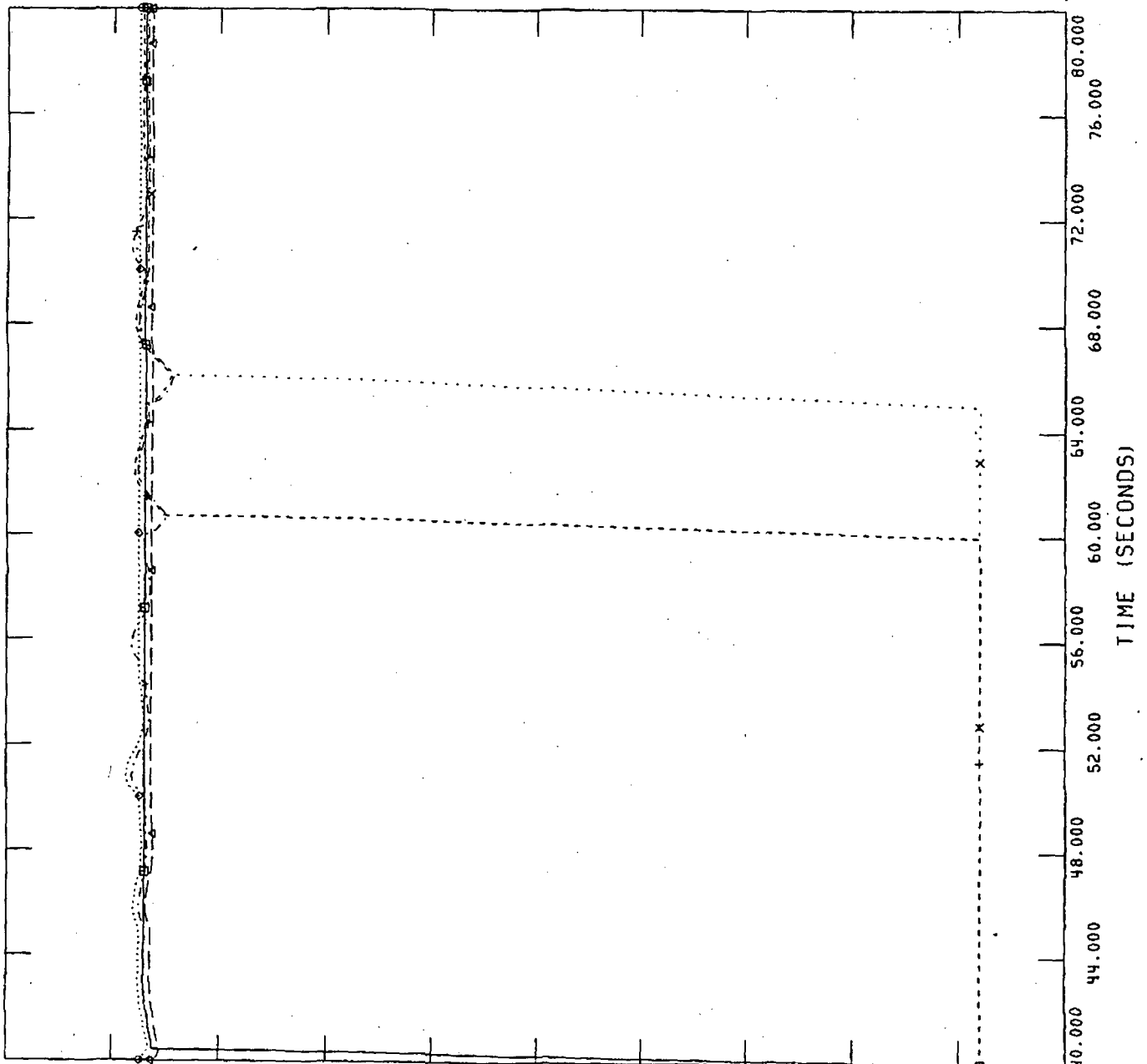
Wed. Jan 14 1998 10:24
MOTOR VOLTAGES



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 32 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SI23 OFF-SW26 ON-RCP22 0
FILE: c:\psse24w\coned\dynam\recird23.out

Wed, Jan 14 1998 10:22
MOTOR SPEEDS

0.15000	CHNL = 16: [SPDN-CS22]	-1.100
0.15000	CHNL = 20: [SPDN-RCP22]	-1.100
0.15000	CHNL = 19: [SPDN-SW26]	-1.100
0.15000	CHNL = 11: [SPDN-SIP23]	-1.100
0.15000	CHNL = 12: [SPDN-RH22]	-1.100
0.15000	CHNL = 17: [SPDN-CH23]	-1.100





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)

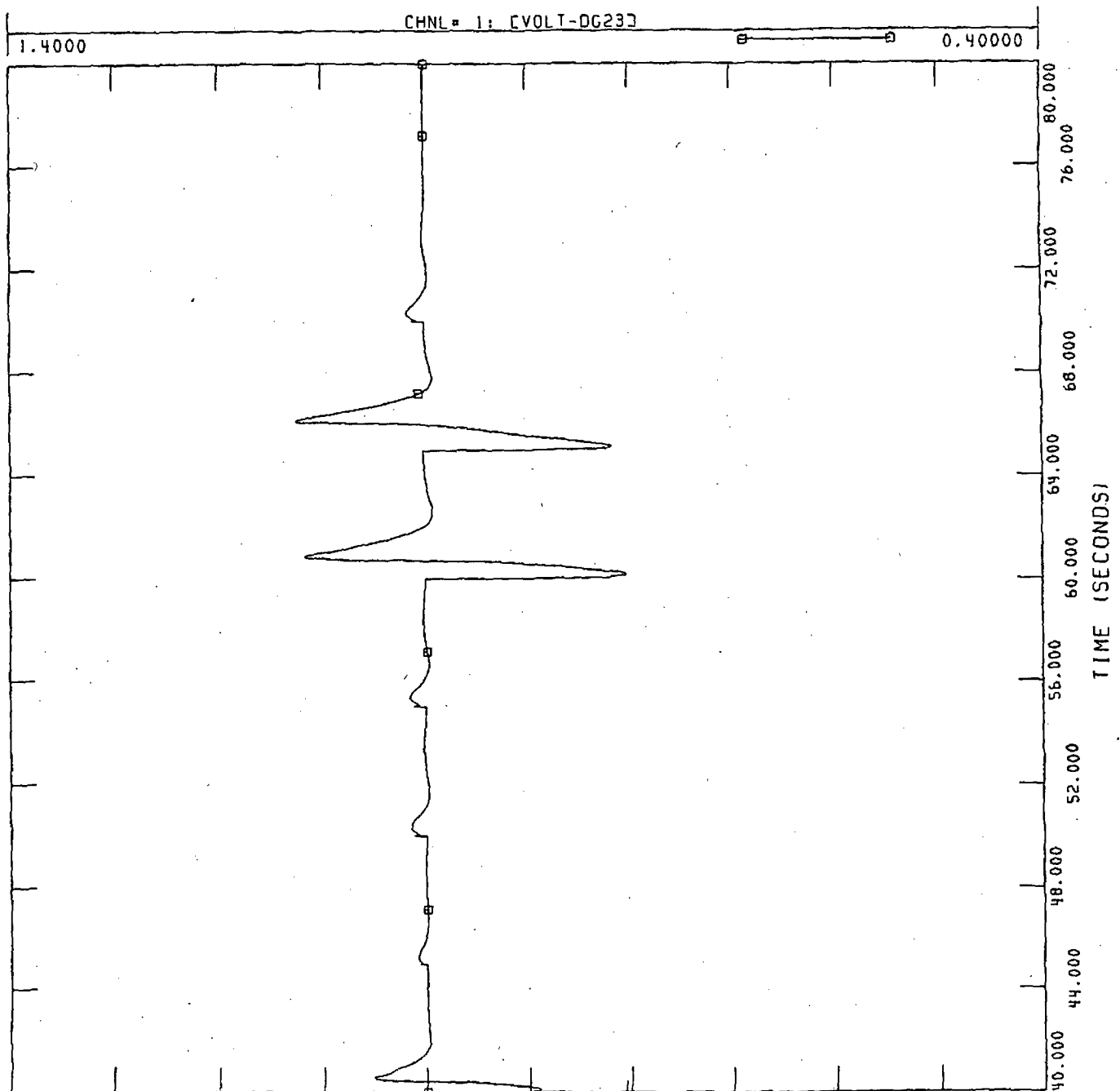
DIESEL GENERATOR #23 BUS 6A

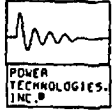
LOADING SEQUENCE FROM 1 TO 32 MINUTES

SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SI23 OFF-SW26 ON-RCP22 0

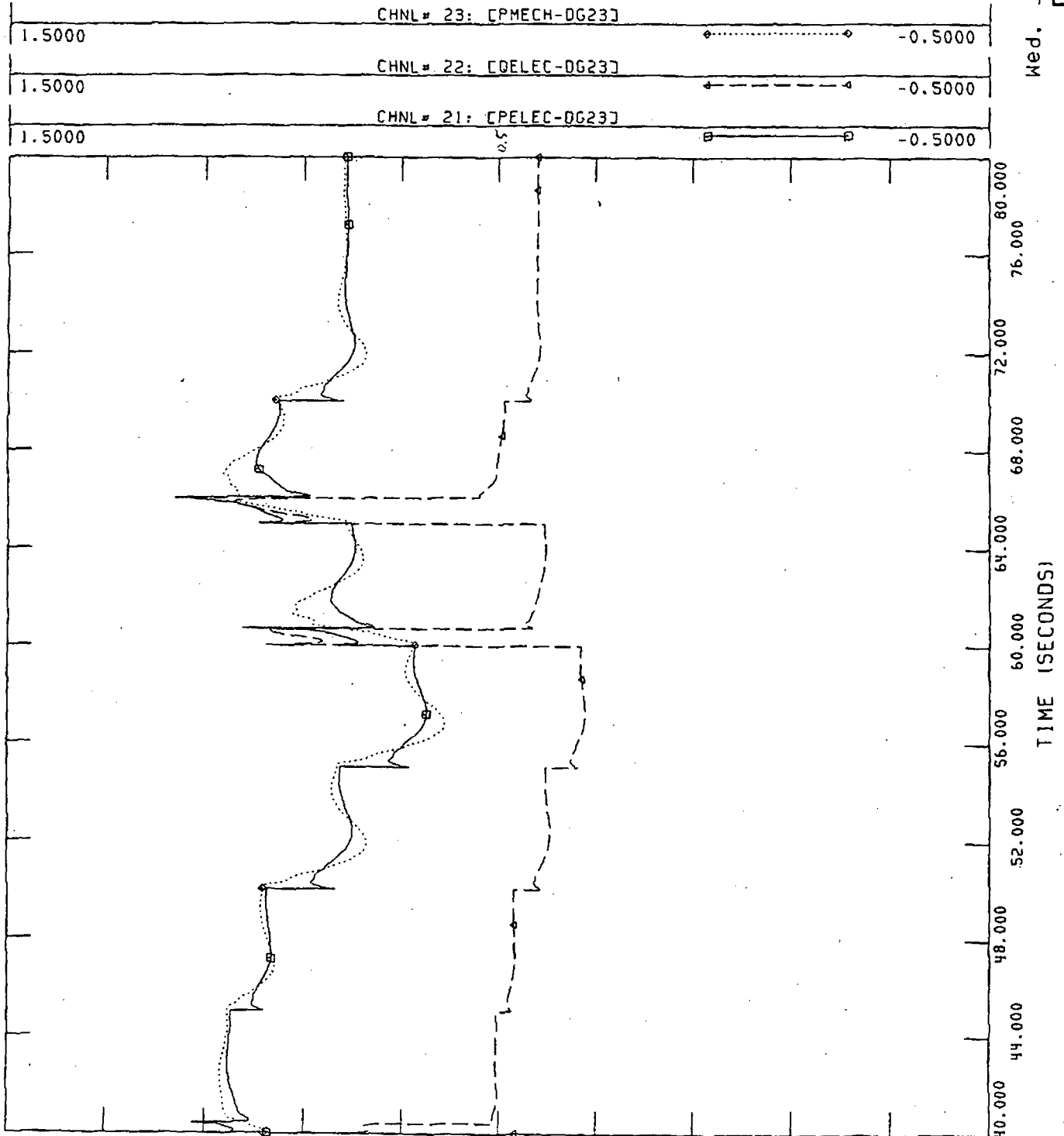
FILE: c:\psse24w\coned\dynam\recird23.out

Wed. Jan 14 1998 10:26
DIESEL VOLTS

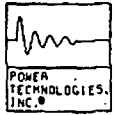




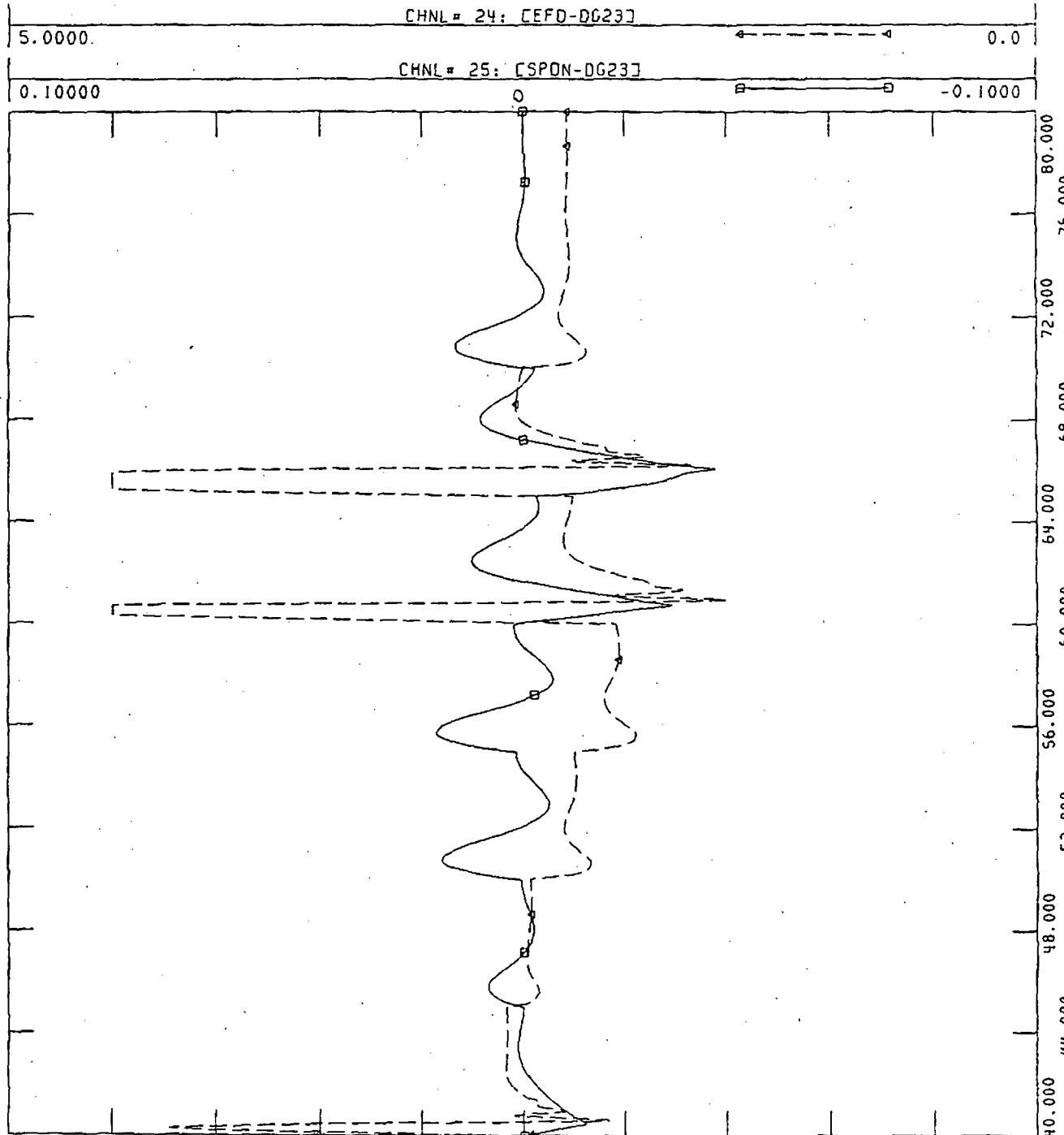
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 32 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-AH22 OFF-S123 OFF-SW26 ON-RCP22 0
FILE: c:\psse24w\coned\dynam\recird23.out



Wed. Jan 14 1998 10:10
DIESEL POWE



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 32 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-AH22 OFF-SI23 OFF-SW26 ON-RCP22 0
FILE: c:\psse24w\coned\dynam\recird23.out



Wed. Jan 14 1998 10:28
DIESEL SPEED & FLD VOLTS

6	'GENSAL'	1	3.5	0.05	0.05	1.35
	0		1.33	1.0000	0.22	0.14
	0.13		0.2960	0.7540	/	
6	'EXST2A'	1	0.0	60.0	0.15	1.2
	-1.2		1	0.5	0.04	0.50
	3.50		3.50	0.7	4.5	/
6	'DEGOV'	1	0.0220	0.200	0.1	10.000
	0.25		0.039	0.009	0.025	1.069
	-0.05		/			
65	'CMOTOR'		0.0120	0.0750	4.00	0.0600
	0.080		0.009	0.068	0.00	0.432
	2.0		1.000	0.96462	0.5	/
66	'CMOTOR'		0.022	0.075	2.80	0.06
	0.070		0.019	0.067	0.000	3.0150
	2.0		1.000	0.84075	0.5	/
62	'CMOTOR'		0.020	0.072	2.800	0.050
	0.070		0.014	0.0450	0.00	0.225
	2.0		1.000	0.94244	0.5	/
63	'CMOTOR'		0.020	0.072	2.80	0.050
	0.070		0.014	0.045	0.000	0.225
	2.0		1.000	0.94244	0.5	/
64	'CMOTOR'		0.016	0.085	3.000	0.040
	0.0850		0.0120	0.0450	0.000	0.601
	2.0		1.000	1.1396	0.5	/
67	'CMOTOR'		0.018	0.066	3.600	0.0450
	0.0680		0.0410	0.0550	0.000	0.376
	2.0		1.000	0.98207	0.5	/
68	'CMOTOR'		0.018	0.073	3.550	0.070
	0.070		0.0160	0.0750	0.000	0.376
	2.0		1.000	1.00416	0.5	/
60	'CMOTOR'		0.020	0.083	3.300	0.060
	0.0840		0.0410	0.0640	0.000	0.404
	2.0		1.000	1.13393	0.5	/
70	'CMOTOR'		0.022	0.075	2.800	0.060
	0.070		0.0190	0.0670	0.000	0.449
	2.0		1.000	1.02841	0.5	/
69	'CMOTOR'		0.018	0.072	3.600	0.060
	0.072		0.0180	0.0700	0.000	0.181
	2.0		1.000	0.91491	0.5	/
0	'NETFRQ'		/			CHP23

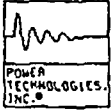
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR,SNPDG23N.SNP
 LOFL
 CASE,DG23CON.SAV
 FACT
 R. N
 STRT
 RECIRD23.OUT

RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 61 TO 0.140 MW	/10.0 SEC	MCC26B @140 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI23 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.347	/18.0 SEC	RH22 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW23 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/30.0 SEC	CR25 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 95 TO 0.364	/35.0 SEC	AF23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.321	/40.0 SEC	CS22 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
SET CON 160 TO 0.177	/4.0 MIN	CH23 ON
RUN TO 45 SECONDS PRINT 0 PLOT 3		
SET CON 160 TO 0.0	/17.0 MIN	CH23 OFF
RUN TO 50 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.0	/20.0 MIN	RH22 OFF
RUN TO 55 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.0	/25.0 MIN	SI23 OFF
RUN TO 60 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.321	/29.0 MIN	SW26 ON
RUN TO 65 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.319	/29.0 MIN	RCP22 ON
RUN TO 70 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.0	/32.0 MIN	CS22 OFF
RUN TO 80 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

ATTACHMENT VII

DIESEL GENERATOR 22 - RECIRCULATION (FAILURE OF DG21)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

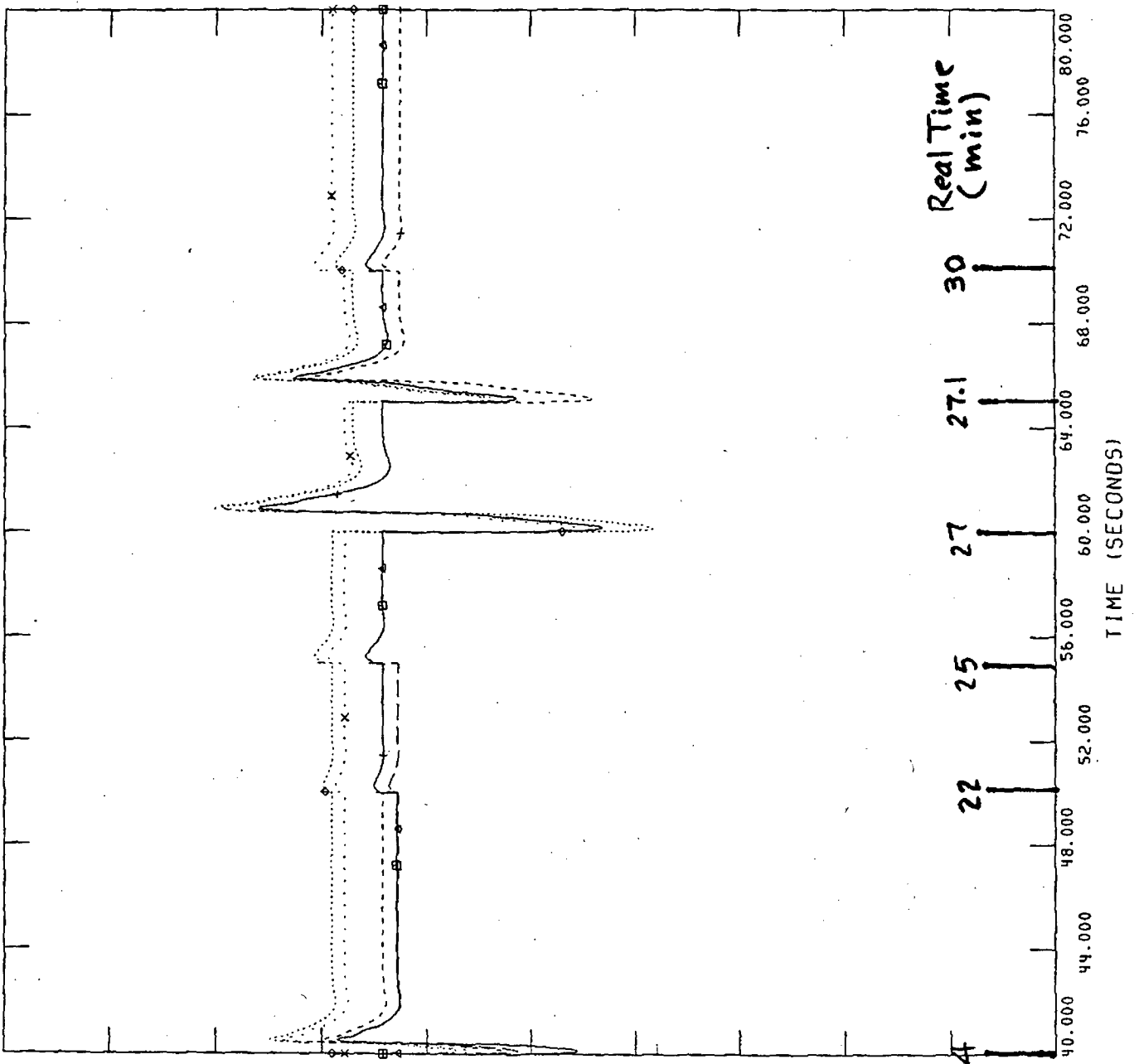
DIESEL GENERATOR #22 BUSSES 2A & 3A

LOADING SEQUENCE FROM 1 TO 30 MINUTES

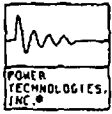
SEQUENCE: CH22 ON-CH22 OFF-RH21 ON-SW25 ON-CC22 ON-SI22 OFF

FILE: c:\psse24w\coned\dynam\case7.out

1.4000	CHNL = 2: [VOLT-SIP22]	x.....x	0.40000
1.4000	CHNL = 10: [VOLT-CC22]	+.....+	0.40000
1.4000	CHNL = 9: [VOLT-SW25]	o.....o	0.40000
1.4000	CHNL = 3: [VOLT-RH21]		0.40000
1.4000	CHNL = 8: [VOLT-CH22]		0.40000

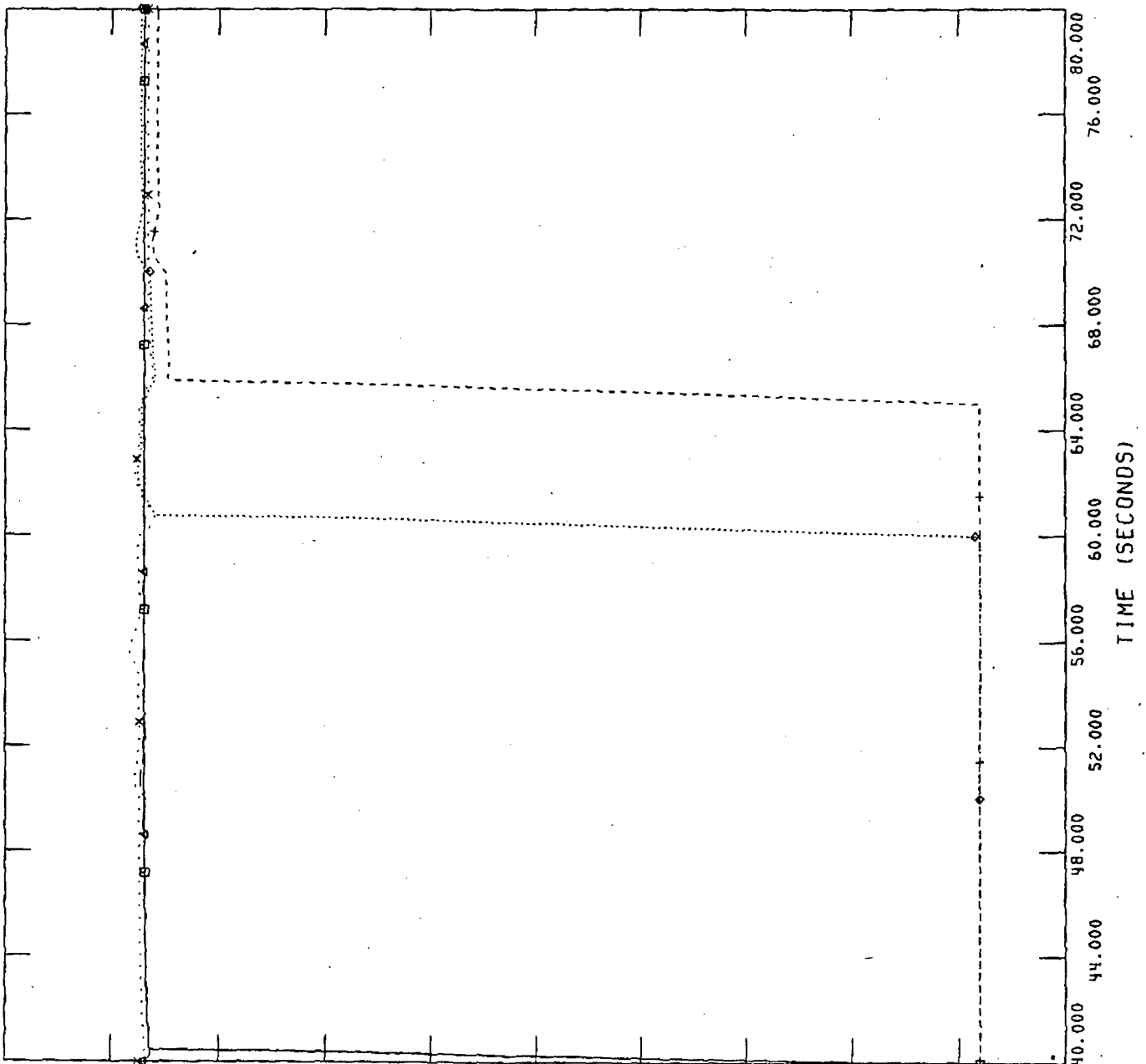


Thu. Jan 15 1998 15:4
MOTOR VOLTAGES

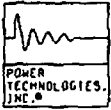


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 ON-SW25 ON-CC22 ON-SI22 OFF
FILE: c:\psse24w\coned\dynam\case7.out

0.15000	CHNL = 11: [SPDN-SIP22]	x.....x	-1.100
0.15000	CHNL = 19: [SPDN-CC22]	+-----+	-1.100
0.15000	CHNL = 18: [SPDN-SW25]	o.....o	-1.100
0.15000	CHNL = 12: [SPDN-RH21]	^-----^	-1.100
0.15000	CHNL = 17: [SPDN-CH22]	o-----o	-1.100

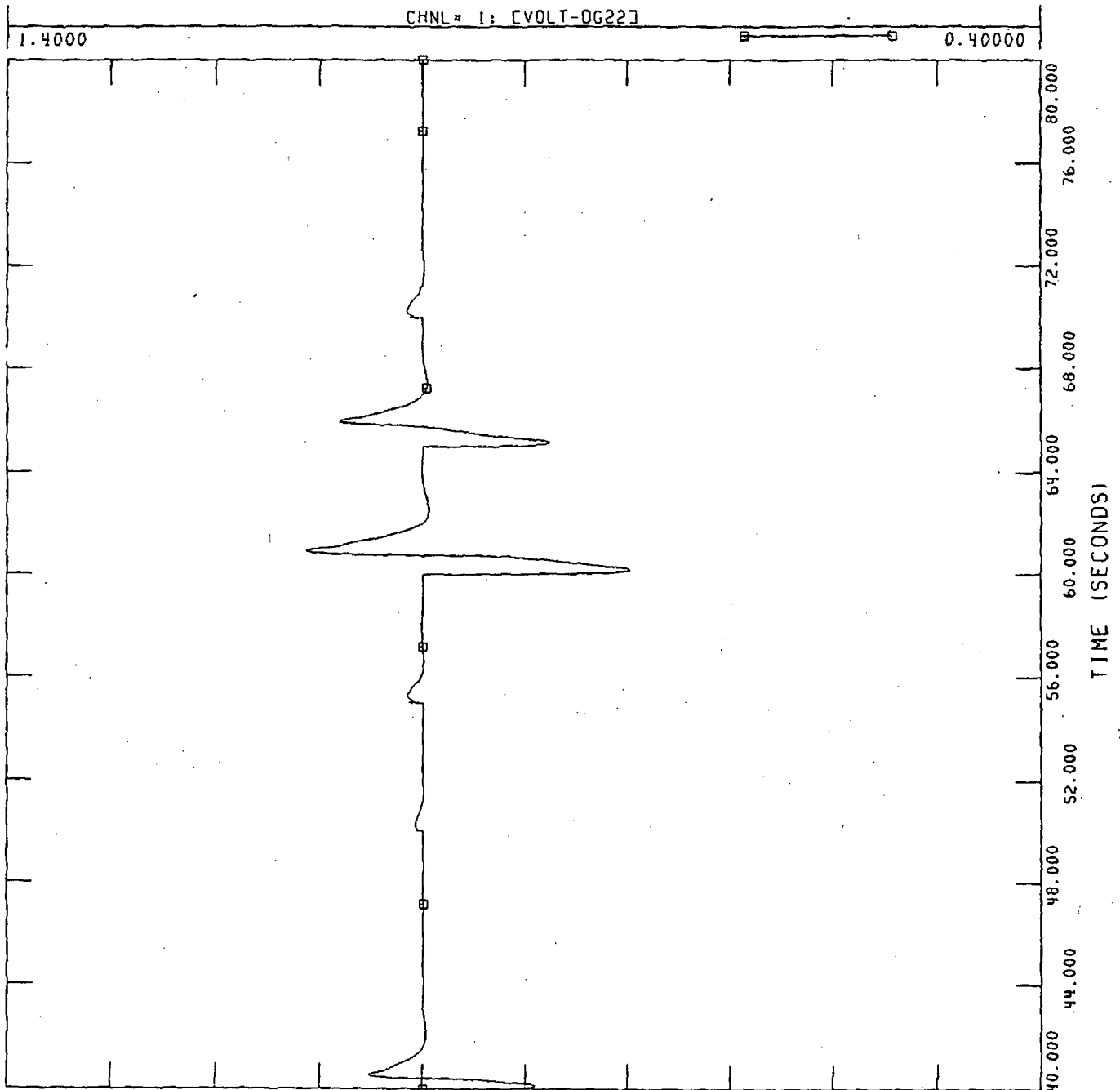


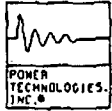
Thu, Jan 15 1998 15:41
MOTOR SPEEDS



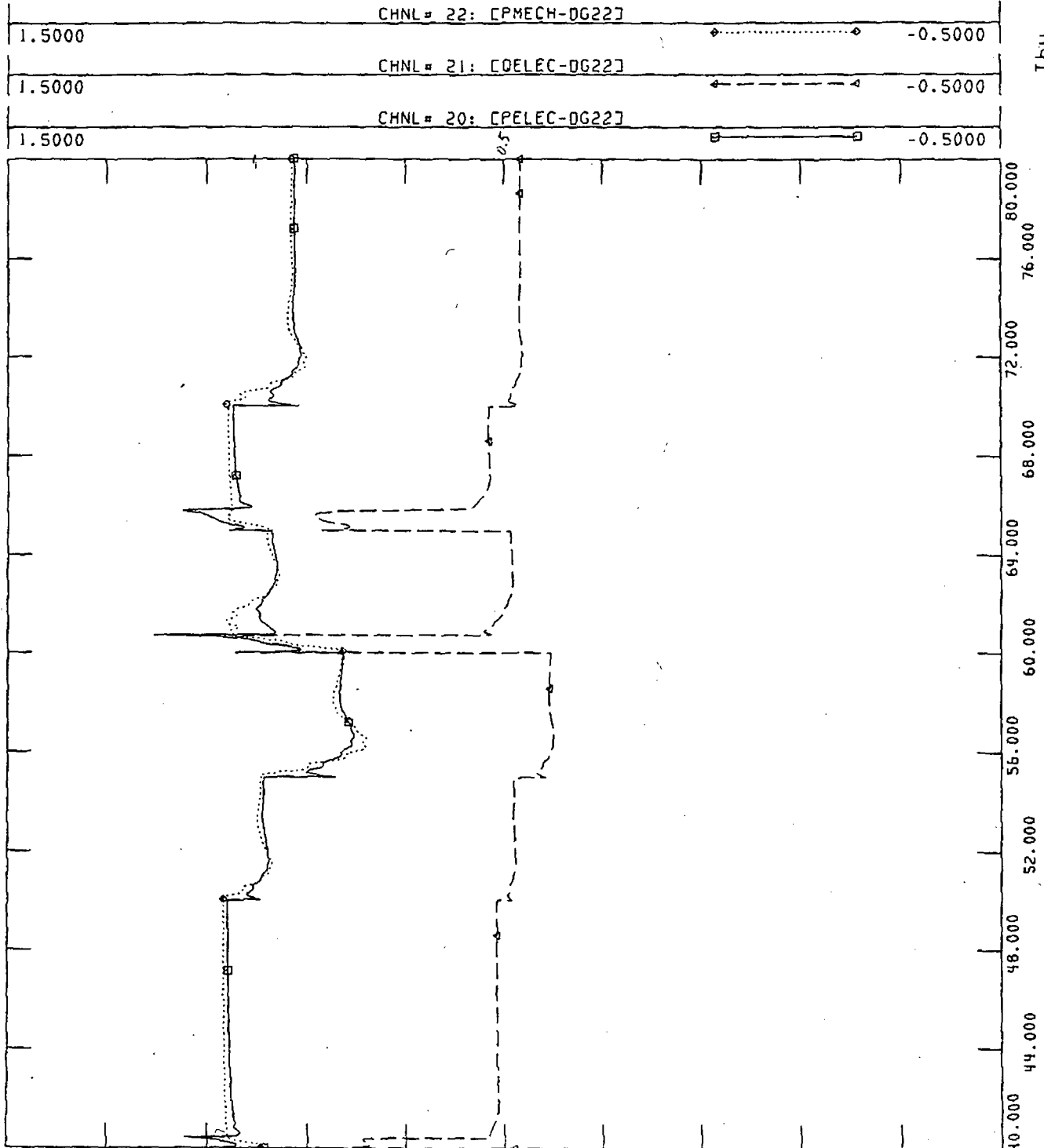
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-AH21 ON-SW25 ON-CC22 ON-SI22 OFF
FILE: c:\psse24w\coned\dynam\case7.out

Thu. Jan 15 1998 15:5
DIESEL VOLTS

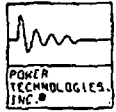




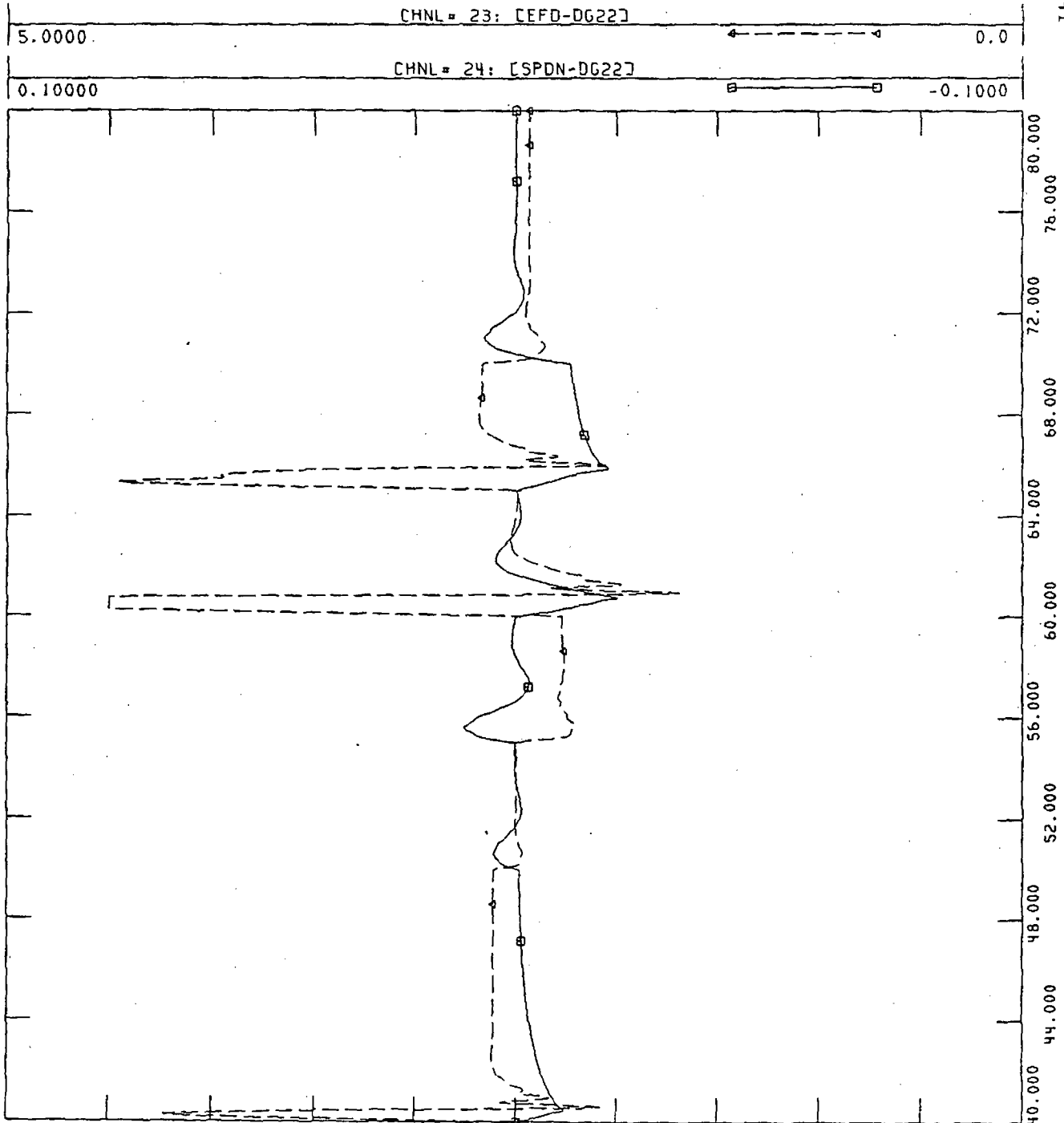
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 ON-SW25 ON-CC22 ON-SI22 OFF
FILE: c:\psse24w\coned\dynam\case7.out



Thu, Jan 15 1998 15:5
DIESEL POWER



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 ON-SW25 ON-CC22 ON-S122 OFF
FILE: c:\psse24w\coned\dynam\case7.out



Thu. Jan 15 1998 15:51
DIESEL SPEED & FLD VOLTS

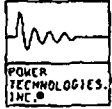
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR,SNPCS7.SNP
 LOFL
 CASE,DG22CON.SAV
 F2
 1.1
 STRT
 CASE7.OUT

RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 31 TO 0.206 MW	/10.0 SEC	MCC26C @206 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI22 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.349	/18.0 SEC	RH21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW22 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR24 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/35.0 SEC	CR23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.364	/40.0 SEC	AF21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.177	/4.0 MIN	CH22 ON
RUN TO 50 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.0	/22.0 MIN	CH22 OFF
RUN TO 55 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.0	/25.0 MIN	RH21 OFF
RUN TO 60 SECONDS PRINT 0 PLOT 3		
SET CON 95 TO 0.321	/27.0 MIN	SW25 ON
RUN TO 65 SECONDS PRINT 0 PLOT 3		
SET CON 134 TO 0.217	/27.0 MIN	CC22 ON
RUN TO 70 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.0	/30.0 MIN	SI22 OFF
RUN TO 80 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

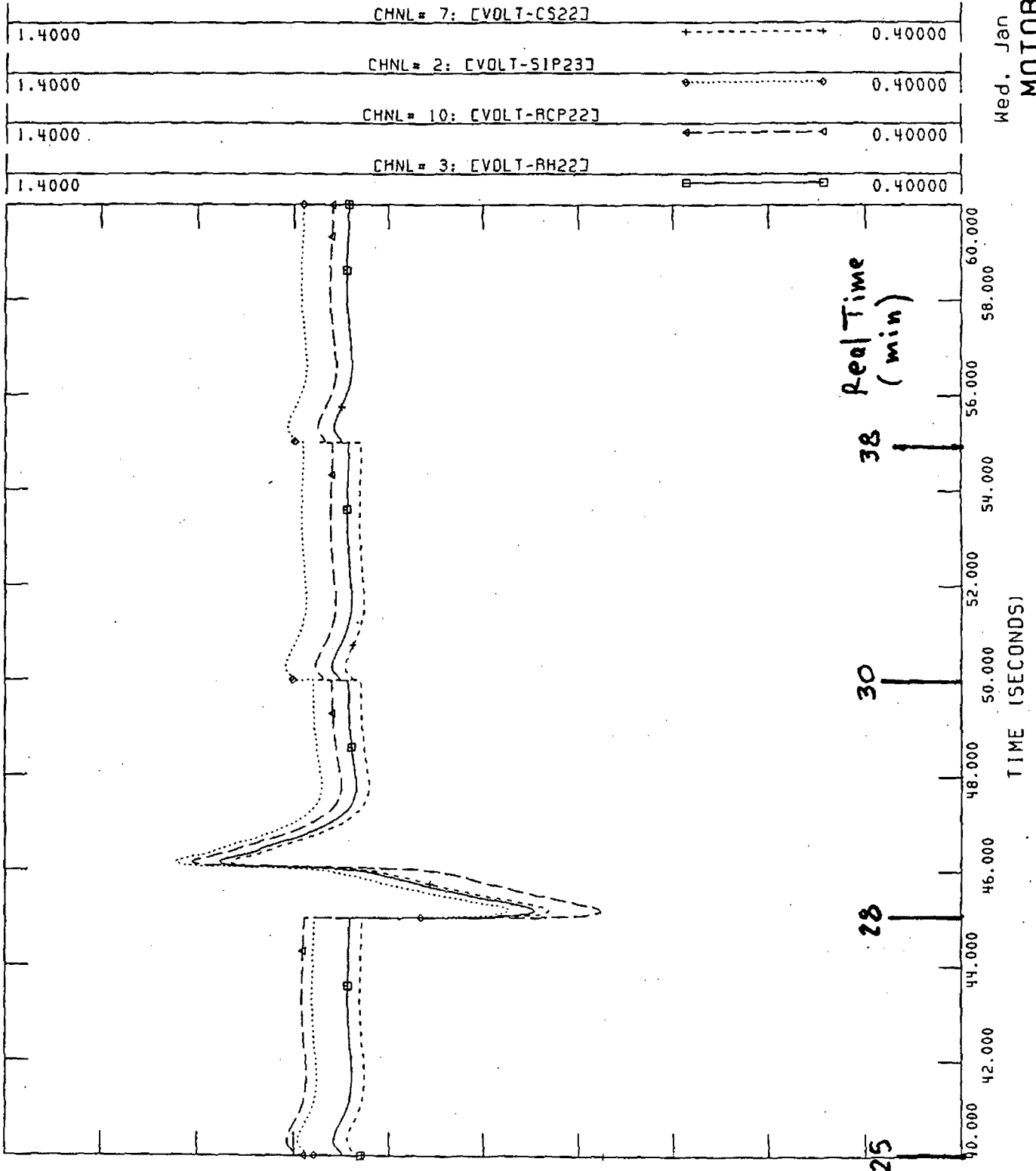
ATTACHMENT VIII

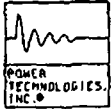
DIESEL GENERATOR 23 - RECIRCULATION (FAILURE OF DG21)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: RH22 OFF-RCP22 ON-S123 OFF-CS22 OFF
FILE: c:\psse24w\coned\dynam\case8.out

Wed. Jan 14 1998 10:4
MOTOR VOLTAGES

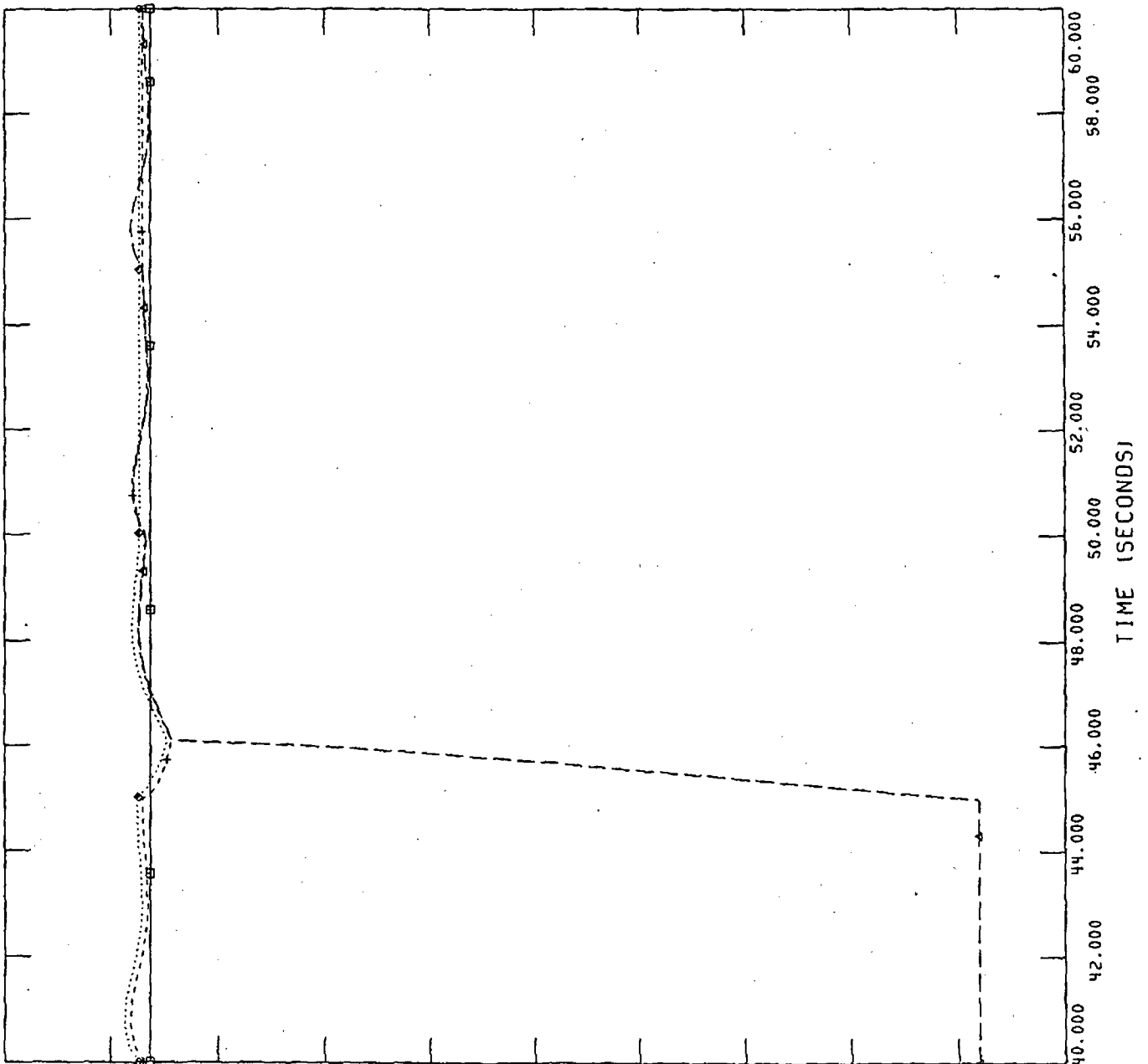


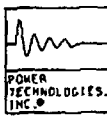


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: RH22 OFF-RCP22 ON-SI23 OFF-CS22 OFF
FILE: c:\psse24w\coned\dynam\case8.out

Wed. Jan 14 1998 10:4
MOTOR SPEED:

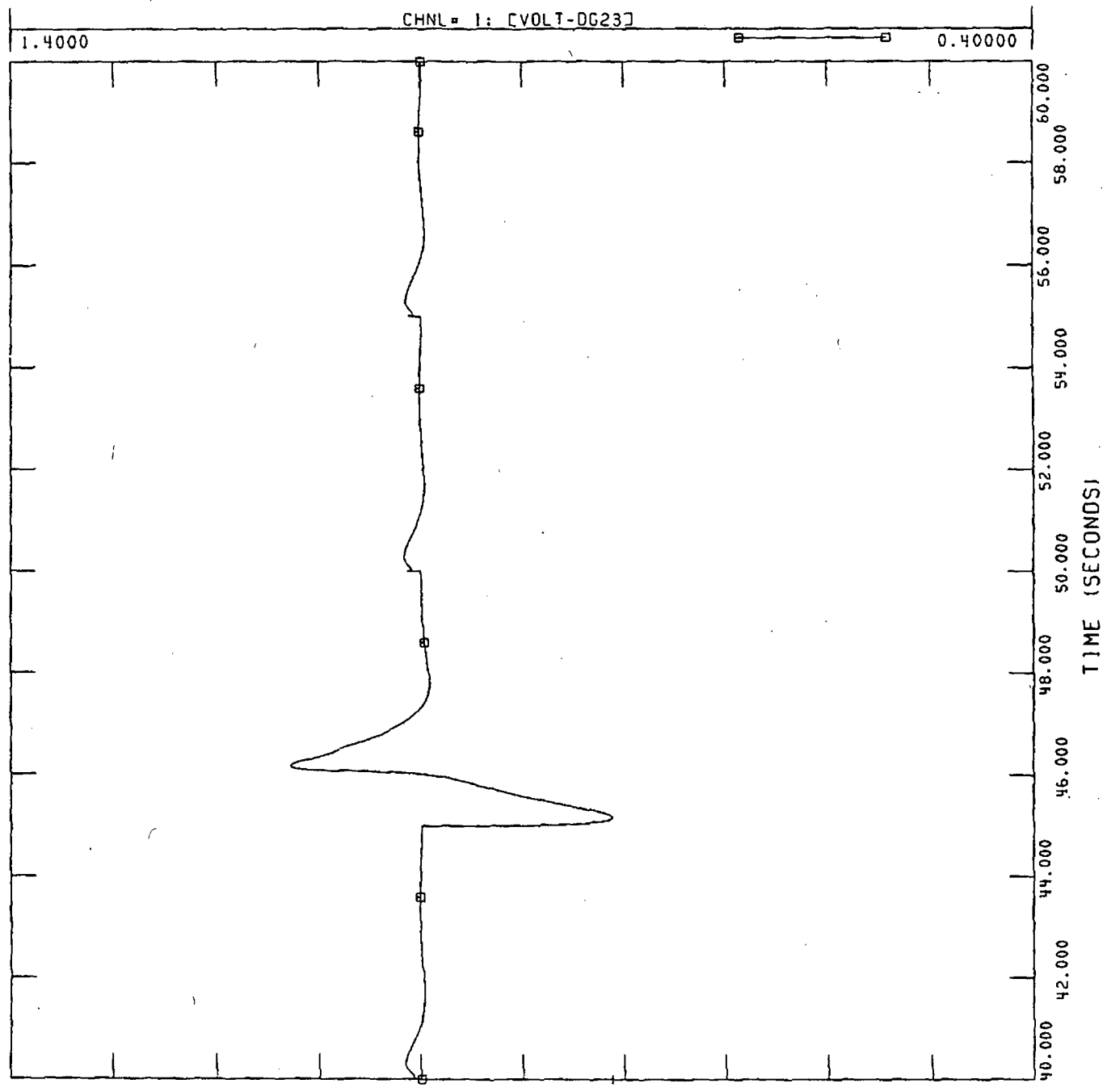
0.15000	CHNL = 16: [SPDN-CS22]	+ - - - - +	-1.100
0.15000	CHNL = 11: [SPDN-SIP23]	o o	-1.100
0.15000	CHNL = 20: [SPDN-RCP22]	o - - - - o	-1.100
0.15000	CHNL = 12: [SPDN-RH22]	o - - - - o	-1.100

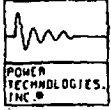




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: RH22 OFF-RCP22 ON-SI23 OFF-CS22 OFF
FILE: c:\psse24w\coned\dynam\case8.out

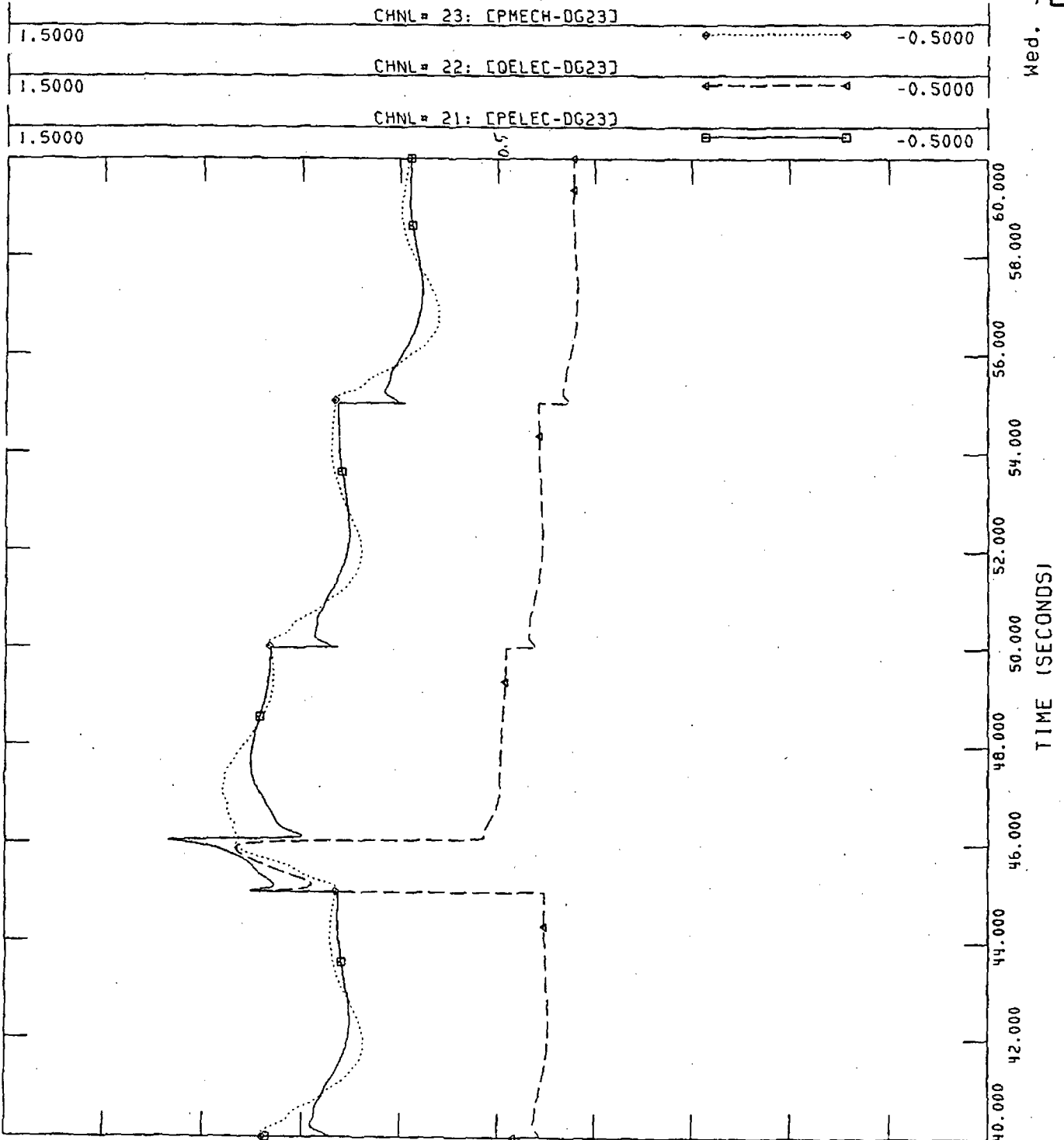
Wed. Jan 14 1998 10:5
DIESEL VOLT:

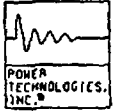




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: RH22 OFF-RCP22 ON-S123 OFF-CS22 OFF
FILE: c:\psse24w\coned\dynam\case8.out

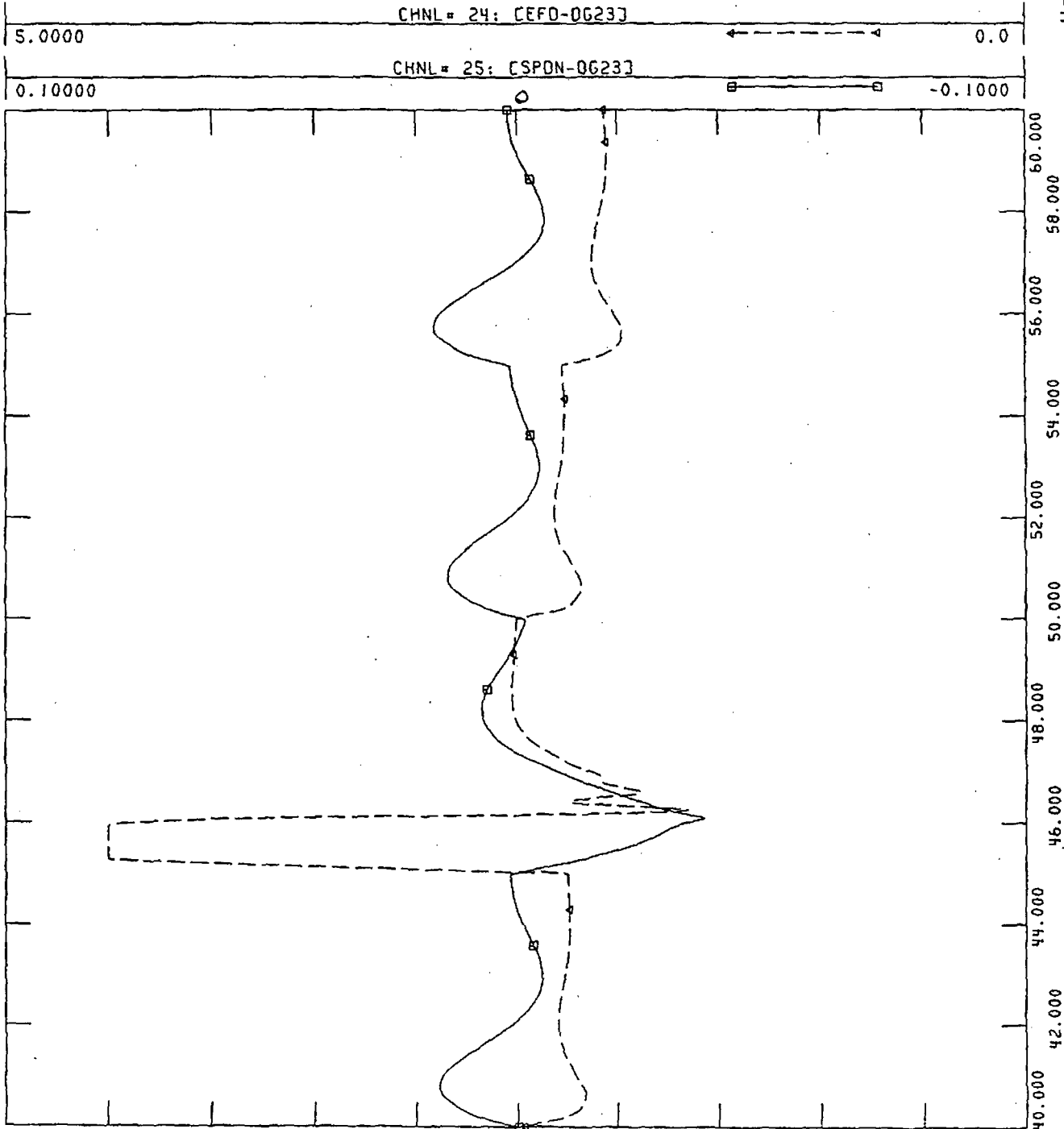
Wed. Jan 14 1998 10:5
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: RH22 OFF-RCP22 ON-SI23 OFF-CS22 OFF
FILE: c:\PSSE24W\coned\dynam\case8.out

Wed. Jan 28 1998 14:4
DIESEL SPEED & FLD VOLTS



KV3CS8.IDV

MENU, OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR, SNPCS8.SNP
LOFL
CASE, DG23CON.SAV
FACT
R. N
STRT
CASE8.OUT

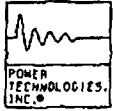
RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 61 TO 0.140 MW
RUN TO 3 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.347
RUN TO 8 SECONDS PRINT 0 PLOT 3
SET CON 108 TO 0.347
RUN TO 15 SECONDS PRINT 0 PLOT 3
SET CON 82 TO 0.321
RUN TO 20 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.319
RUN TO 25 SECONDS PRINT 0 PLOT 3
SET CON 95 TO 0.364
RUN TO 30 SECONDS PRINT 0 PLOT 3
SET CON 121 TO 0.321
RUN TO 40 SECONDS PRINT 0 PLOT 3
SET CON 108 TO 0.0
RUN TO 45 SECONDS PRINT 0 PLOT 3
SET CON 147 TO 0.319
RUN TO 50 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.0
RUN TO 55 SECONDS PRINT 0 PLOT 3
SET CON 121 TO 0.0
RUN TO 60 SECONDS PRINT 0 PLOT 3
PASS
FIN
END

/10.0 SEC MCC26B @140 KW
/13.0 SEC SI23 ON
/18.0 SEC RH22 ON
/25.0 SEC SW23 ON
/30.0 SEC CR25 ON
/35.0 SEC AF23 ON
/40.0 SEC CS22 ON
/20.0 MIN RH22 OFF
/28.0 MIN RCP22 ON
/30.0 MIN SI23 OFF
/38.0 MIN CS22 OFF

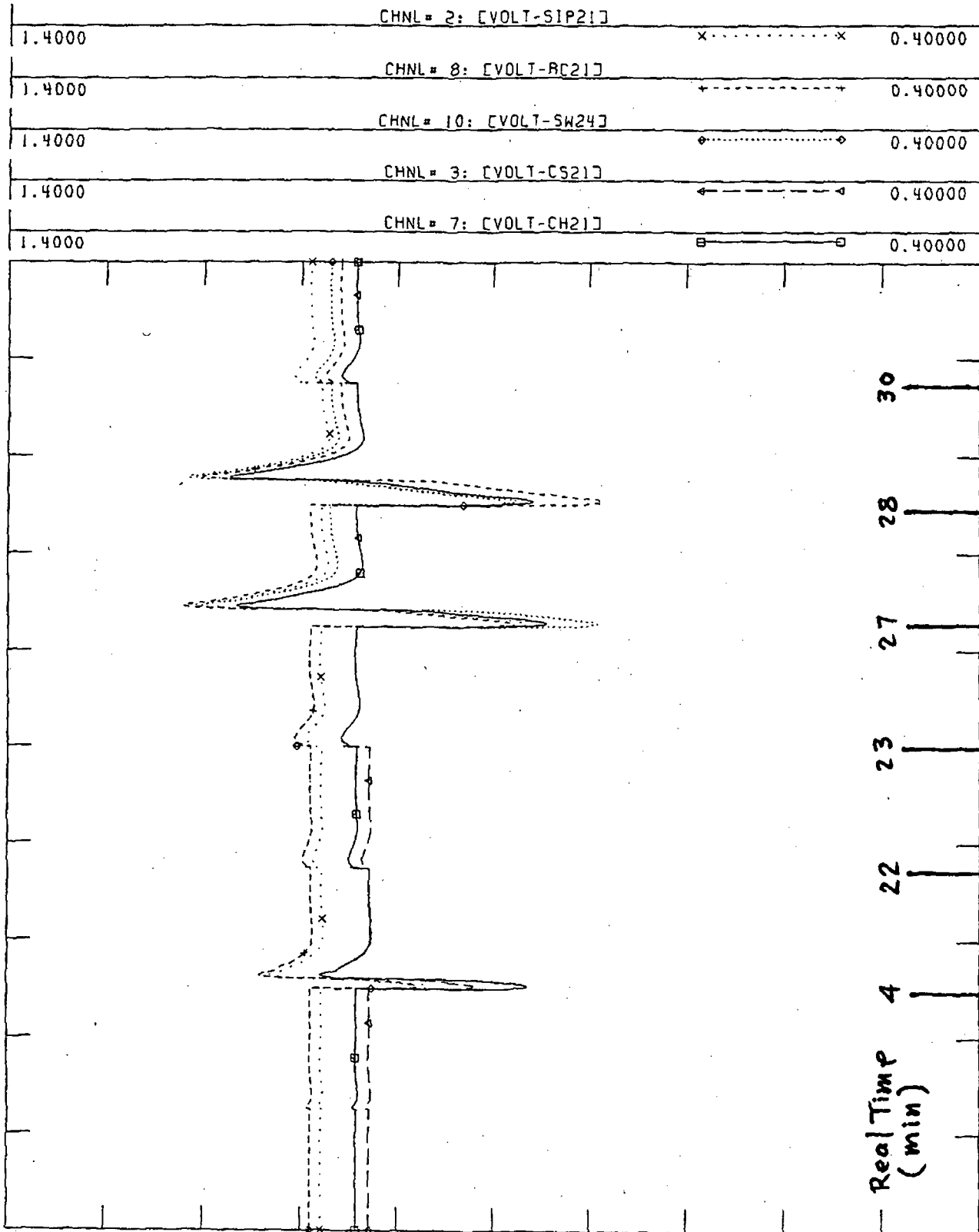
ATTACHMENT IX

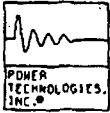
DIESEL-GENERATOR 21 - RECIRCULATION (FAILURE OF DG22)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-CSP21 OFF-SW24 ON-RCP21 ON-S121 0
FILE: c:\psse24w\coned\dynam\case9.out

Wed. Jan 14 1998 11:12
MOTOR VOLTAGES

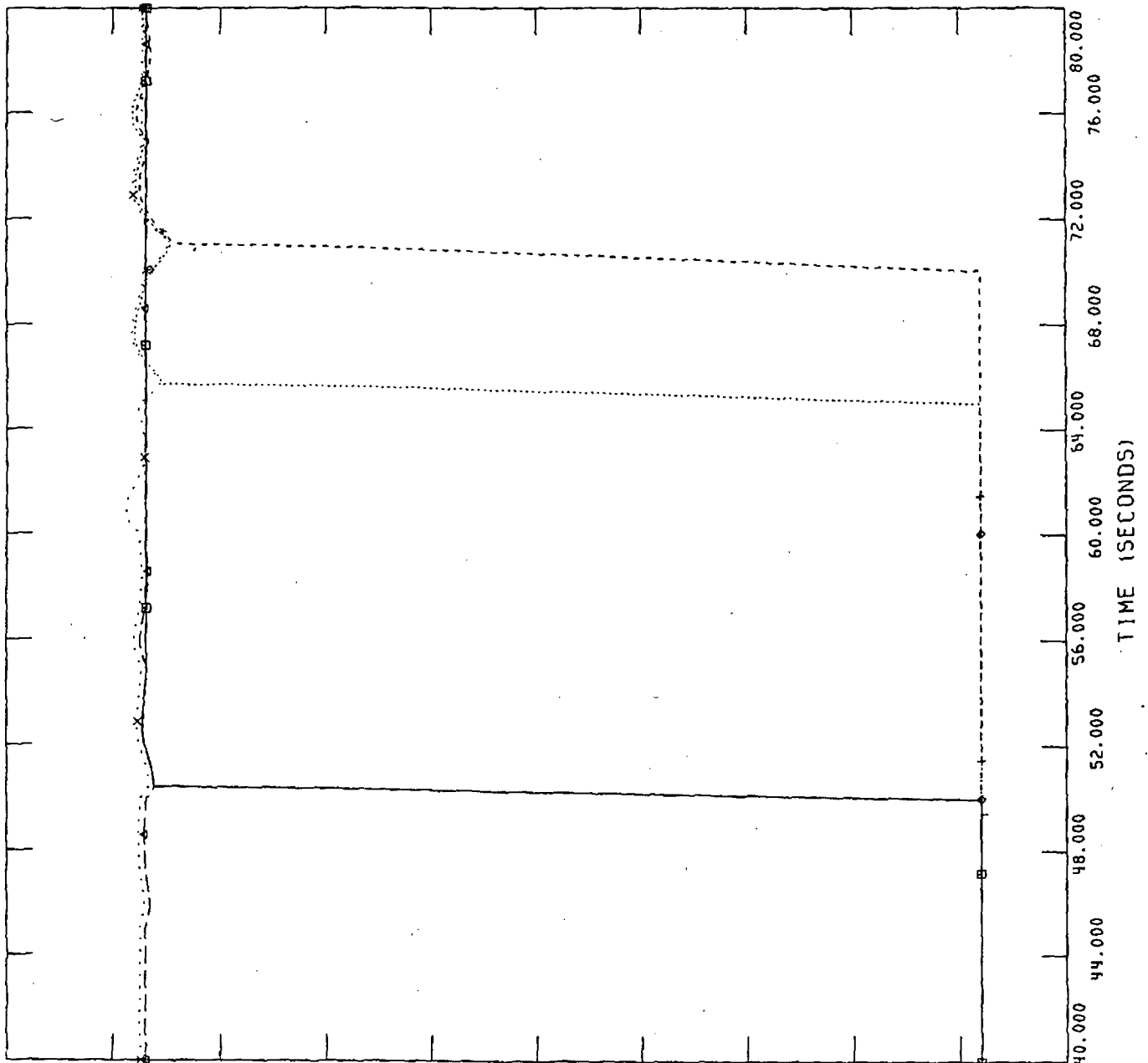


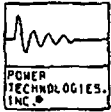


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-CSP21 OFF-SW24 ON-RCP21 ON-S121 0
FILE: c:\psse24w\coned\dynam\case9.out

Wed. Jan 14 1998 11:11
MOTOR SPEEDS

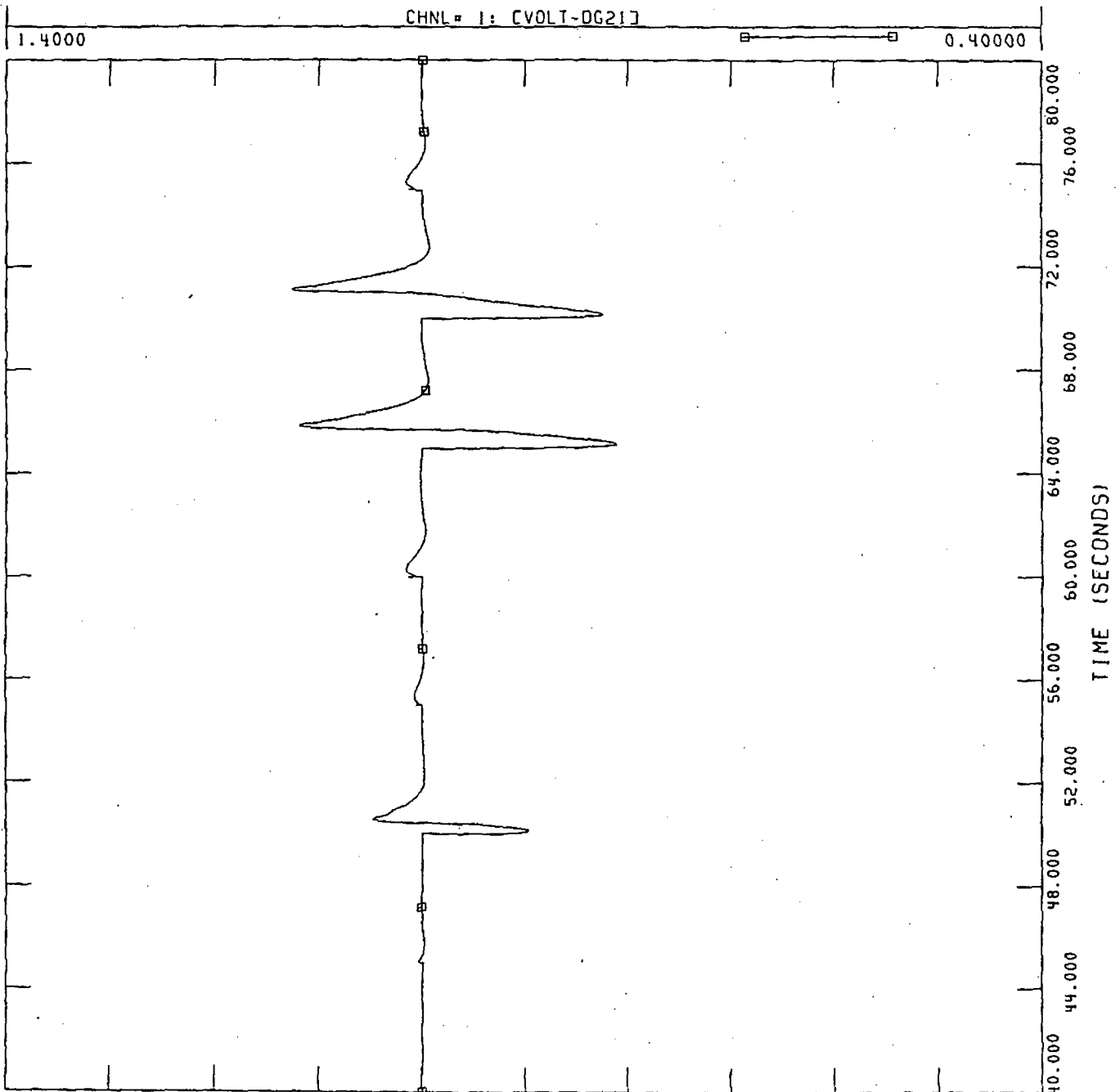
0.15000	CHNL = 11: [SPDN-S1P21]	x-----x	-1.100
0.15000	CHNL = 17: [SPDN-RC21]	+-----+	-1.100
0.15000	CHNL = 19: [SPDN-SW24]	o-----o	-1.100
0.15000	CHNL = 12: [SPDN-CS21]	^-----^	-1.100
0.15000	CHNL = 16: [SPDN-CH21]	□-----□	-1.100

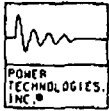




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-CSP21 OFF-SW24 ON-RCP21 ON-SI21 0
FILE: c:\psse24w\coned\dynam\case9.out

Wed. Jan 14 1998 11:11
DIESEL VOLTS





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)

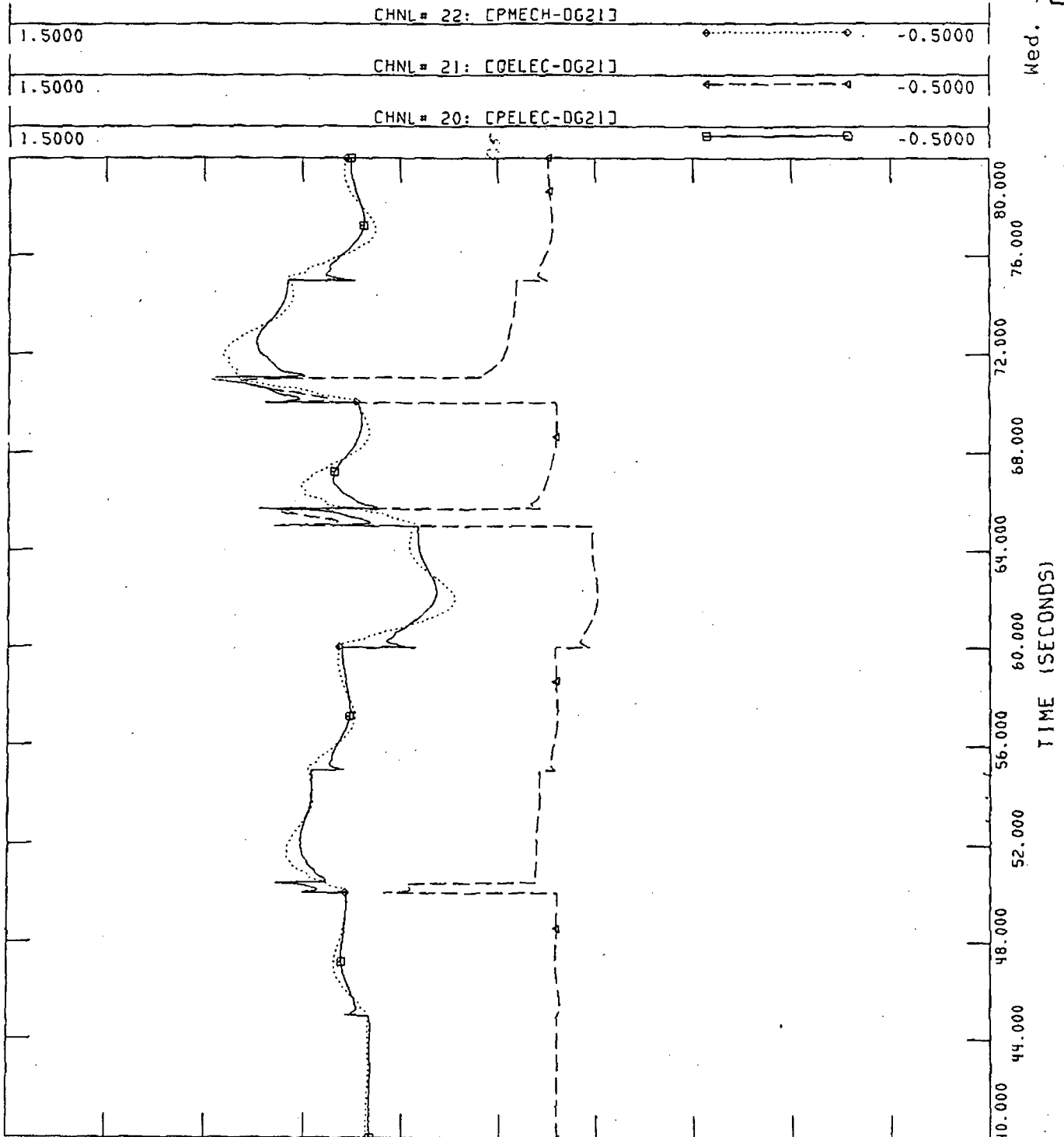
DIESEL GENERATOR #21 BUS 5A

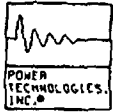
LOADING SEQUENCE FROM 1 TO 30 MINUTES

SEQUENCE: CH21 ON-CH21 OFF-CSP21 OFF-SW24 ON-RCP21 ON-S121 0

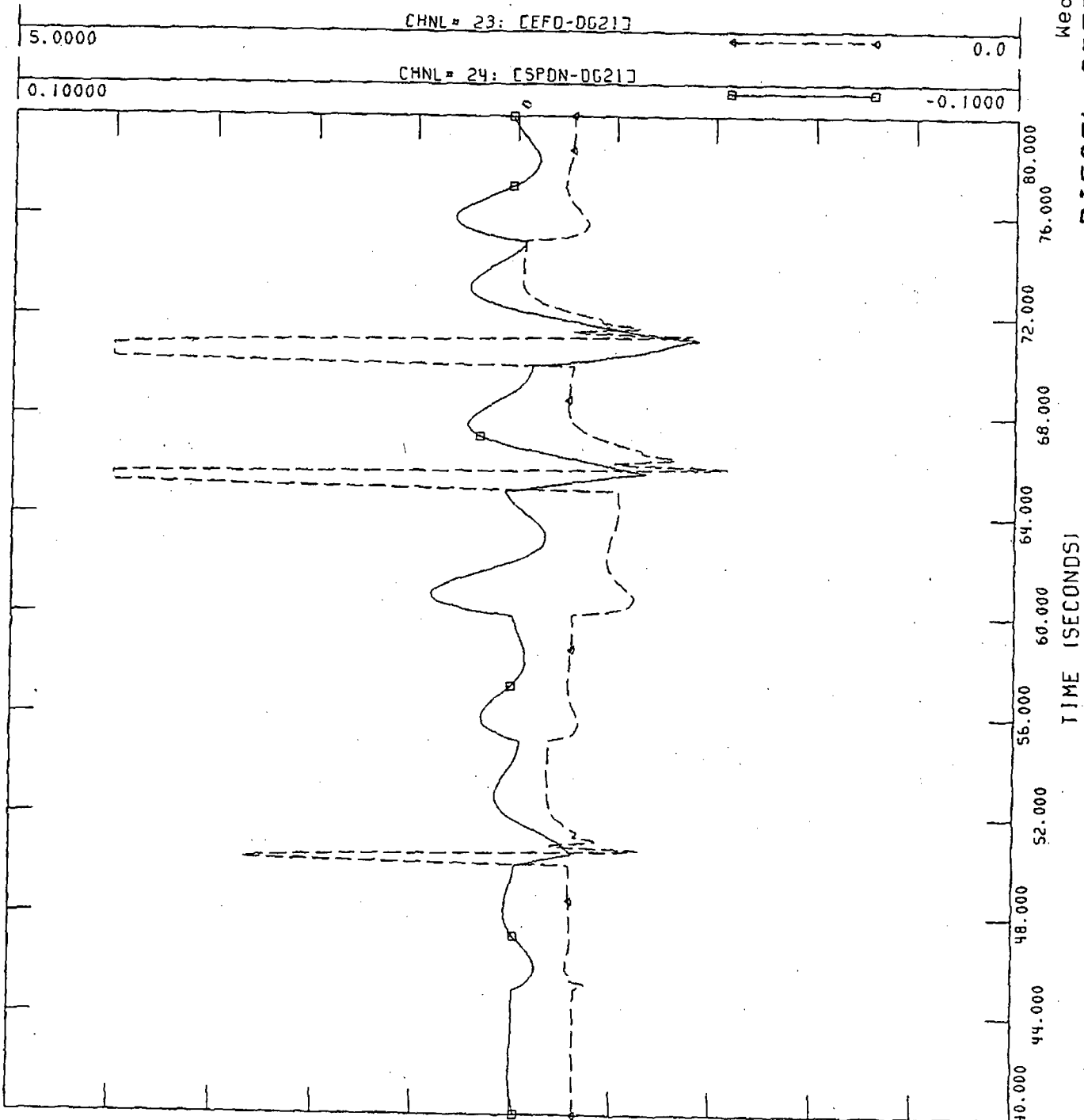
FILE: c:\psse24w\coned\dynam\case9.out

Wed. Jan 14 1998 11:1
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (ILF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 30 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-CSP21 OFF-SW24 ON-RCP21 ON-S121 0
FILE: c:\psse24w\coned\dynam\case9.out



Wed. Jan 14 1998 11:18
DIESEL SPEED & FLD VOLTS

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR,SNPCS9.SNP
 LOFL
 CASE,DG21CON.SAV
 FACT
 STRT
 CASE9.OUT

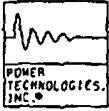
RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 54 TO 0.143 MW
 RUN TO 3 SECONDS PRINT 0 PLOT 3
 SET CON 43 TO 0.347
 RUN TO 15 SECONDS PRINT 0 PLOT 3
 SET CON 108 TO 0.321
 RUN TO 20 SECONDS PRINT 0 PLOT 3
 SET CON 69 TO 0.319
 RUN TO 25 SECONDS PRINT 0 PLOT 3
 SET CON 82 TO 0.319
 RUN TO 30 SECONDS PRINT 0 PLOT 3
 SET CON 56 TO 0.349
 RUN TO 45 SECONDS PRINT 0 PLOT 3
 CHANGE MWP LOAD BUS 49 TO 0.109 MW
 RUN TO 50 SECONDS PRINT 0 PLOT 3
 SET CON 147 TO 0.177
 RUN TO 55 SECONDS PRINT 0 PLOT 3
 SET CON 147 TO 0.0
 RUN TO 60 SECONDS PRINT 0 PLOT 3
 SET CON 56 TO 0.0
 RUN TO 65 SECONDS PRINT 0 PLOT 3
 SET CON 95 TO 0.321
 RUN TO 70 SECONDS PRINT 0 PLOT 3
 SET CON 134 TO 0.319
 RUN TO 75 SECONDS PRINT 0 PLOT 3
 SET CON 43 TO 0.0
 RUN TO 80 SECONDS PRINT 0 PLOT 3
 PASS
 FIN
 END

/10.0 SEC MCC26A @143 KW
 /13.0 SEC SI21 ON
 /25.0 SEC SW21 ON
 /30.0 SEC CR21 ON
 /35.0 SEC CR22 ON
 /40.0 SEC CS21 ON
 /MCC29A @ 109 KW
 /4.0 MIN CH21 ON
 /22.0 MIN CH21 OFF
 /23.0 MIN CSP21 OFF
 /27.0 MIN SW24 ON
 /28.0 MIN RCP21 ON
 /30.0 MIN SI21 OFF

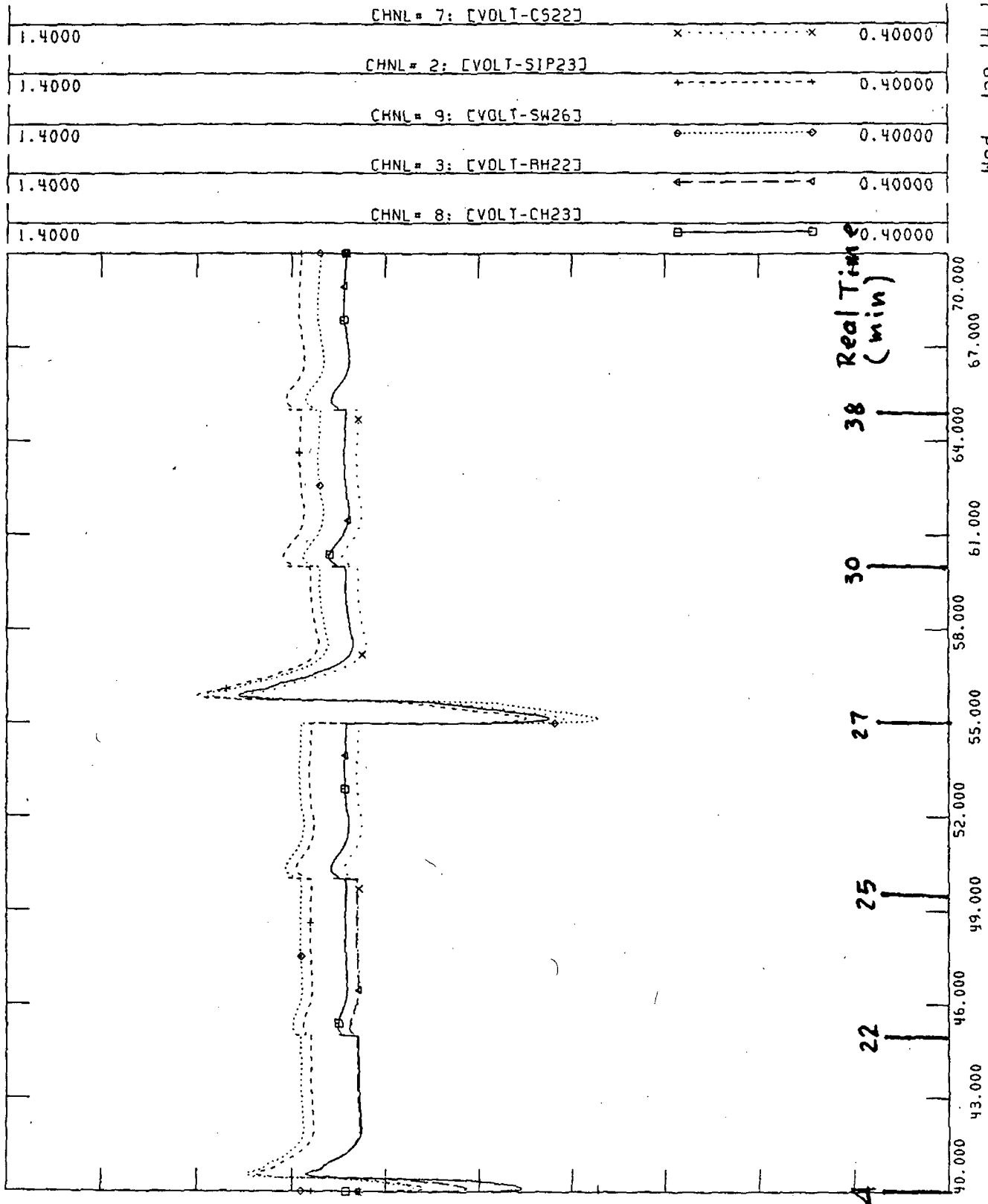
ATTACHMENT X

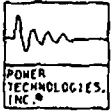
DIESEL-GENERATOR 23 - RECIRCULATION (FAILURE OF DG 22)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SW26 ON-SI23 OFF-CS22 OF
FILE: c:\psse24w\coned\dynam\case10.out

Wed. Jan 14 1998 13:4
MOTOR VOLTAGES

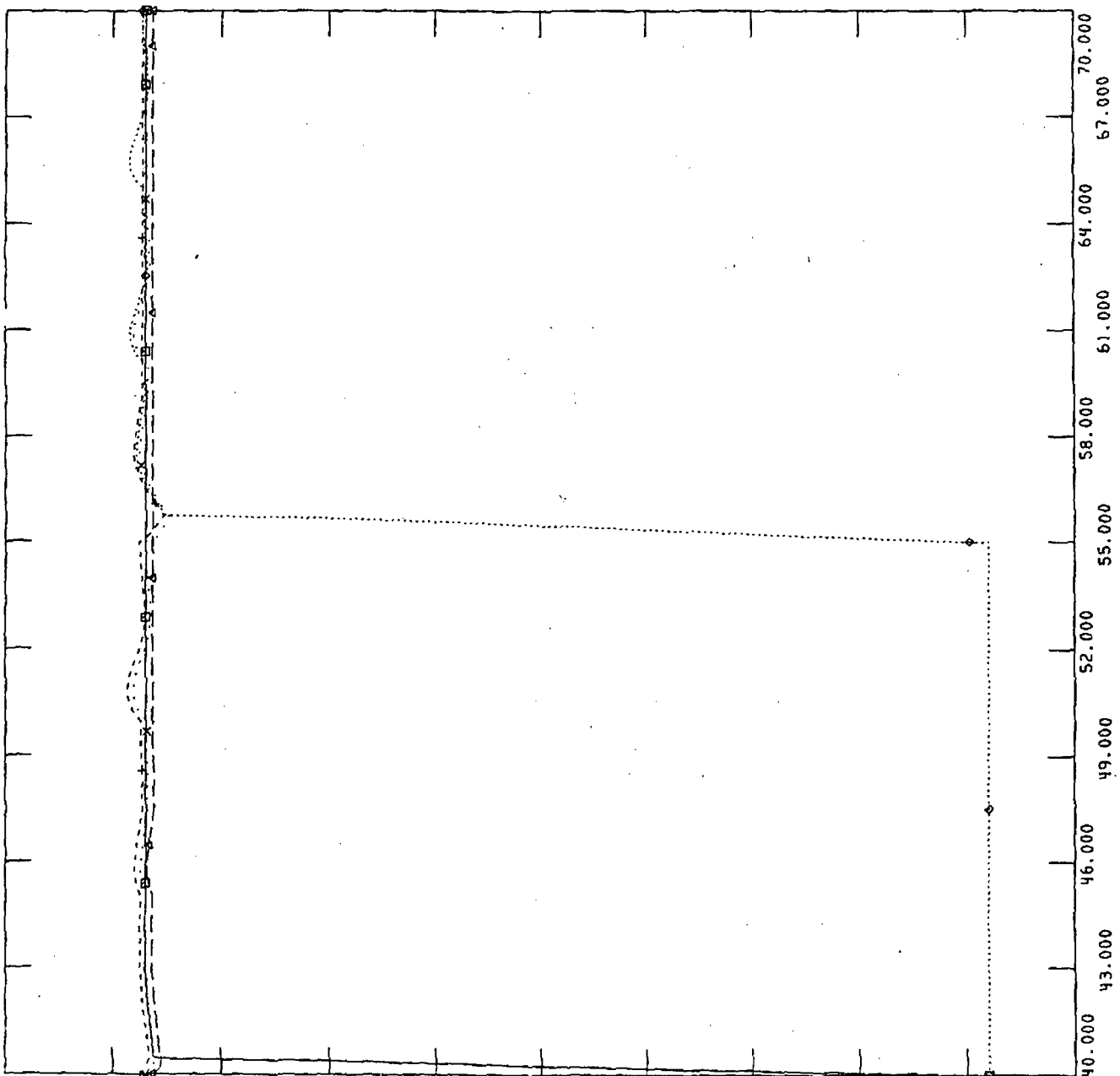


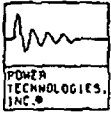


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SW26 ON-SI23 OFF-CS22 OF
FILE: c:\psse24w\coned\dynam\case10.out

Wed. Jan 14 1998 13:33
MOTOR SPEEDS

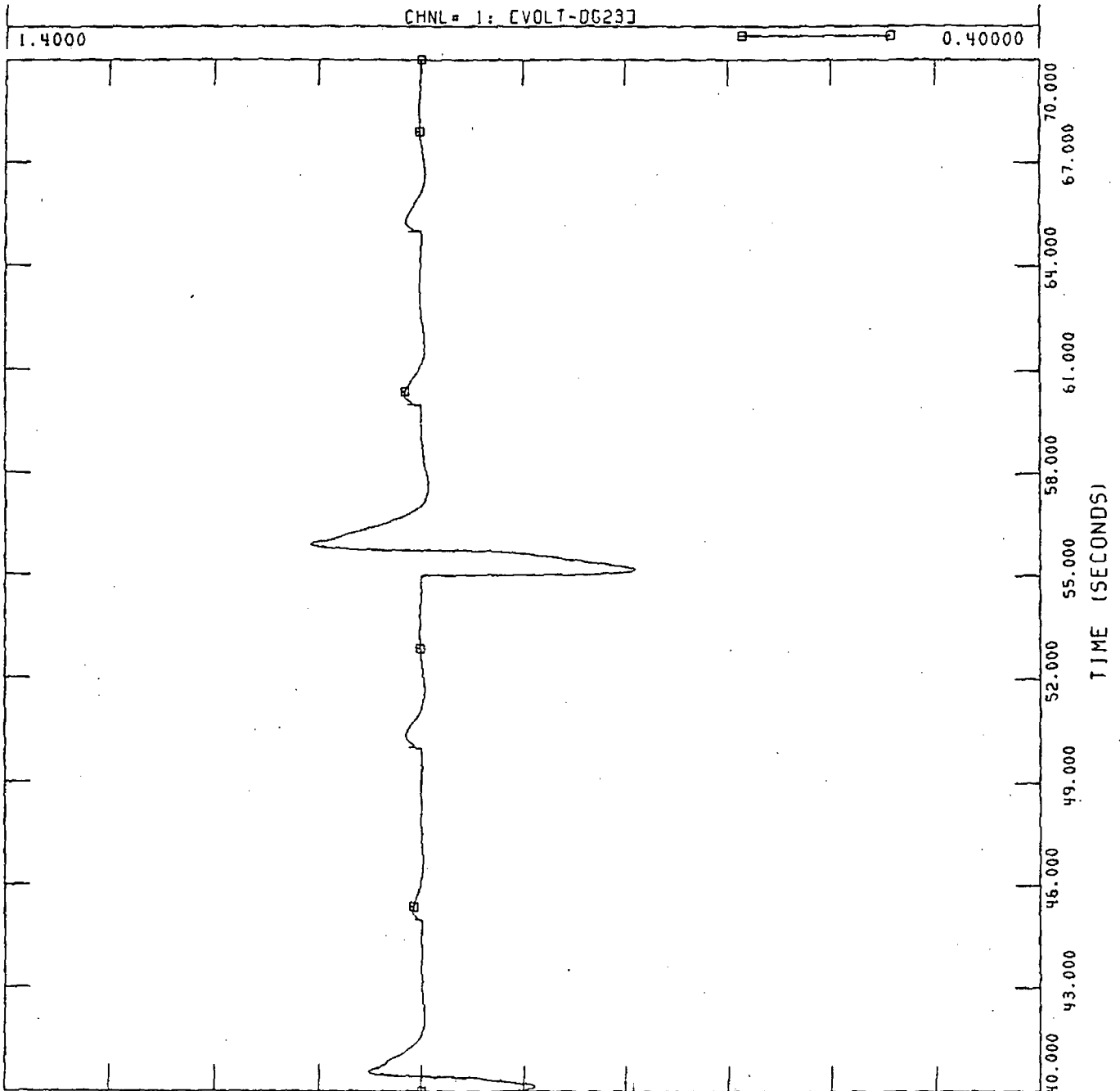
0.15000	CHNL # 16: [SPDN-CS22]	x-----x	-1.100
0.15000	CHNL # 11: [SPDN-SIP23]	+-----+	-1.100
0.15000	CHNL # 19: [SPDN-SW26]	o-----o	-1.100
0.15000	CHNL # 12: [SPDN-RH22]	o-----o	-1.100
0.15000	CHNL # 18: [SPDN-CH23]	o-----o	-1.100

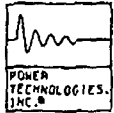




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SW26 ON-S123 OFF-CS22 OF
FILE: c:\psse24w\coned\dynam\case10.out

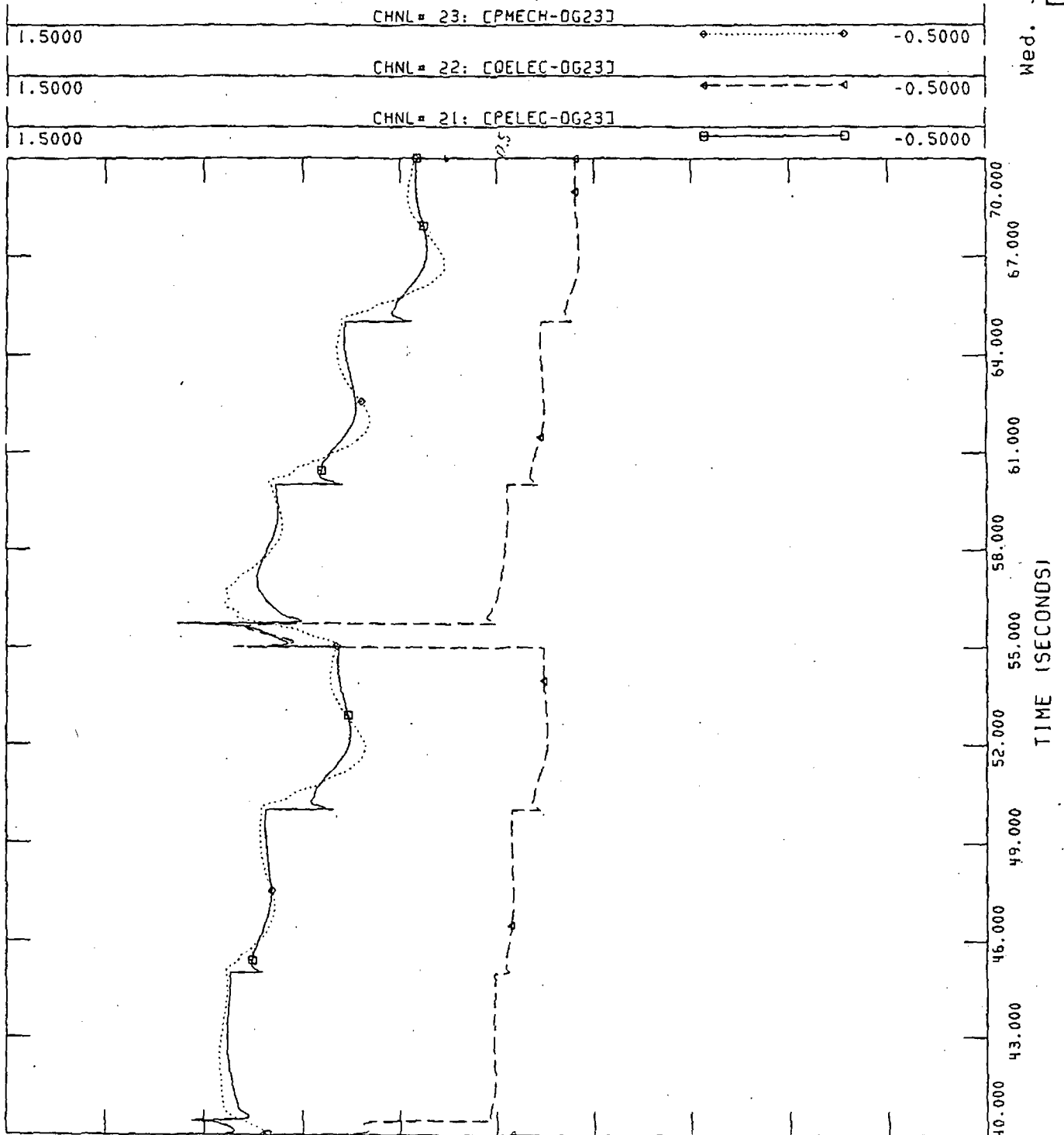
Wed. Jan 14 1998 13:43
DIESEL VOLTS





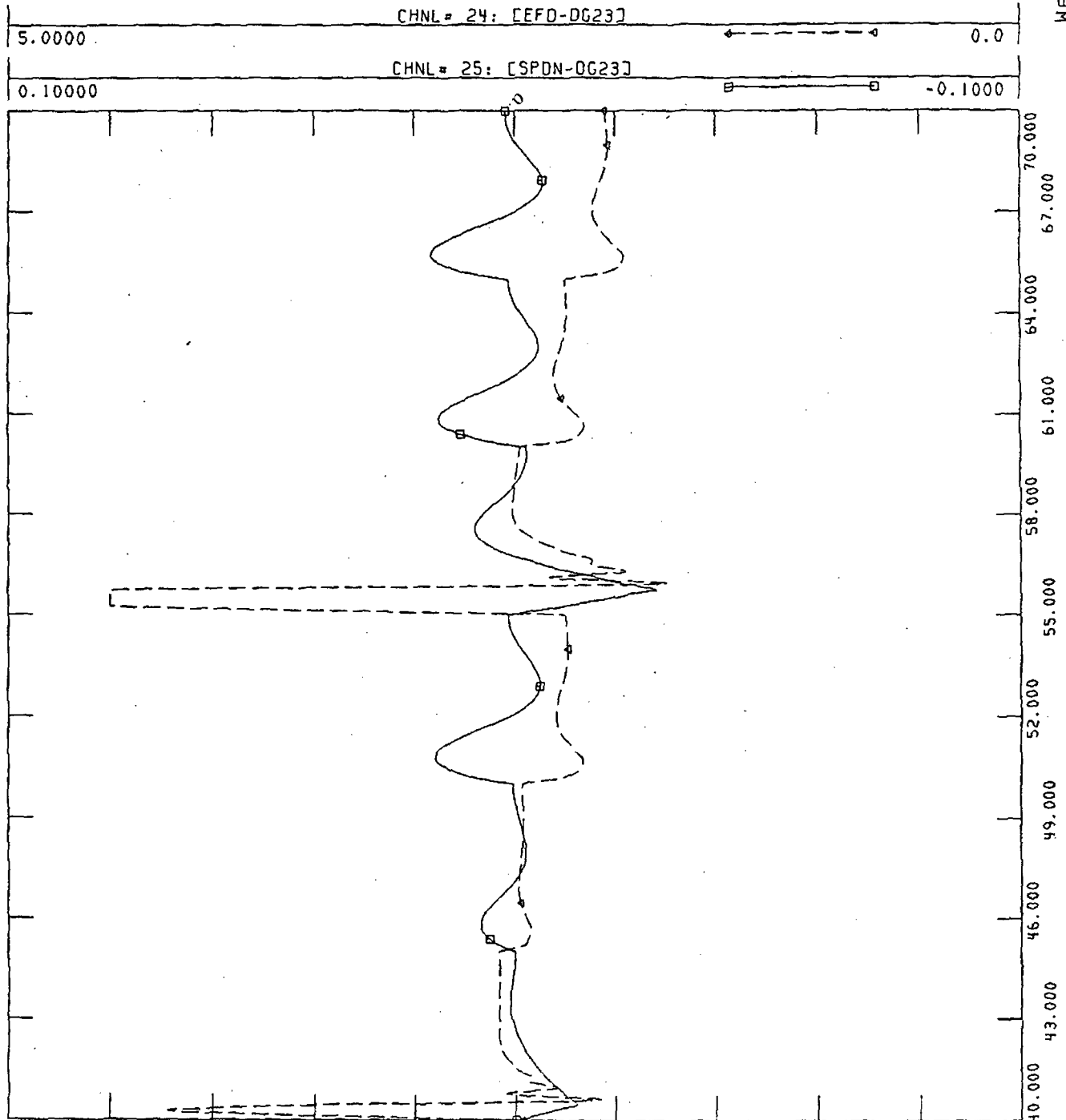
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-AH22 OFF-SW26 ON-SI23 OFF-CS22 OF
FILE: c:\psse24w\coned\dynam\case10.out

Wed. Jan 14 1998 13:4
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF23)
DIESEL GENERATOR #23 BUS 6A
LOADING SEQUENCE FROM 1 TO 38 MINUTES
SEQUENCE: CH23 ON-CH23 OFF-RH22 OFF-SW26 ON-SI23 OFF-CS22 OF
FILE: c:\psse24w\coned\dynam\case10.out



Wed. Jan 14 1998 13:44
DIESEL SPEED & FLD VOLTS

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR,SNPCS10.SNP
 LOFL
 CASE,DG23CON.SAV
 F7-T
 R1-N
 STRT
 CASE10.OUT

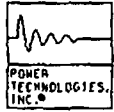
RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 61 TO 0.140 MW
 RUN TO 3 SECONDS PRINT 0 PLOT 3
 SET CON 43 TO 0.347
 RUN TO 8 SECONDS PRINT 0 PLOT 3
 SET CON 108 TO 0.347
 RUN TO 15 SECONDS PRINT 0 PLOT 3
 SET CON 82 TO 0.321
 RUN TO 20 SECONDS PRINT 0 PLOT 3
 SET CON 56 TO 0.319
 RUN TO 25 SECONDS PRINT 0 PLOT 3
 SET CON 95 TO 0.364
 RUN TO 30 SECONDS PRINT 0 PLOT 3
 SET CON 121 TO 0.321
 RUN TO 40 SECONDS PRINT 0 PLOT 3
 SET CON 160 TO 0.177
 RUN TO 45 SECONDS PRINT 0 PLOT 3
 SET CON 160 TO 0.0
 RUN TO 50 SECONDS PRINT 0 PLOT 3
 SET CON 108 TO 0.0
 RUN TO 55 SECONDS PRINT 0 PLOT 3
 SET CON 69 TO 0.321
 RUN TO 60 SECONDS PRINT 0 PLOT 3
 SET CON 43 TO 0.0
 RUN TO 65 SECONDS PRINT 0 PLOT 3
 SET CON 121 TO 0.0
 RUN TO 70 SECONDS PRINT 0 PLOT 3
 PASS
 FIN
 END

/10.0 SEC MCC26B @140 KW
 /13.0 SEC SI23 ON
 /18.0 SEC RH22 ON
 /25.0 SEC SW23 ON
 /30.0 SEC CR25 ON
 /35.0 SEC AF23 ON
 /40.0 SEC CS22 ON
 /4.0 MIN CH23 ON
 /22.0 MIN CH23 OFF
 /25.0 MIN RH22 OFF
 /27.0 MIN SW26 ON
 /30.0 MIN SI23 OFF
 /38.0 MIN CS22 OFF

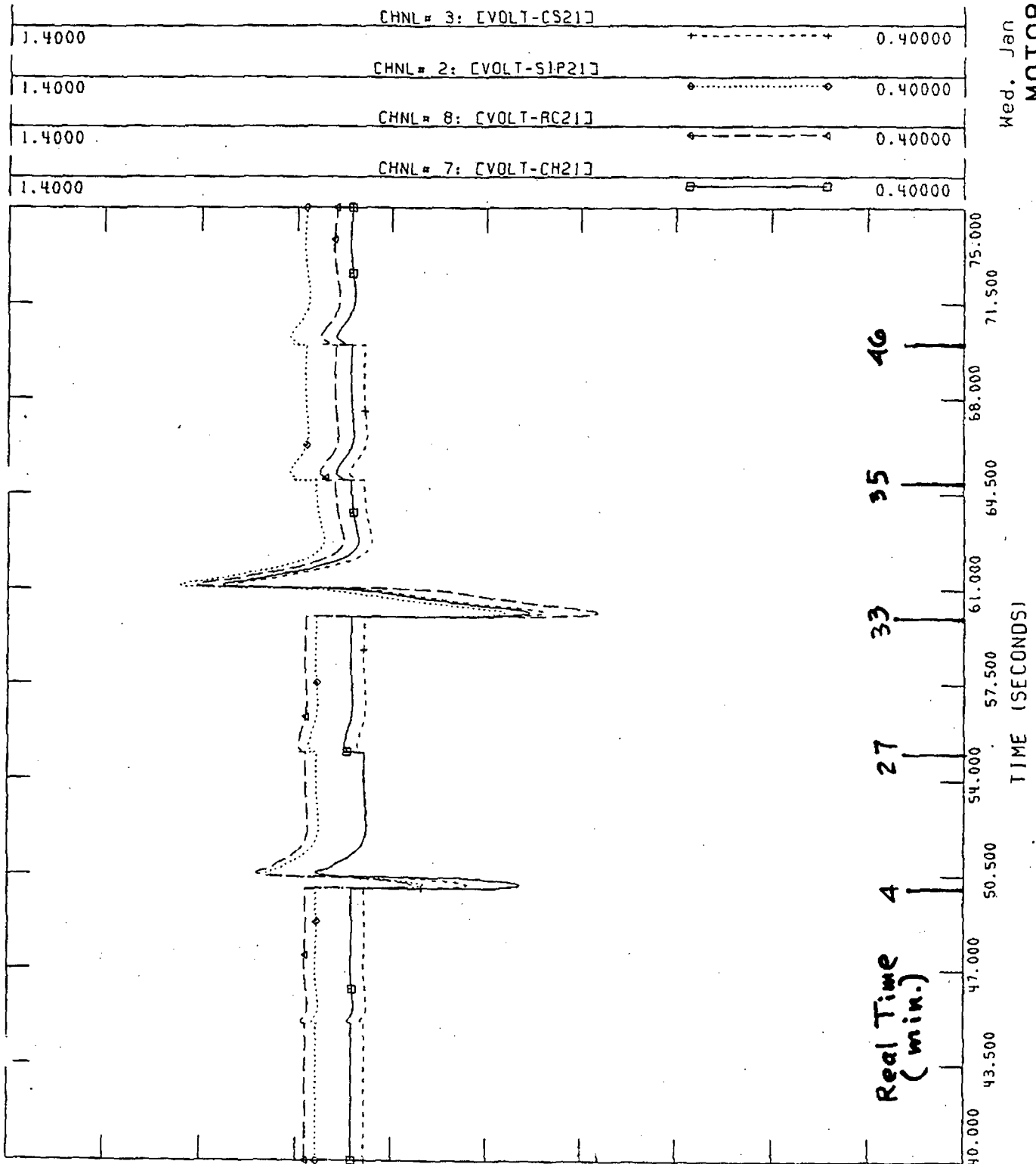
ATTACHMENT X1

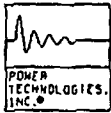
DIESEL GENERATOR 21 - RECIRCULATION (FAILURE OF DG 23)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 46 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-RSP21 ON-SI21 OFF-CSP21 OFF
FILE: c:\psse24w\coned\dynam\case11.out

Wed. Jan 14 1998 15:2
MOTOR VOLTAGES

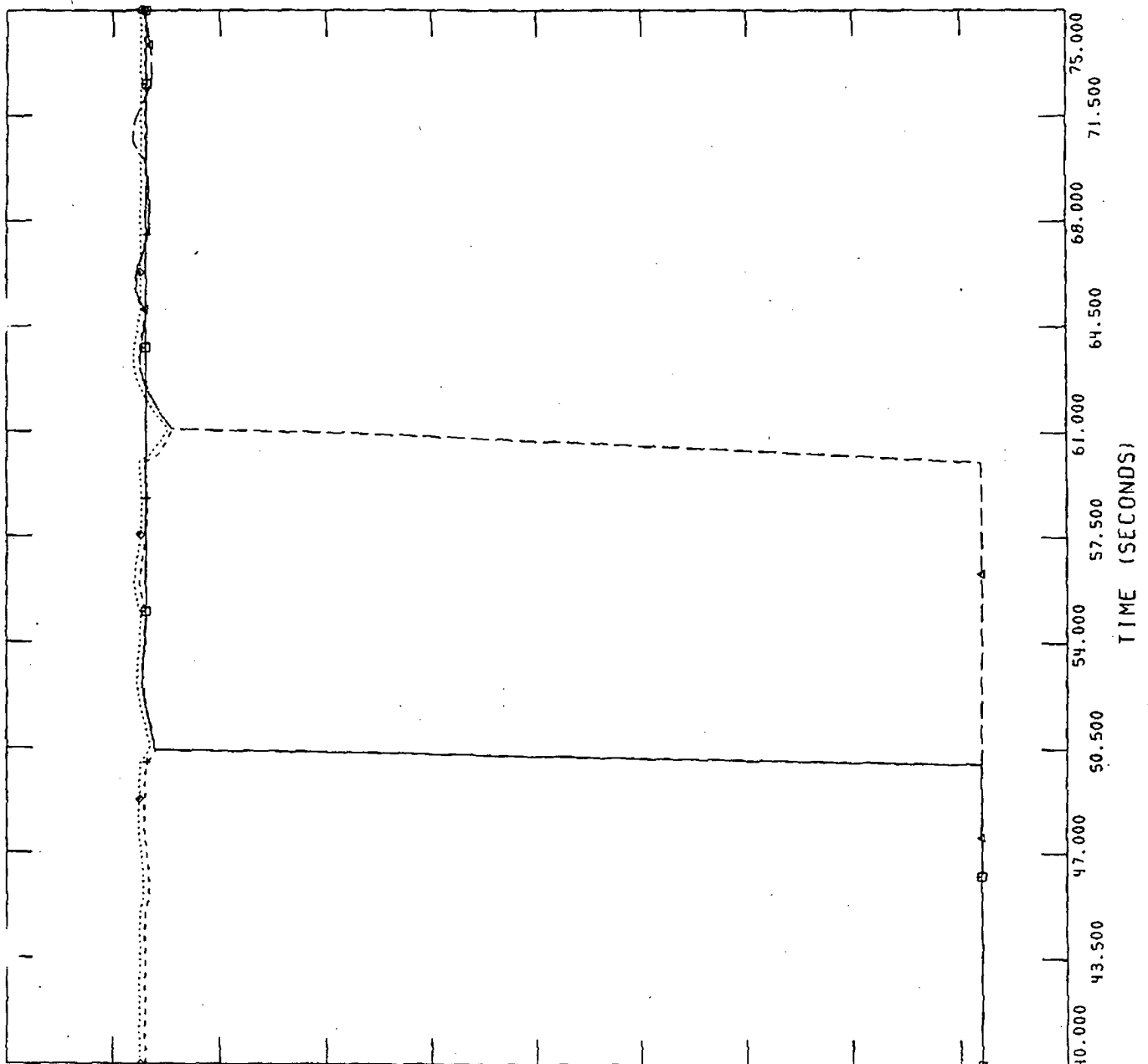


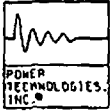


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 46 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-RSP21 ON-S121 OFF-CSP21 OFF
FILE: c:\psse24w\coned\dynam\case11.out

Wed. Jan 14 1998 15:18
MOTOR SPEEDS

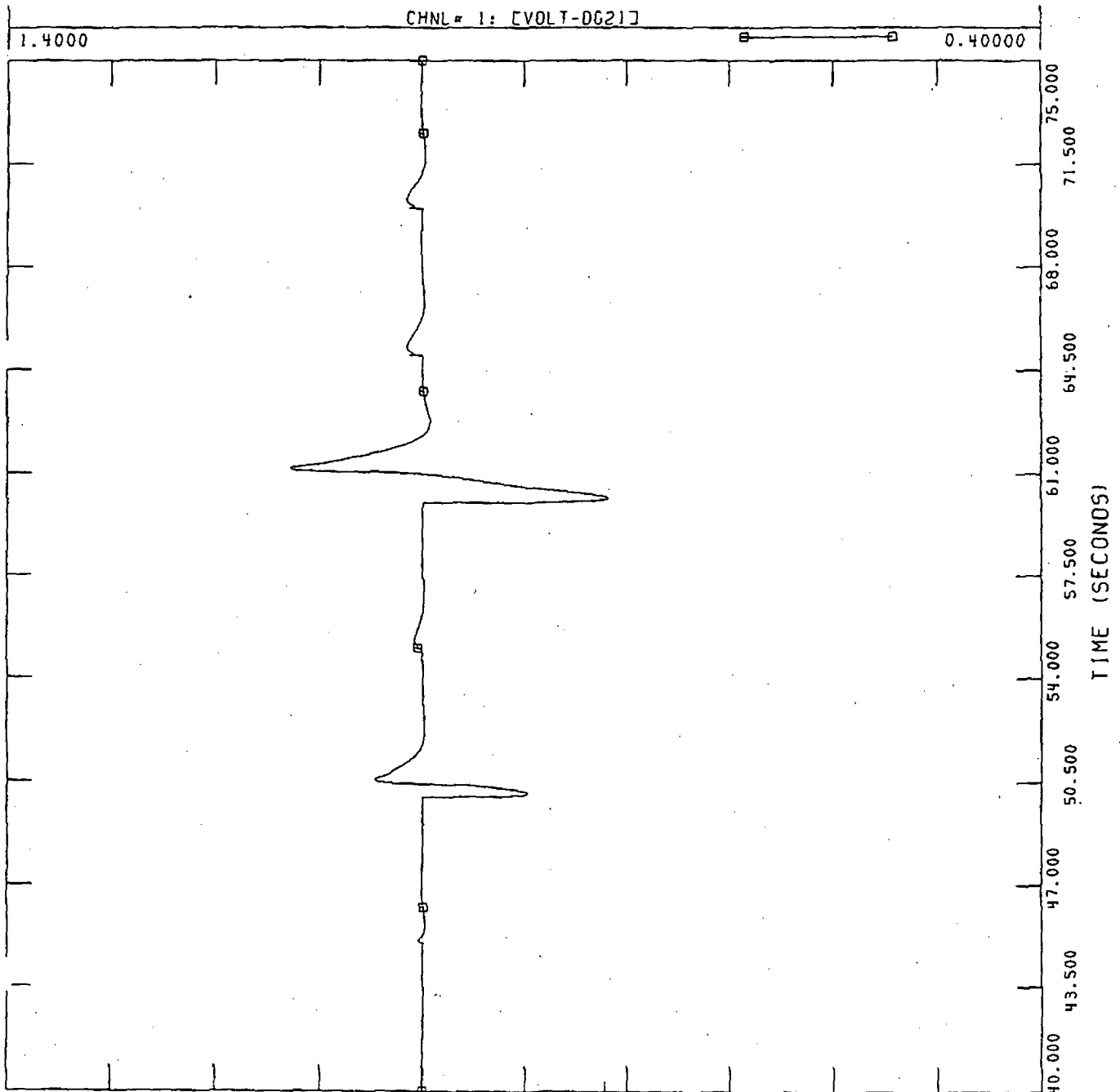
0.15000	CHNL# 12: [SPDN-CS21]	-1.100
0.15000	CHNL# 11: [SPDN-S1P21]	-1.100
0.15000	CHNL# 17: [SPDN-RC21]	-1.100
0.15000	CHNL# 16: [SPDN-CH21]	-1.100

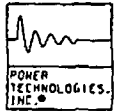




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 46 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-RSP21 ON-SI21 OFF-CSP21 OFF
FILE: c:\psse24w\coned\dynam\case11.out

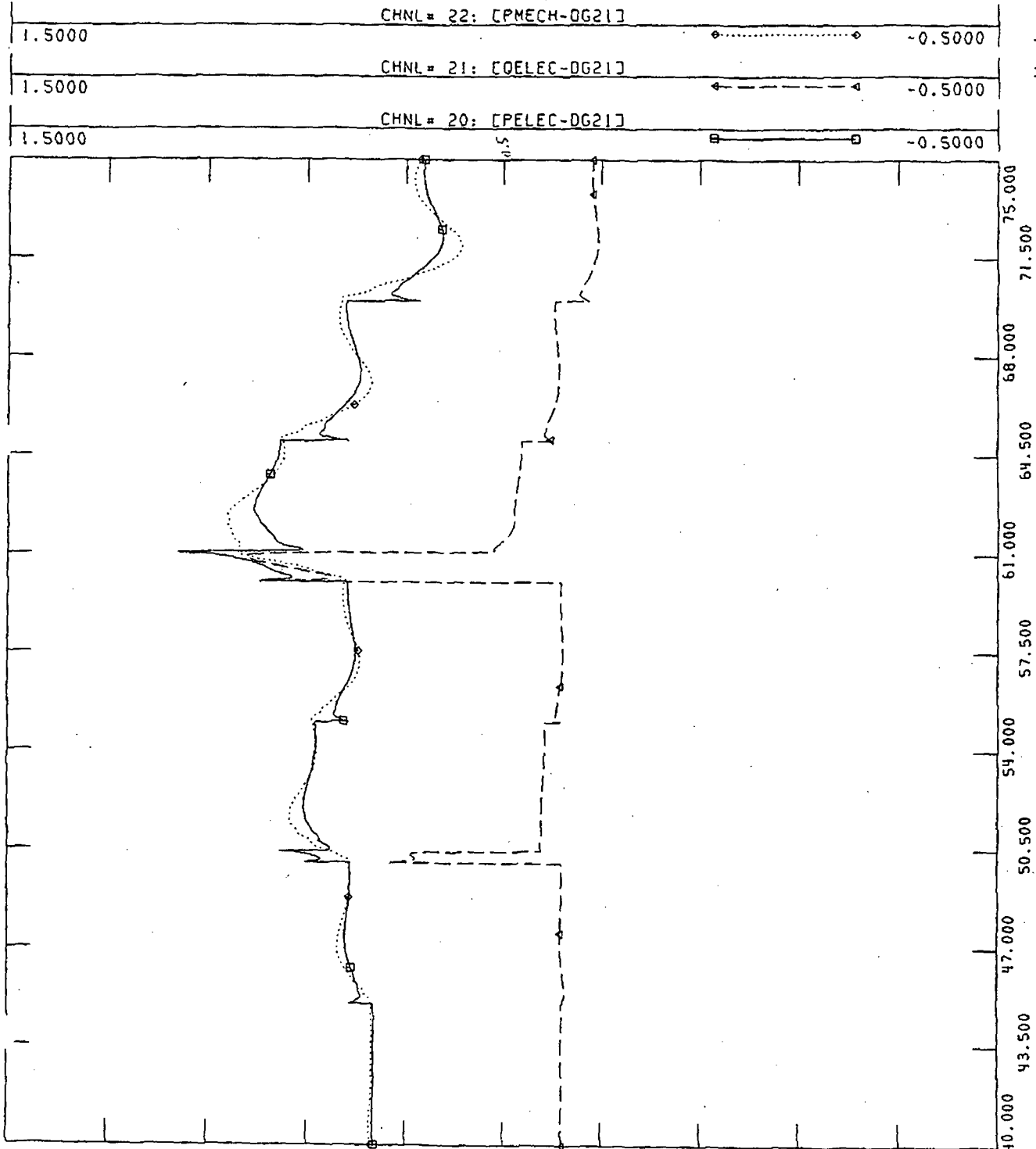
Wed. Jan 14 1998 15:37
DIESEL VOLTS





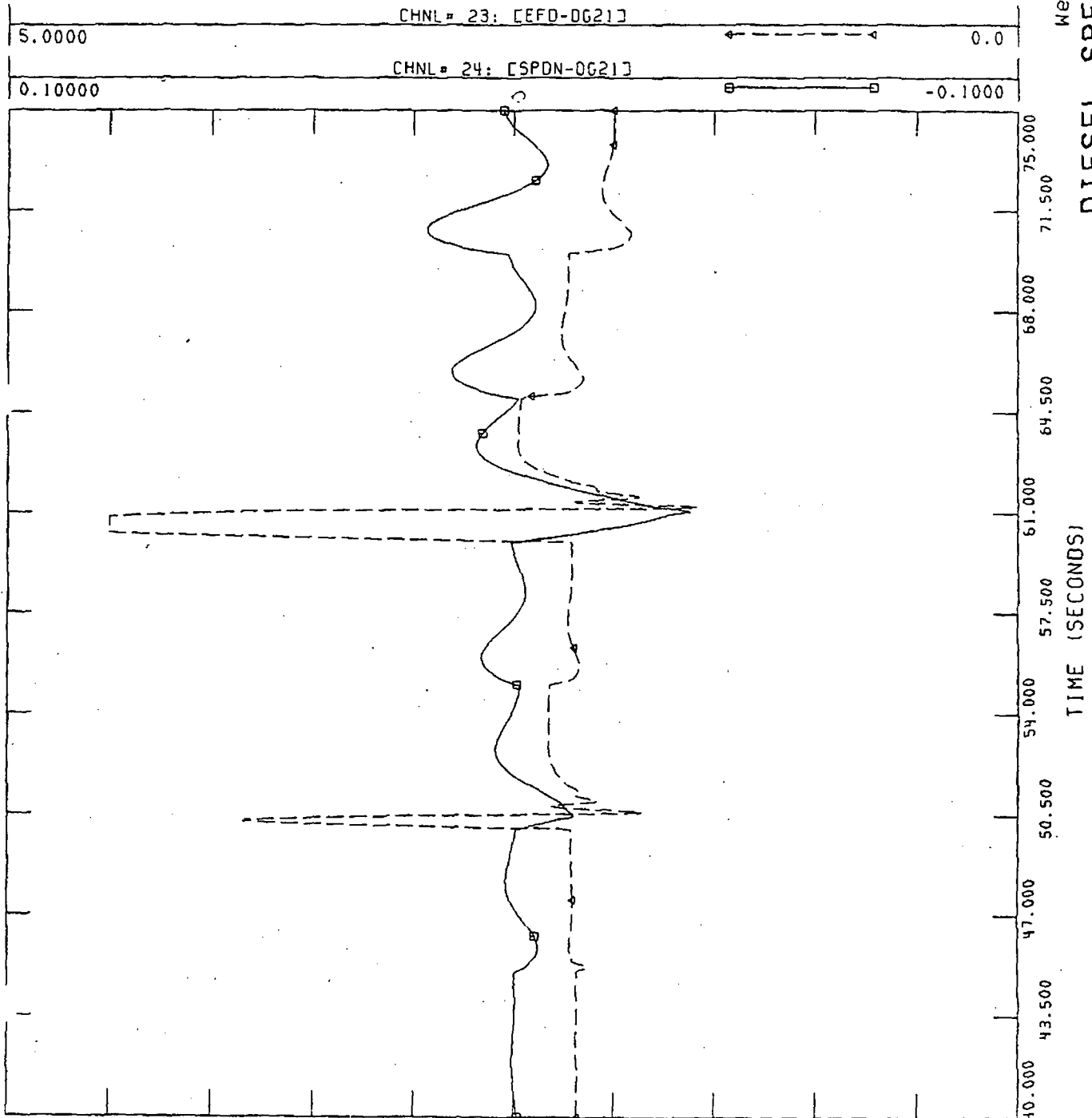
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21: BUS 5A
LOADING SEQUENCE FROM 1 TO 46 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-RSP21 ON-S121 OFF-CSP21 OFF
FILE: c:\psse24w\coned\dynam\case11.out

Wed, Jan 14 1998 15:3
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 46 MINUTES
SEQUENCE: CH21 ON-CH21 OFF-RSP21 ON-SI21 OFF-CSP21 OFF
FILE: c:\psse24w\coned\dynam\casell.out



Wed. Jan 14 1998 15:38
DIESEL SPEED & FLD VOLTS

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPCS11.SNP
LOFL
CASE,DG21CON.SAV
FACT
STRT
CASE11.OUT

RUN
0 30 3
PSAS
1

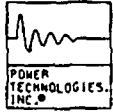
CHANGE MWP LOAD BUS 54 TO 0.143 MW
RUN TO 3 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.347
RUN TO 15 SECONDS PRINT 0 PLOT 3
SET CON 108 TO 0.321
RUN TO 20 SECONDS PRINT 0 PLOT 3
SET CON 69 TO 0.319
RUN TO 25 SECONDS PRINT 0 PLOT 3
SET CON 82 TO 0.319
RUN TO 30 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.349
RUN TO 45 SECONDS PRINT 0 PLOT 3
CHANGE MWP LOAD BUS 49 TO 0.109 MW
RUN TO 50 SECONDS PRINT 0 PLOT 3
SET CON 147 TO 0.177
RUN TO 55 SECONDS PRINT 0 PLOT 3
SET CON 147 TO 0.0
RUN TO 60 SECONDS PRINT 0 PLOT 3
SET CON 134 TO 0.319
RUN TO 65 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.0
RUN TO 70 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.0
RUN TO 75 SECONDS PRINT 0 PLOT 3

/10.0 SEC MCC26A @143 KW
/13.0 SEC SI21 ON
/25.0 SEC SW21 ON
/30.0 SEC CR21 ON
/35.0 SEC CR22 ON
/40.0 SEC CS21 ON
/MCC29A @ 109 KW
/4.0 MIN CH21 ON
/27.0 MIN CH21 OFF
/33.0 MIN RCP21 ON
/35.0 MIN SI21 OFF
/46.0 MIN CSP21 OFF

PASS
FIN
END

ATTACHMENT XII

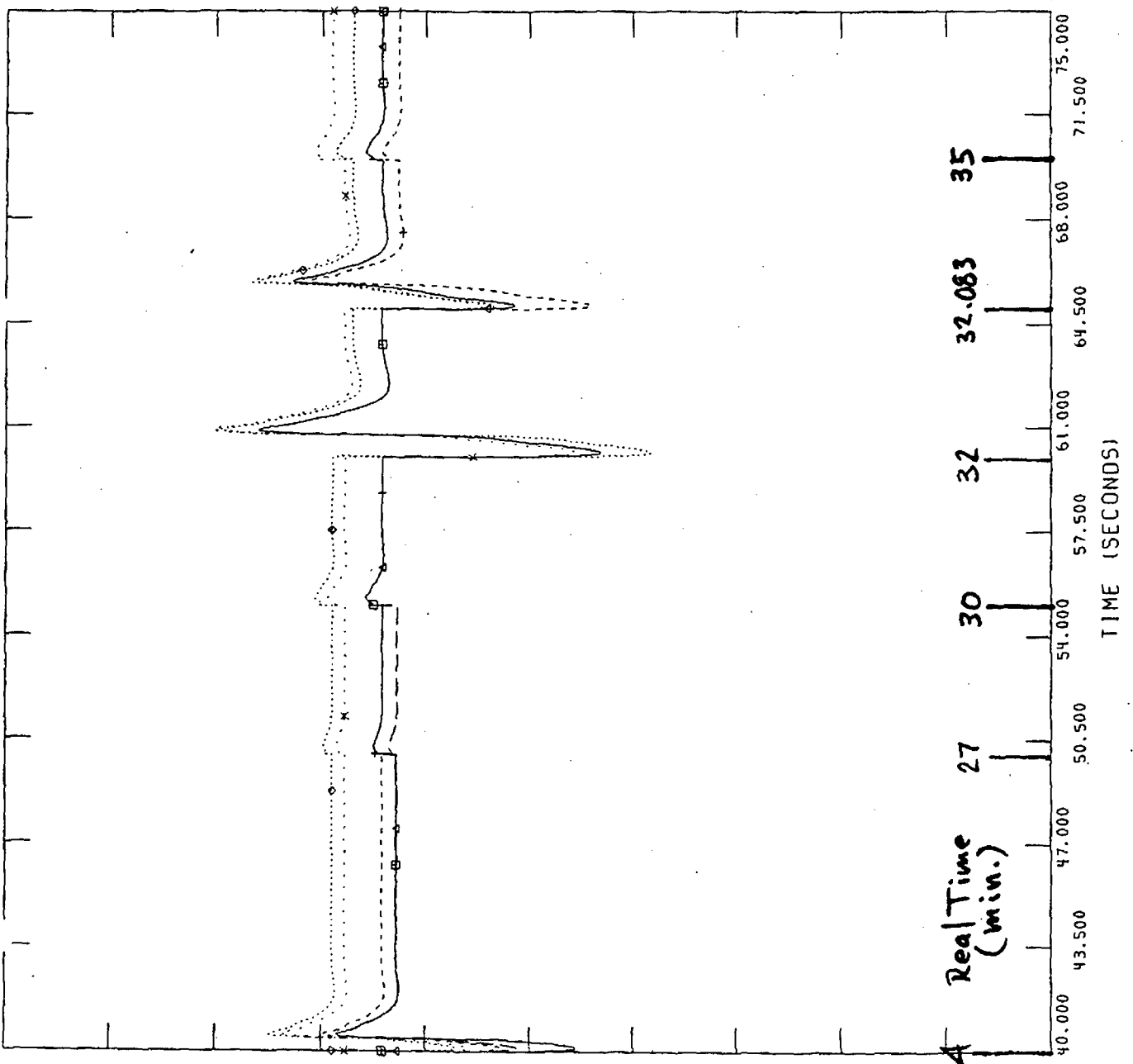
DIESEL GENERATOR 22 - RECIRCULATION (FAILURE OF DG 23)

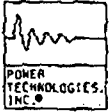


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 35 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 OFF-SW25 ON-CCW22 ON-S122 OF
FILE: c:\psse24w\coned\dynam\case12.out

Thu. Jan 15 1998 9:2
MOTOR VOLTAGE

1.4000	CHNL # 2: [VOLT-S1P22]	x.....x	0.40000
1.4000	CHNL # 10: [VOLT-CC22]	+-----+	0.40000
1.4000	CHNL # 9: [VOLT-SW25]	o.....o	0.40000
1.4000	CHNL # 3: [VOLT-RH21]	o.....o	0.40000
1.4000	CHNL # 8: [VOLT-CH22]	o.....o	0.40000

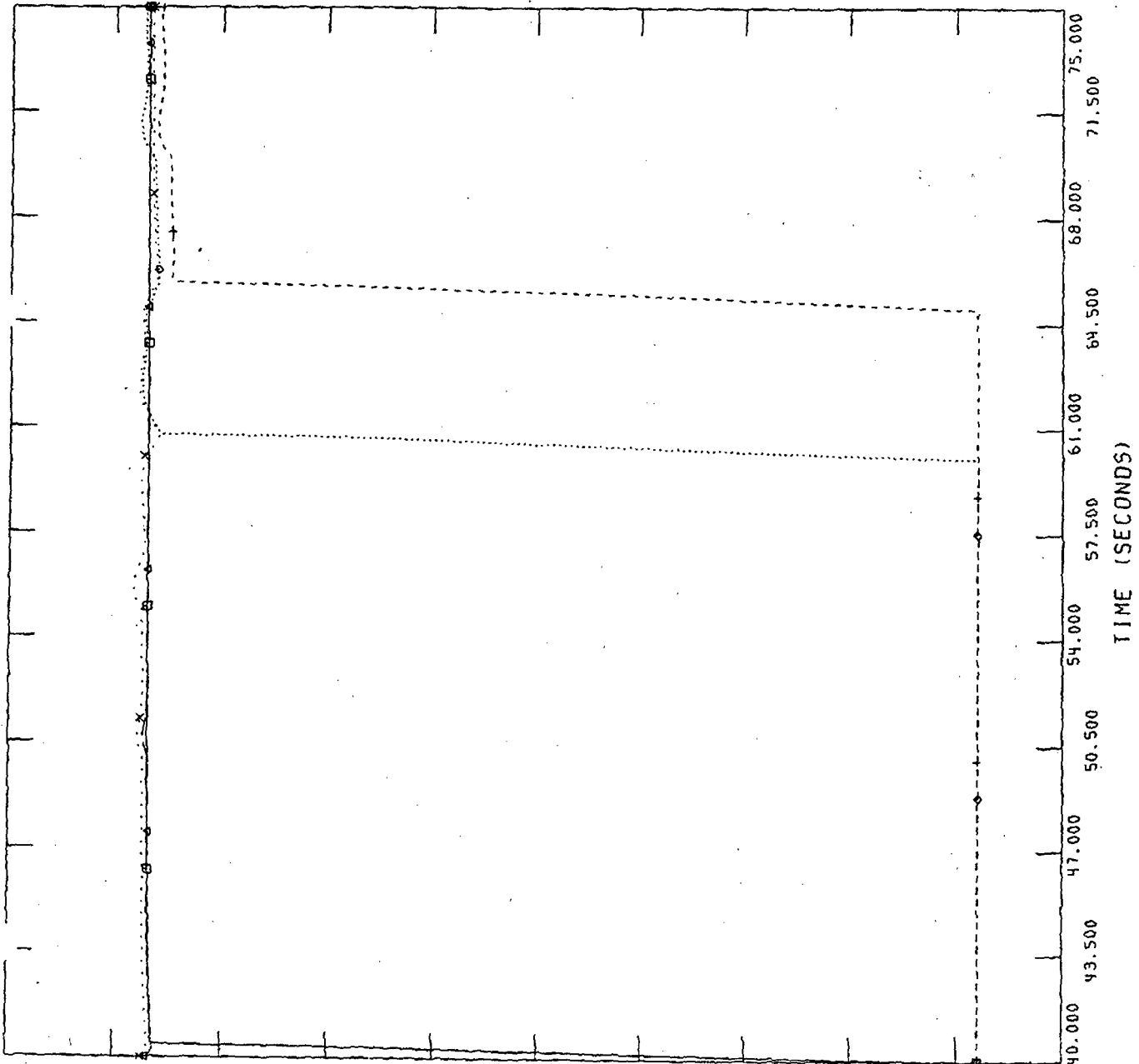


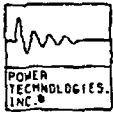


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 35 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 OFF-SW25 ON-CCW22 ON-SI22 OF
FILE: c:\psse24w\coned\dynam\case12.out

Thu, Jan 15 1998 9:22
MOTOR SPEEDS

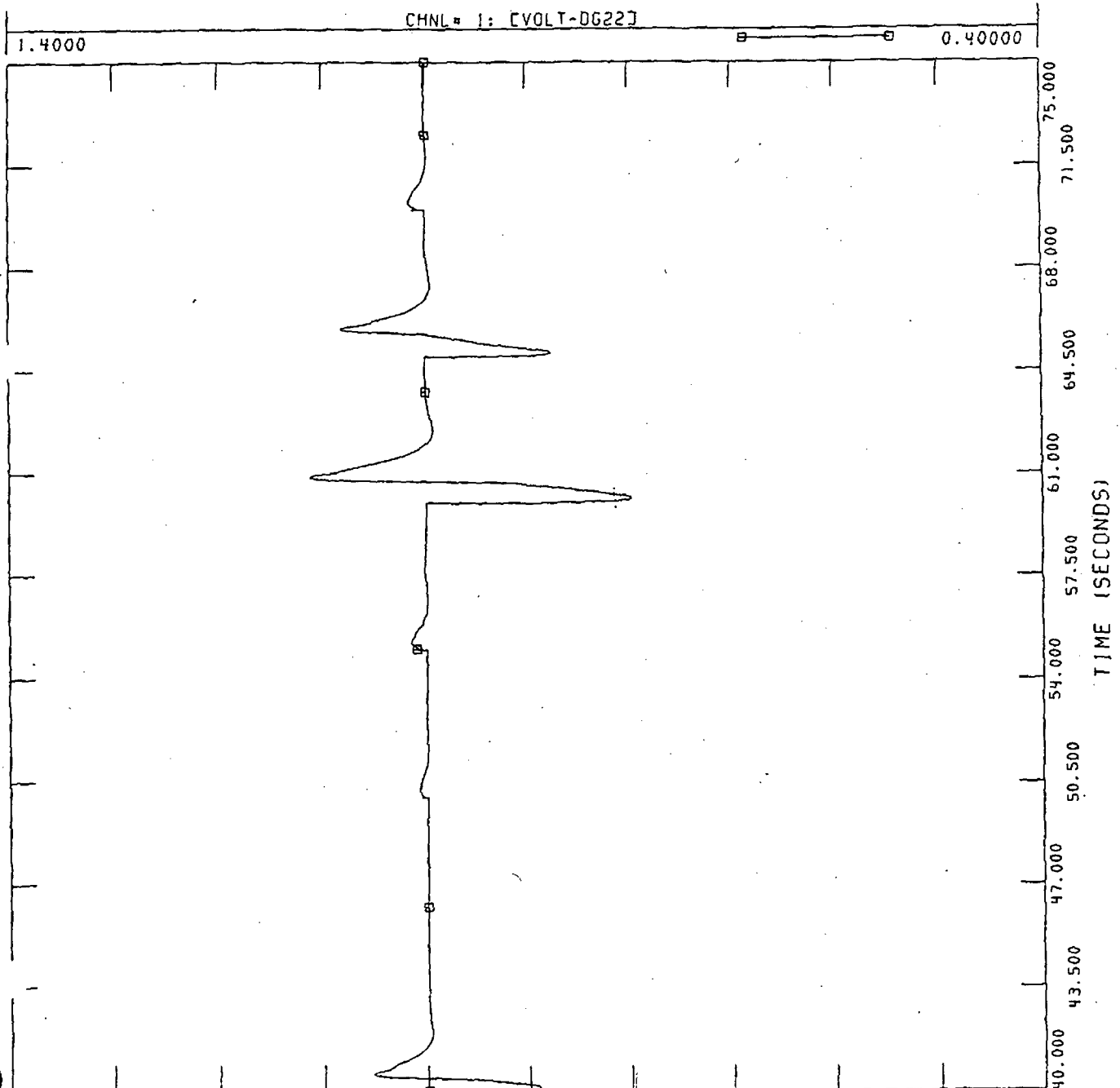
0.15000	CHNL # 11: [SPDN-SIP22]	x.....x	-1.100
0.15000	CHNL # 19: [SPDN-CC22]	+-----+	-1.100
0.15000	CHNL # 18: [SPDN-SW25]	o.....o	-1.100
0.15000	CHNL # 12: [SPDN-RH21]	o-----o	-1.100
0.15000	CHNL # 17: [SPDN-CH22]	o-----o	-1.100





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 35 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 OFF-SW25 ON-CCW22 ON-SI22 OF
FILE: c:\psse24w\coned\dynam\case12.out

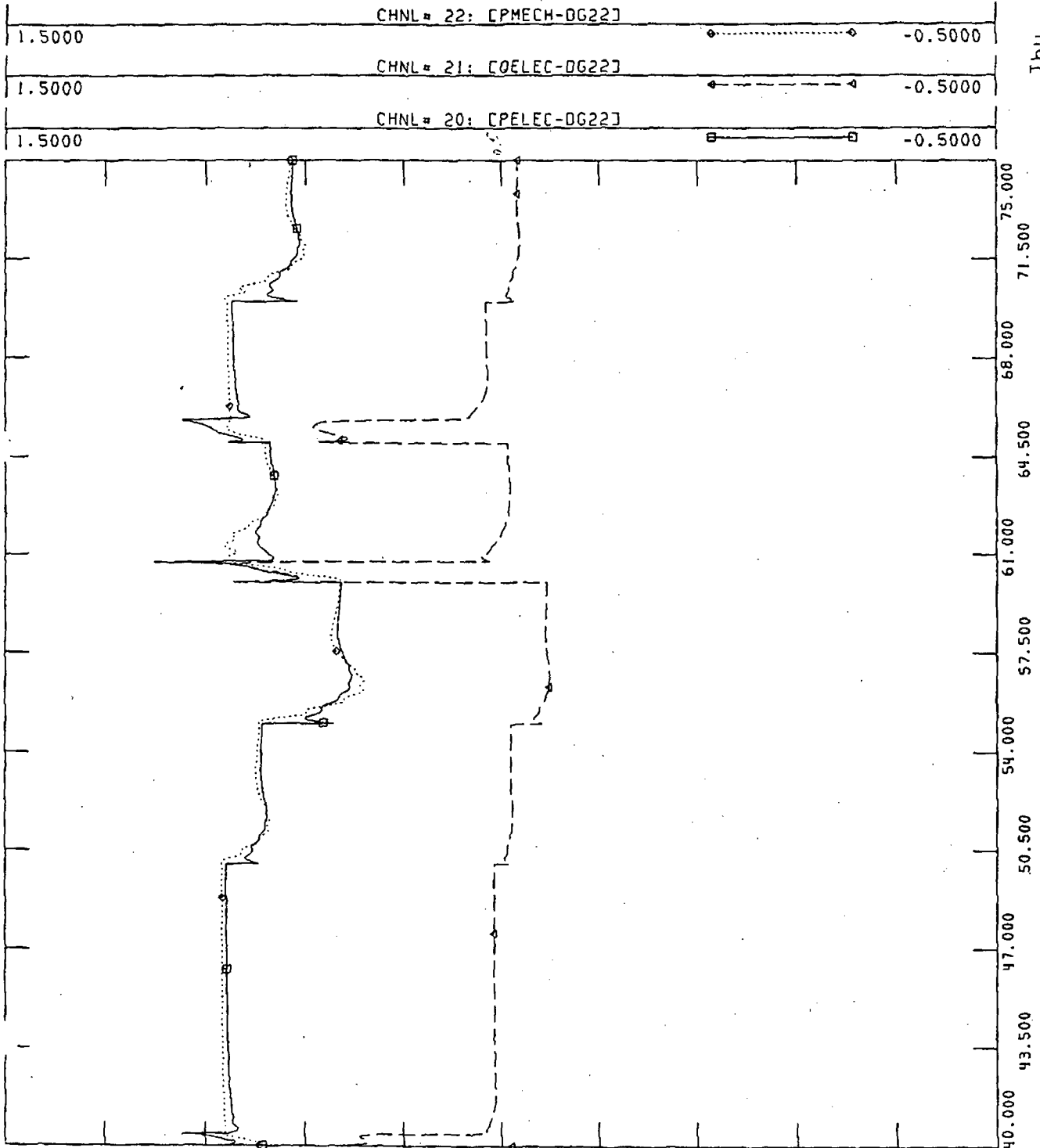
Thu. Jan 15 1998 9:27
DIESEL VOLTS





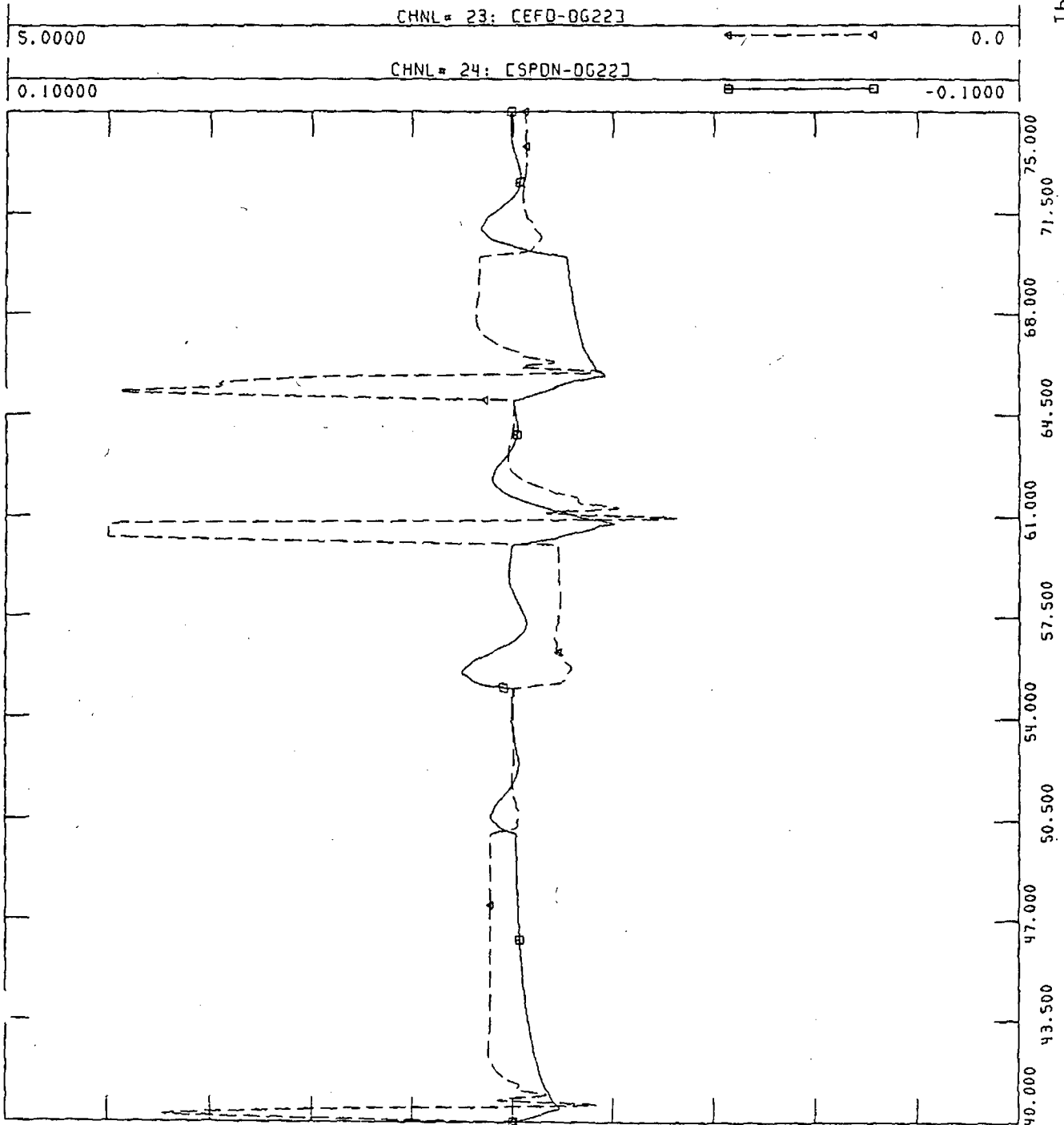
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 35 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-AH21 OFF-SW25 ON-CCW22 ON-SI22 OF
FILE: c:\psse24w\coned\dynam\case12.out

Thu. Jan 15 1998 9:11
DIESEL POWE





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 35 MINUTES
SEQUENCE: CH22 ON-CH22 OFF-RH21 OFF-SW25 ON-CCW22 ON-S122 OF
FILE: c:\psse24w\coned\dynam\case12.out



Thu. Jan 15 1998 9:28
DIESEL SPEED & FLD VOLTS

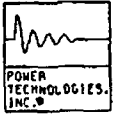
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPCS12.SNP
LOFL
CASE,DG22CON.SAV
FACT
1.
STRT
CASE12.OUT

RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 31 TO 0.206 MW	/10.0 SEC	MCC26C @206 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI22 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.349	/18.0 SEC	RH21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW22 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR24 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/35.0 SEC	CR23 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.364	/40.0 SEC	AF21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.177	/4.0 MIN	CH22 ON
RUN TO 50 SECONDS PRINT 0 PLOT 3		
SET CON 147 TO 0.0	/27.0 MIN	CH22 OFF
RUN TO 55 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.0	/30.0 MIN	RH21 OFF
RUN TO 60 SECONDS PRINT 0 PLOT 3		
SET CON 95 TO 0.321	/32.0 MIN	SW25 ON
RUN TO 65 SECONDS PRINT 0 PLOT 3		
SET CON 134 TO 0.217	/32.0 MIN	CCW22 ON
RUN TO 70 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.0	/35.0 MIN	SI22 OFF
RUN TO 75 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

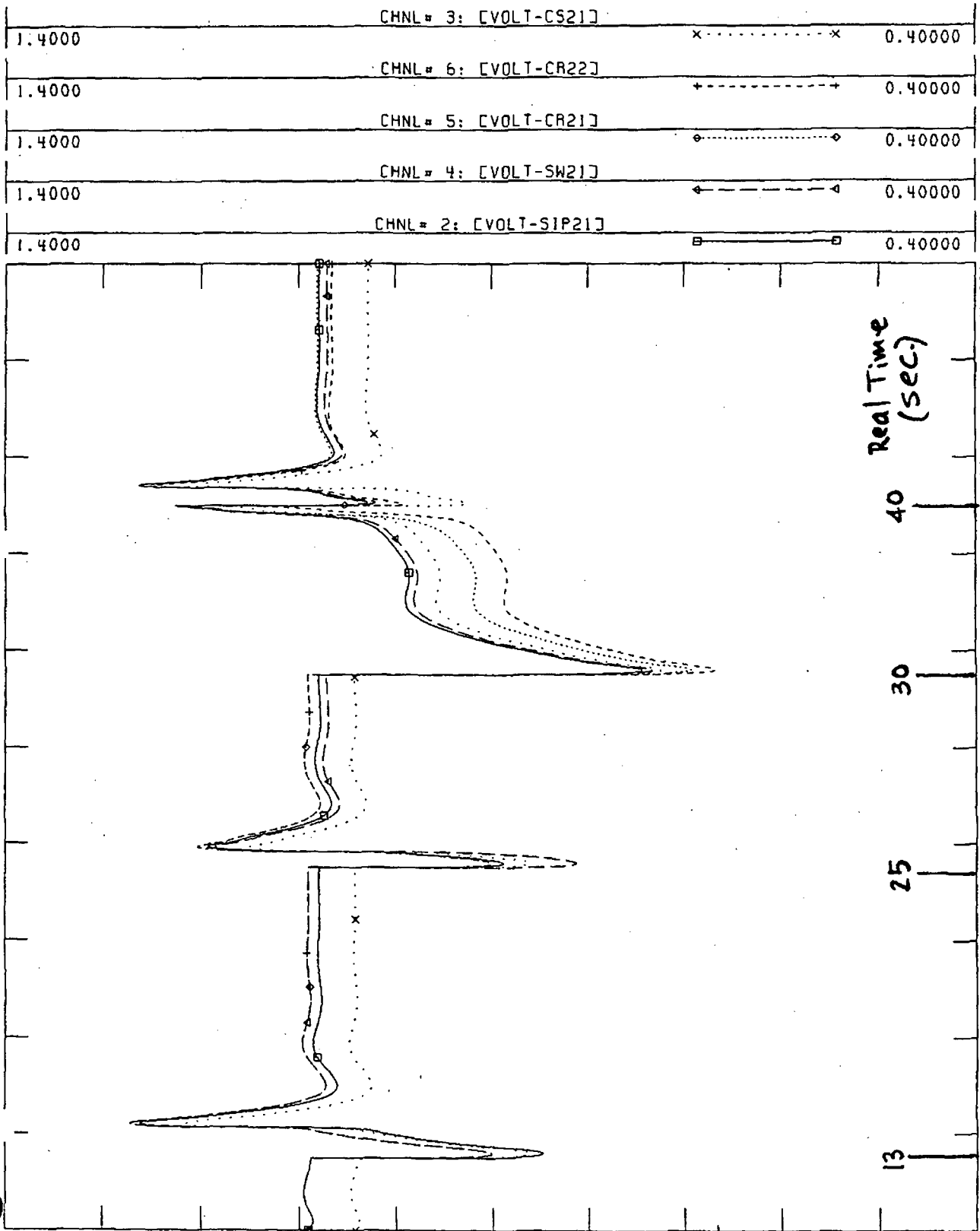
ATTACHMENT XIII

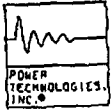
DIESEL-GENERATOR 21 - INJECTION (CR21 & CR22 CONCURRENTLY)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
SEQUENCE: SI21 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case13.out

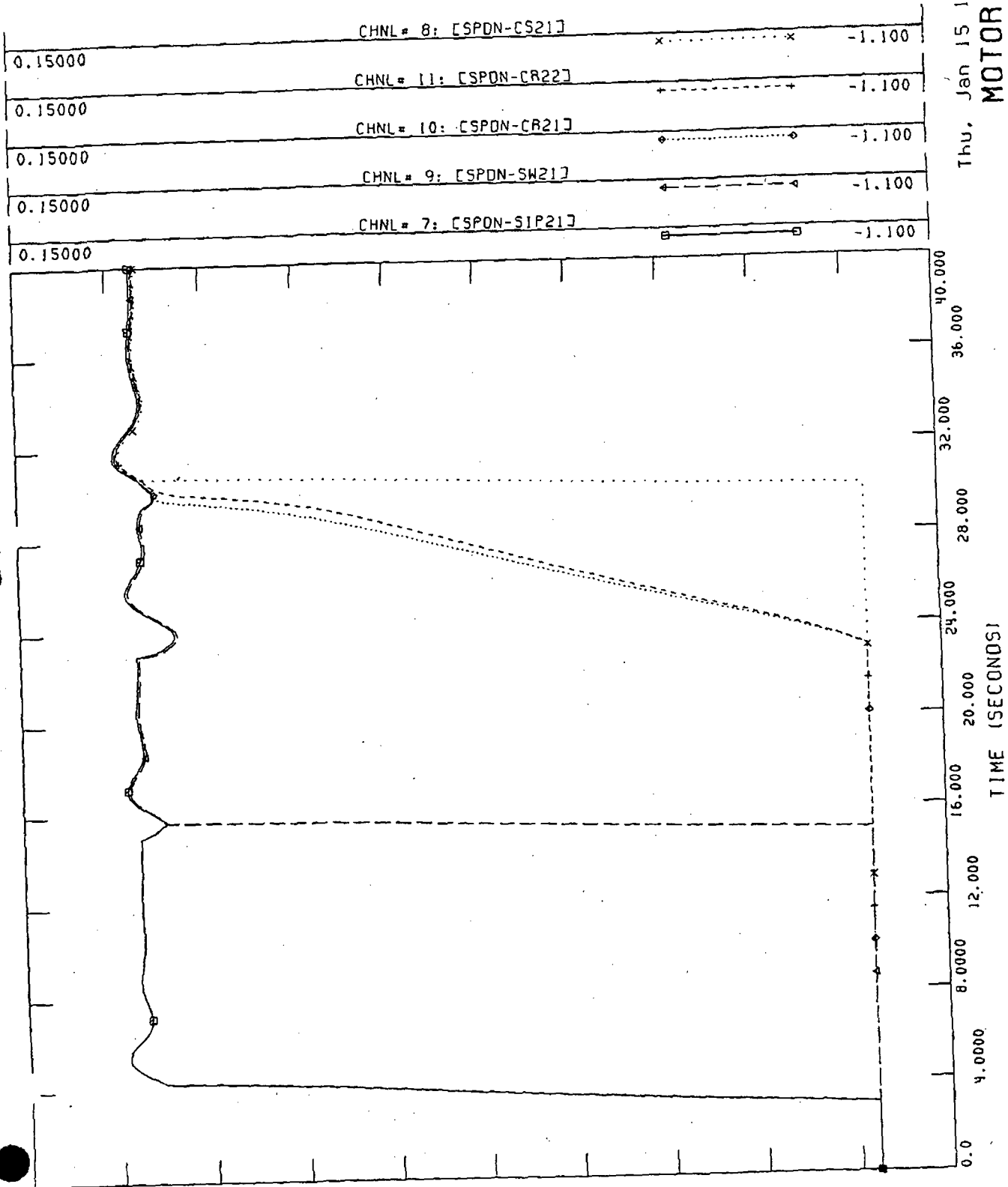
Thu. Jan 15 1998 16:40
MOTOR VOLTAGES

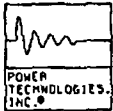




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case13.out

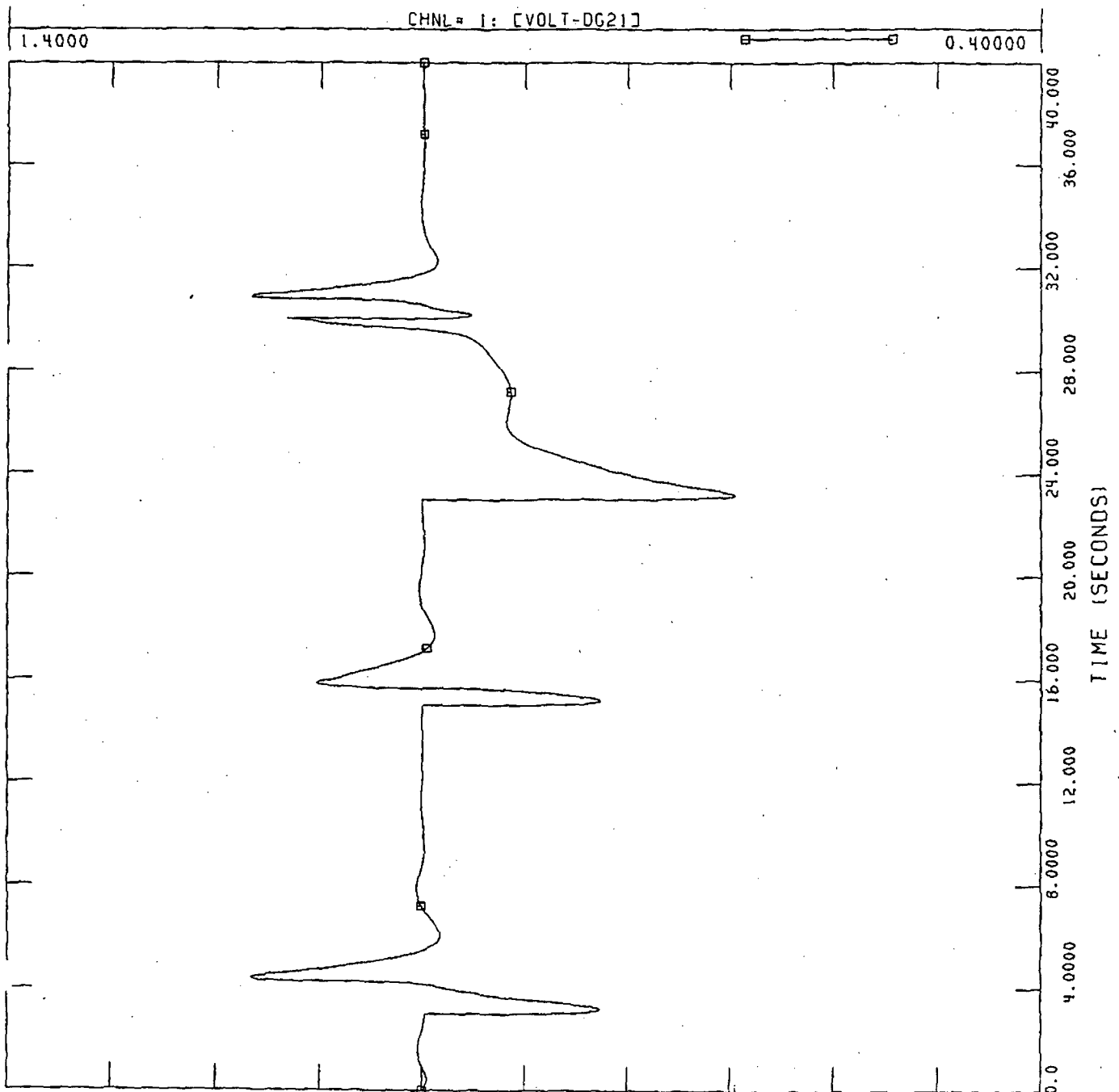
Thu, Jan 15 1998 16:31
MOTOR SPEEDS

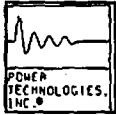




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FORM 10 TO 40 SECONDS
SEQUENCE: SI21 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case13.out

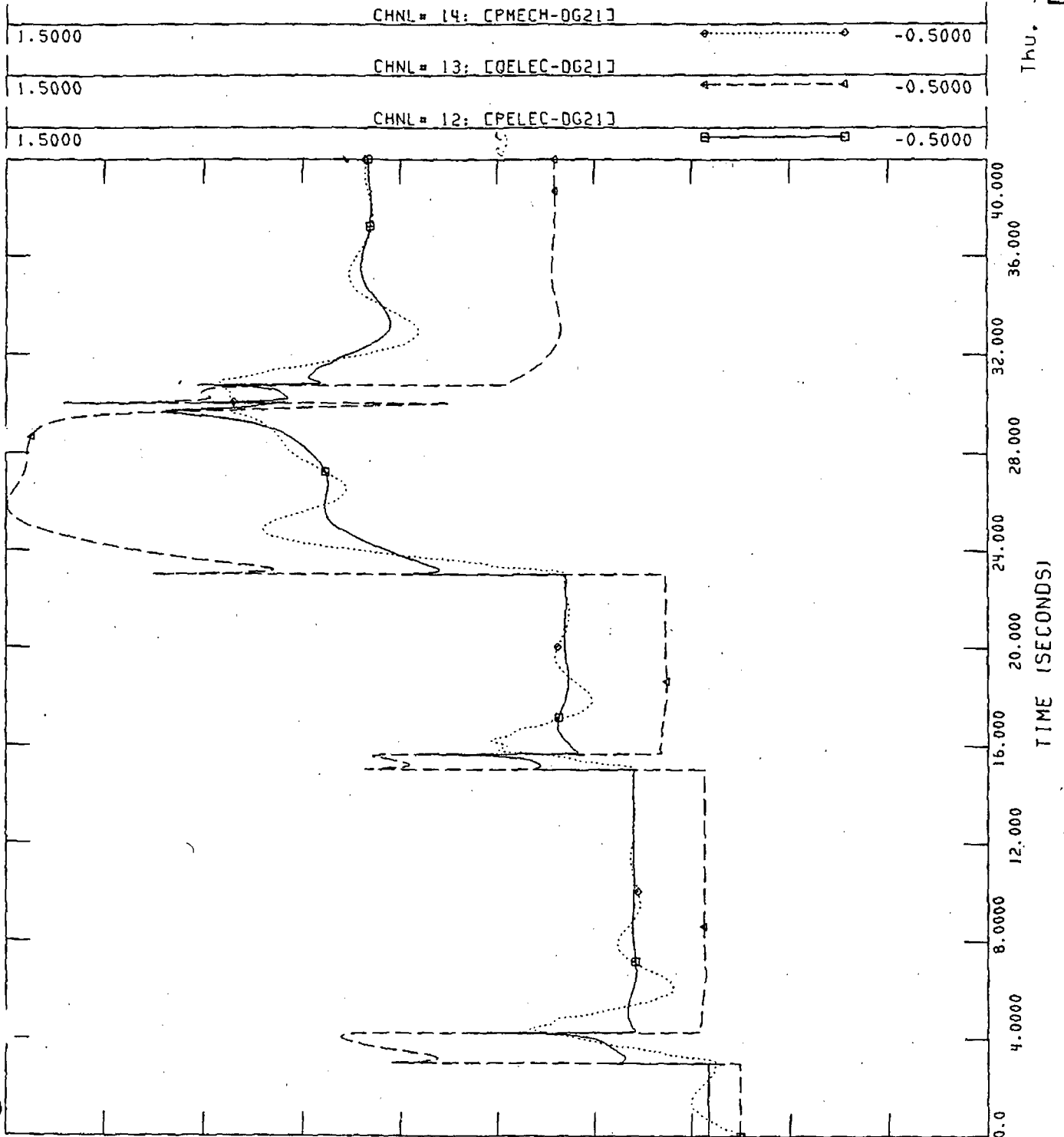
Thu. Jan 15 1998 16:41
DIESEL VOLTS

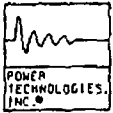




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FORM 10 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case13.out

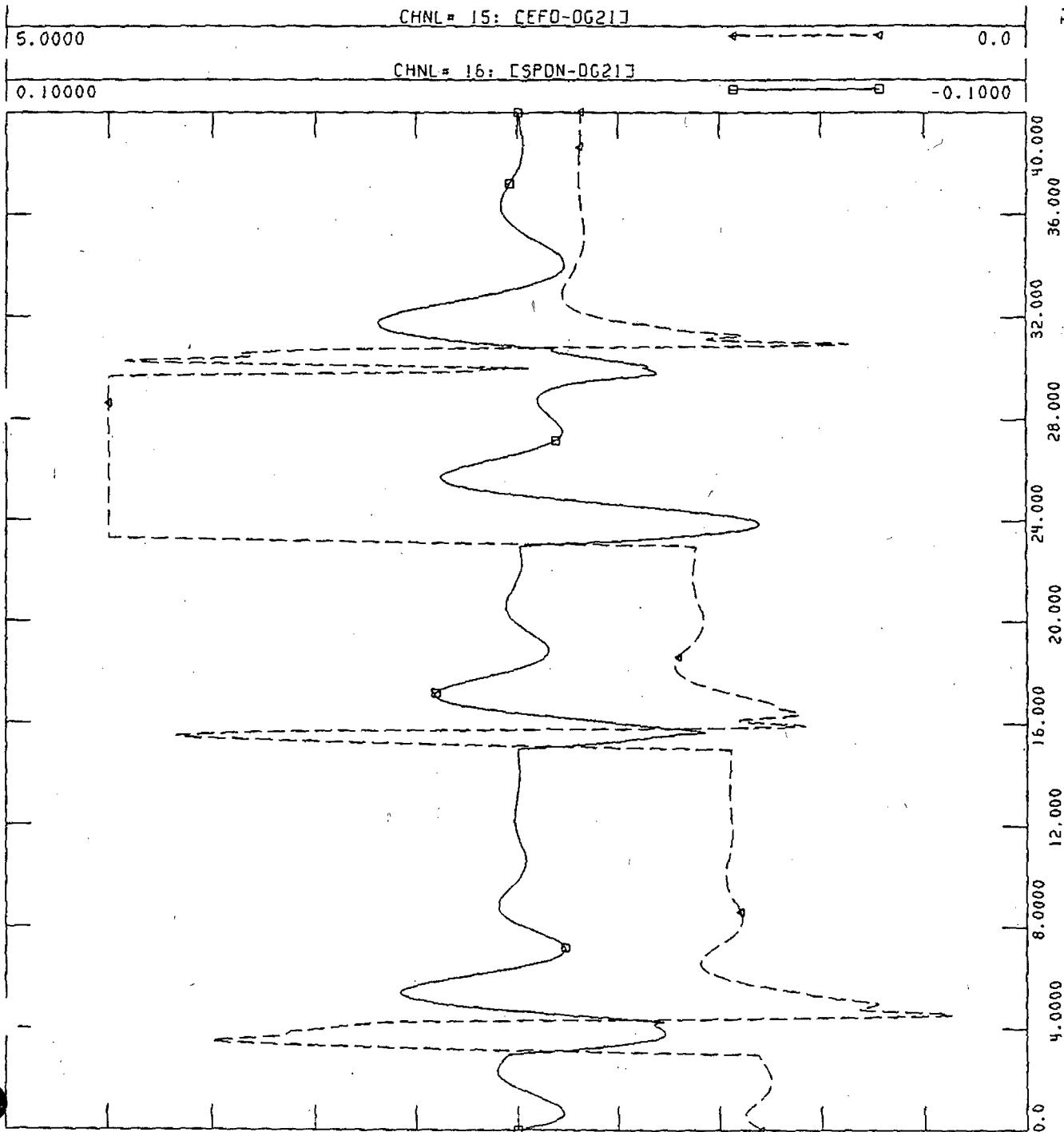
Thu, Jan 15 1998 16:4
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 10 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case13.out

Thu, Jan 15 1998 15:44
DIESEL SPEED & FLD VOLTS



R03CS13.IDV

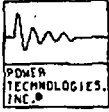
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPCS13.SNP
LOFL
CASE,DG21CON.SAV
STRT
CASE13.OUT

RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 54 TO 0.143 MW	/10.0 SEC	MCC26A @143 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.321	/25.0 SEC	SW21 ON
RUN TO 23 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR21 ON
RUN TO 23 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.319	/35.0 SEC	CR22 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.349	/40.0 SEC	CS21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

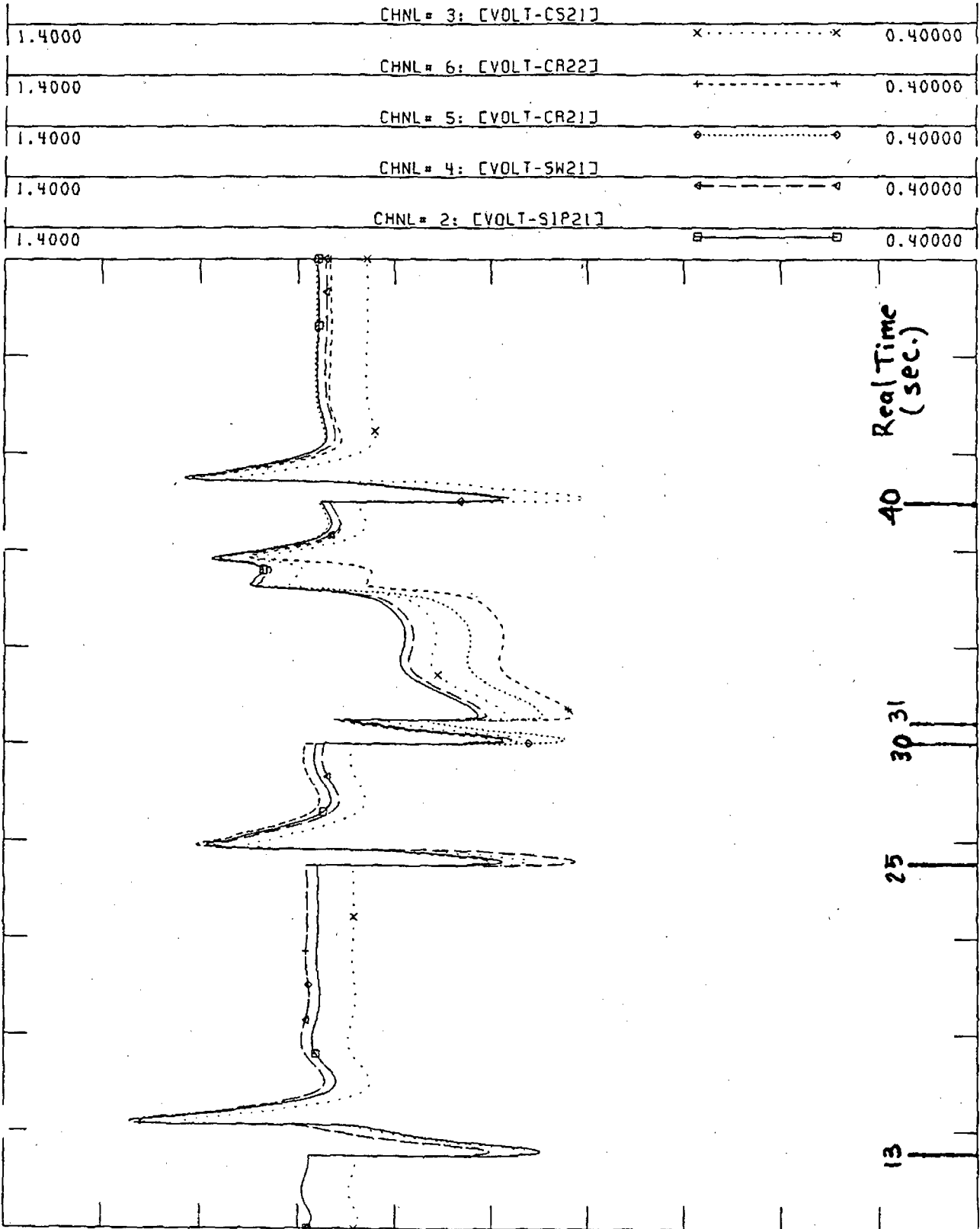
ATTACHMENT XIV

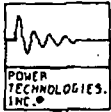
DIESEL-GENERATOR 21 - INJECTION (CR21 & CR22 ONE SECOND APART)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF2)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: SI21 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case14.out

Fri, Jan 16 1998 9:11
MOTOR VOLTAGES

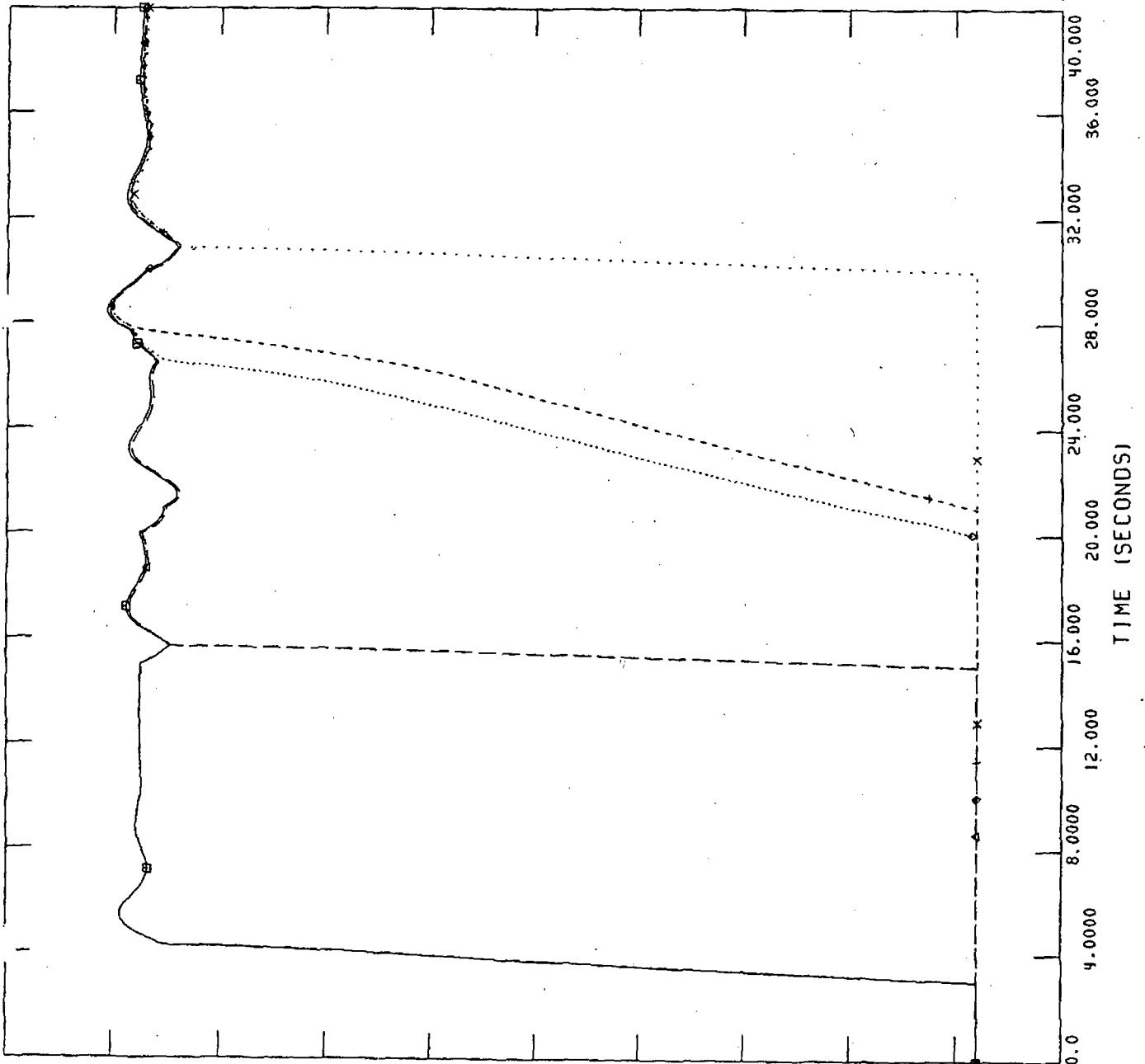


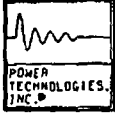


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case14.out

Fri. Jan 16 1998 9:0
MOTOR SPEED:

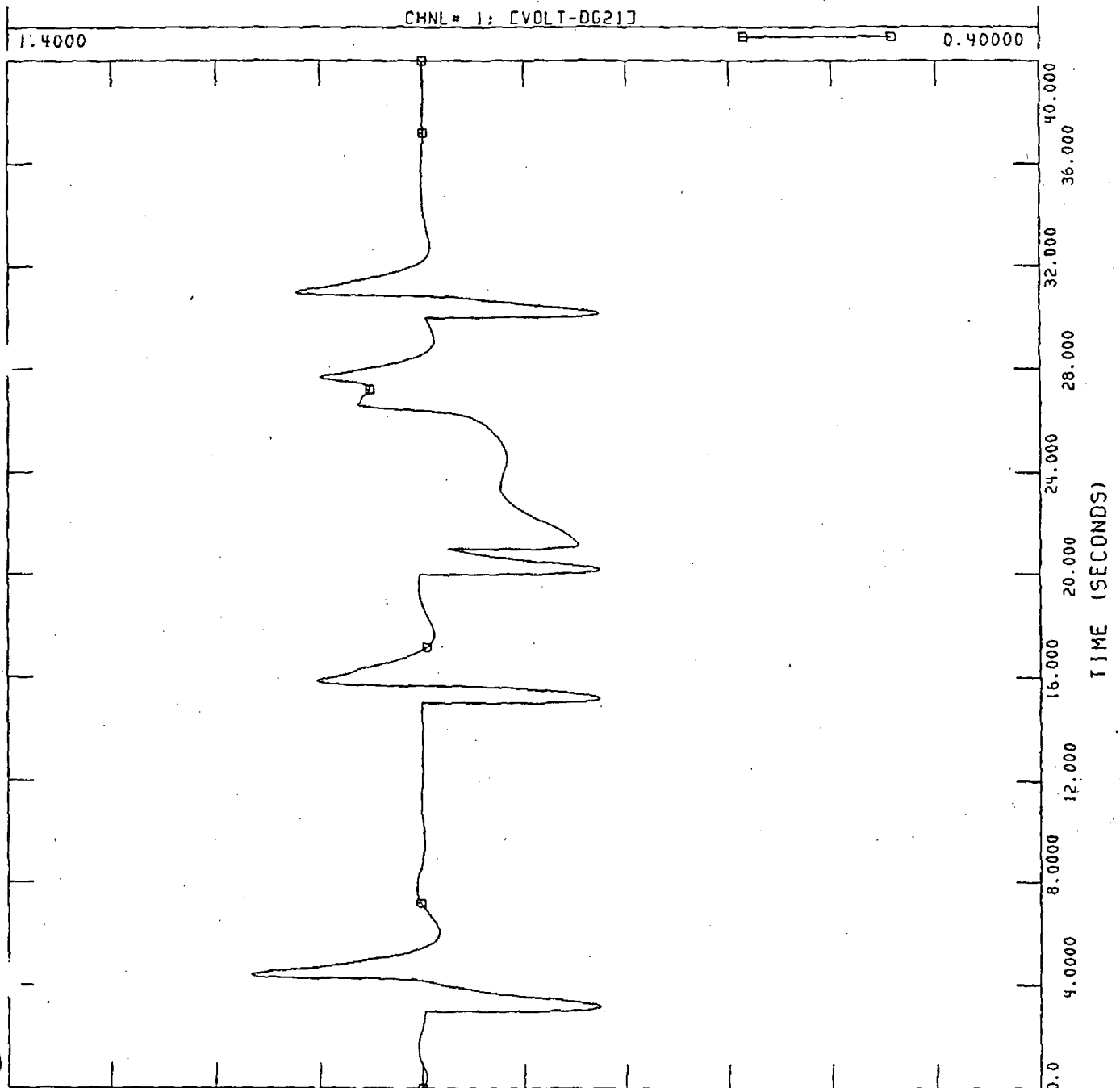
0.15000	CHNL # 8: [SPDN-CS21]	x x	-1.100
0.15000	CHNL # 11: [SPDN-CR22]	+ +	-1.100
0.15000	CHNL # 10: [SPDN-CR21]	o o	-1.100
0.15000	CHNL # 9: [SPDN-SW21]	← →	-1.100
0.15000	CHNL # 7: [SPDN-S1P21]	□ □	-1.100

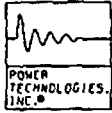




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case14.out

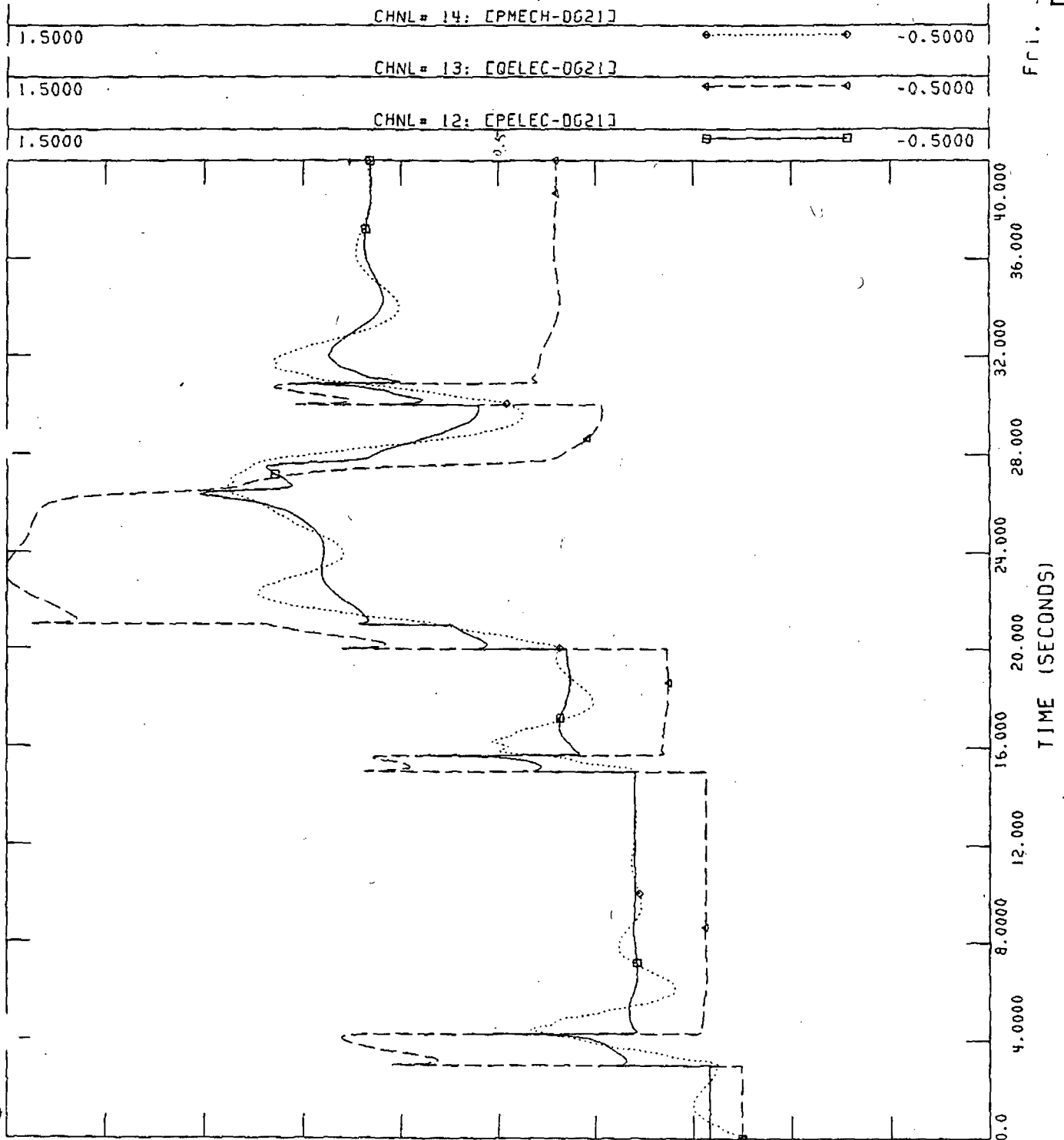
Fri. Jan 16 1998 9:11
DIESEL VOLTS

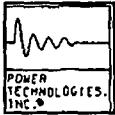




INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case14.out

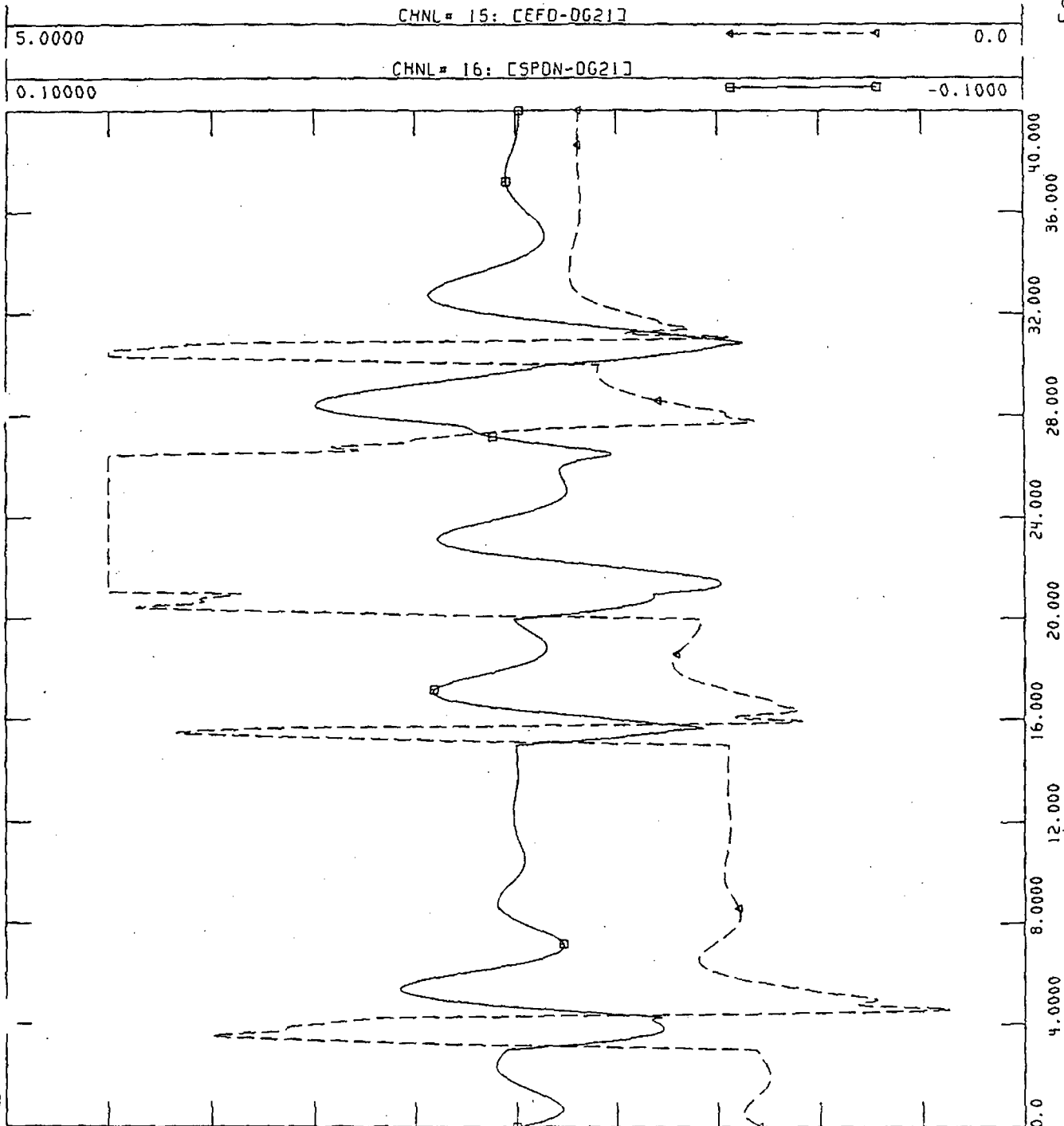
Fri. Jan 16 1998 9:1
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY ILF21
DIESEL GENERATOR #21 BUS 5A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S121 ON-SW21 ON-CR21 ON-CR22 ON-CS21 ON
FILE: c:\psse24w\coned\dynam\case14.out

Fri. Jan 16 1998 9:15
DIESEL SPEED & FLD VOLTS



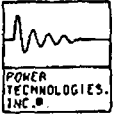
MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPCS14.SNP
LOFL
CASE,DG21CON.SAV
STRT
CASE14.OUT

RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 54 TO 0.143 MW	/10.0 SEC	MCC26A @143 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.321	/25.0 SEC	SW21 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR21 ON
RUN TO 21 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.319	/35.0 SEC	CR22 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.349	/40.0 SEC	CS21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
FIN		
END		

ATTACHMENT XV

DIESEL-GENERATOR 22 - INJECTION (CR23 AND AF 21 CONCURRENTLY)



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

DIESEL GENERATOR #22 BUSES 2A & 3A

LOADING SEQUENCE FROM 1 TO 40 SECONDS

SEQUENCE: SI22 ON-AH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON

FILE: c:\psse24w\coned\dynam\case15.out

CHNL # 7: [VOLT-AF21]

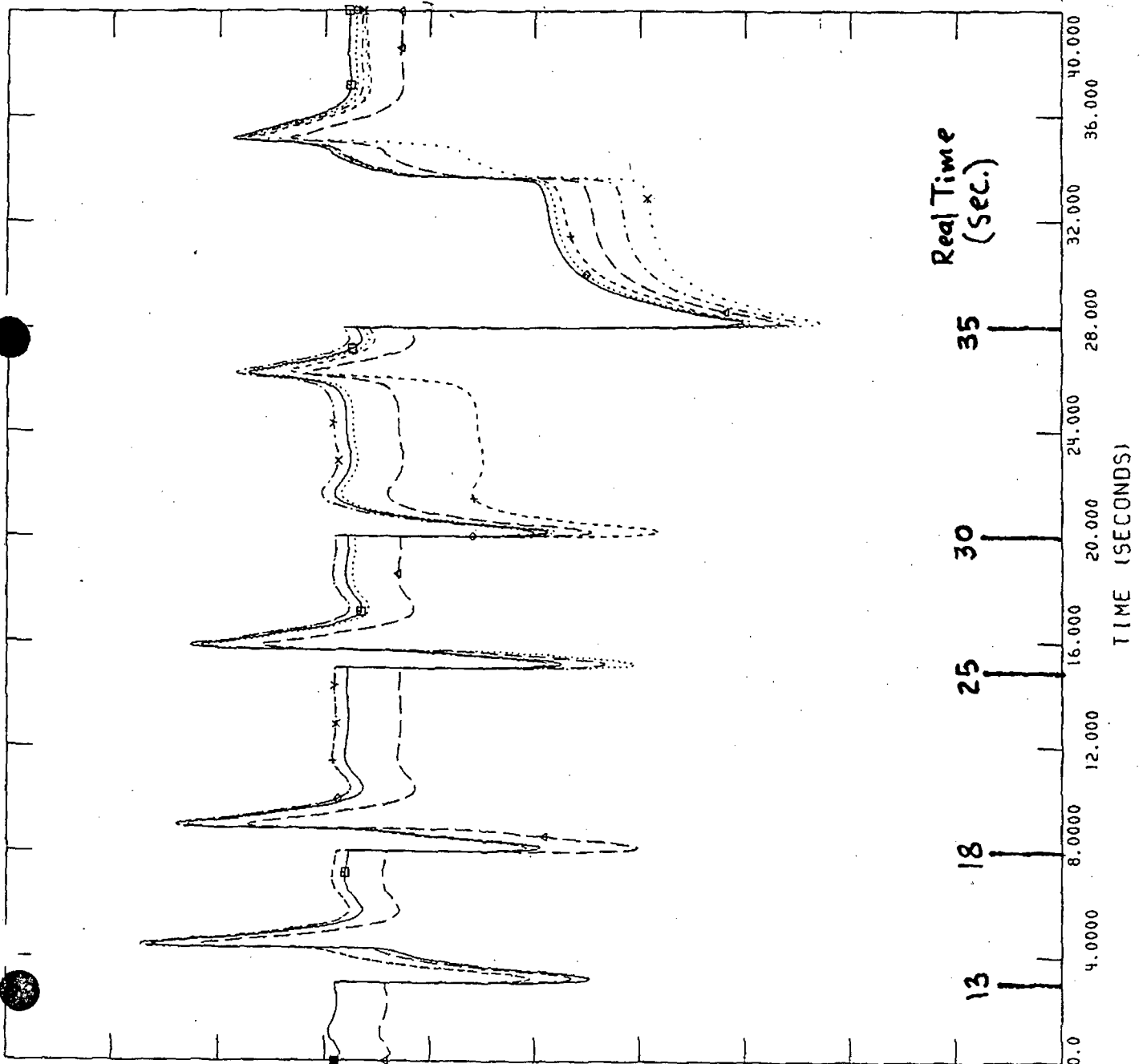
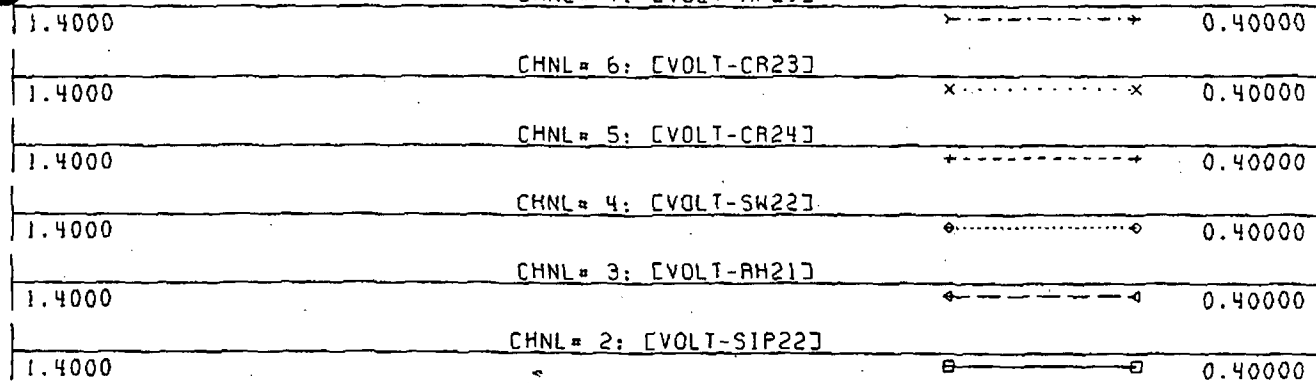
CHNL # 6: [VOLT-CR23]

CHNL # 5: [VOLT-CR24]

CHNL # 4: [VOLT-SW22]

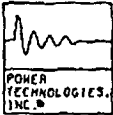
CHNL # 3: [VOLT-AH21]

CHNL # 2: [VOLT-SIP22]



Fri, Jan 16 1998 9:46

MOTOR VOLTAGES



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

DIESEL GENERATOR #22 BUSES 2A & 3A

LOADING SEQUENCE FROM 1 TO 40 SECONDS

SEQUENCE: S122 ON-AH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON

FILE: c:\psse24w\coned\dynam\case15.out

CHNL# 13: [SPDN-AF21]

0.15000 -1.100

CHNL# 12: [SPDN-CR23]

0.15000 -1.100

CHNL# 11: [SPDN-CR24]

0.15000 -1.100

CHNL# 10: [SPDN-SW22]

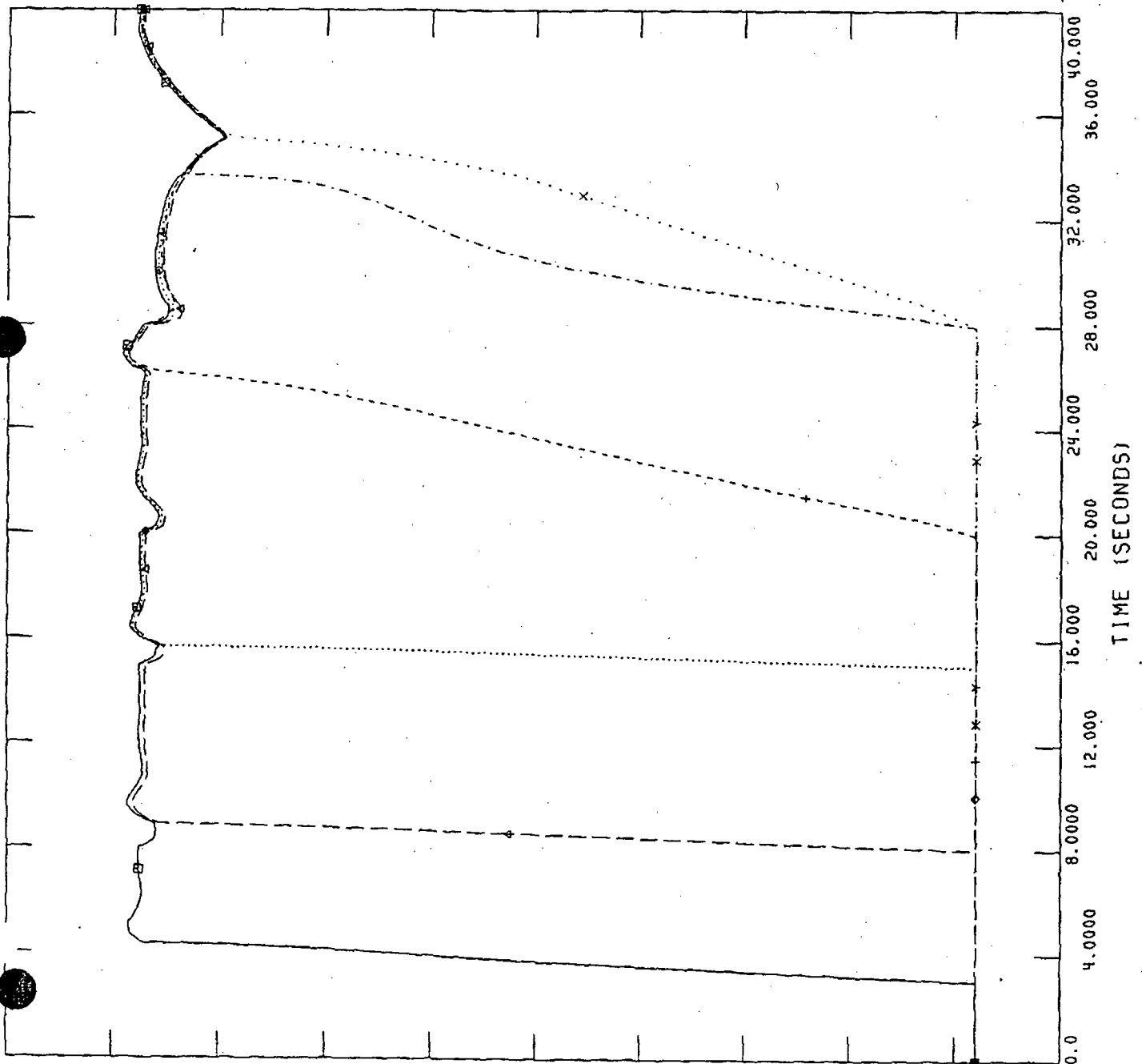
0.15000 -1.100

CHNL# 9: [SPDN-AH21]

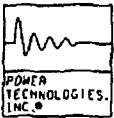
0.15000 -1.100

CHNL# 8: [SPDN-S1P22]

0.15000 -1.100



Fri, Jan 16 1998 9:4
MOTOR SPEED:



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

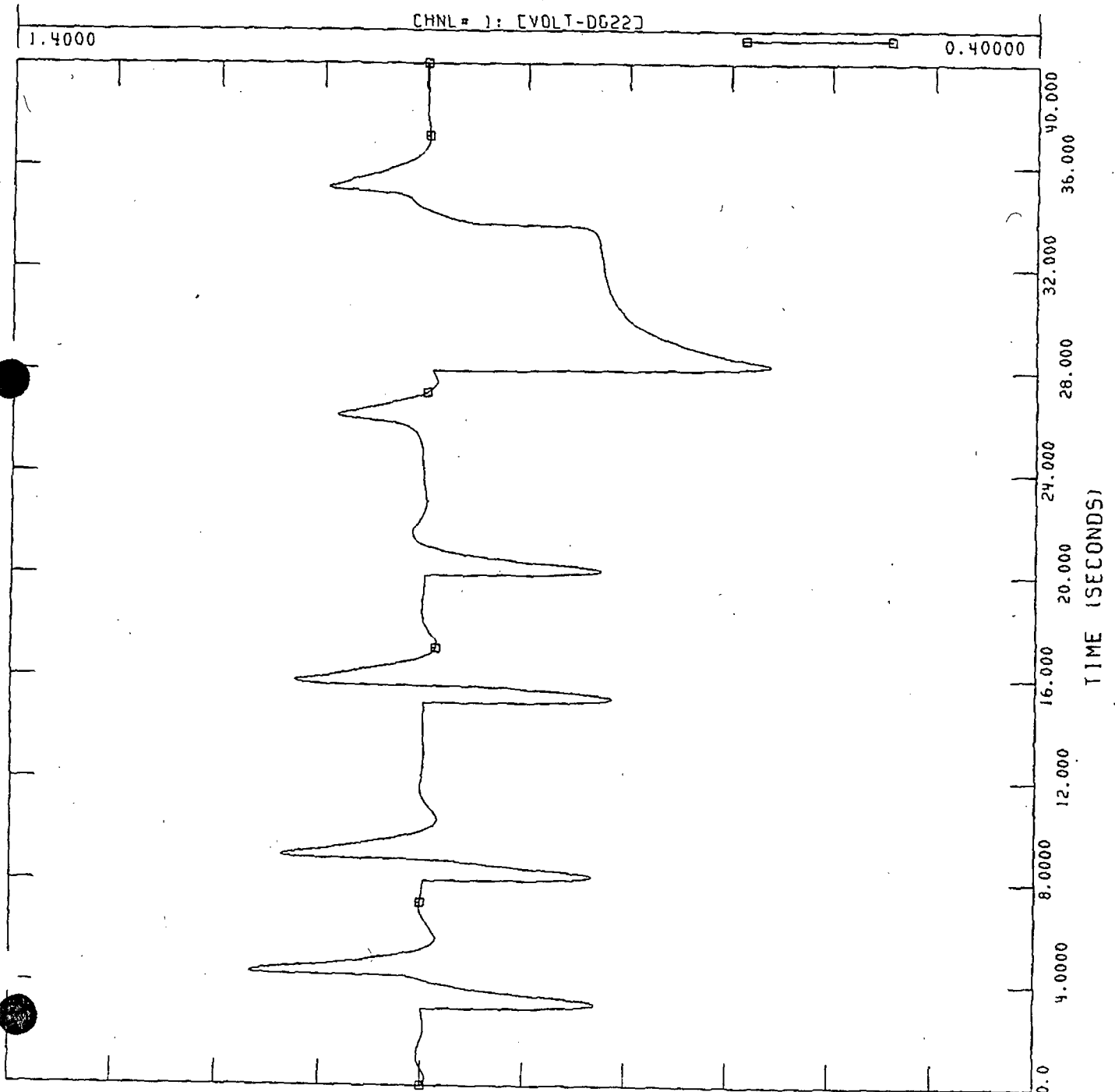
DIESEL GENERATOR #22 BUSES 2A & 3A

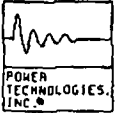
LOADING SEQUENCE FROM 1 TO 40 SECONDS

SEQUENCE: SI22 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON

FILE: c:\psse24w\coned\dynam\case15.out

Fri. Jan 16 1998 9:51
DIESEL VOLTS





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

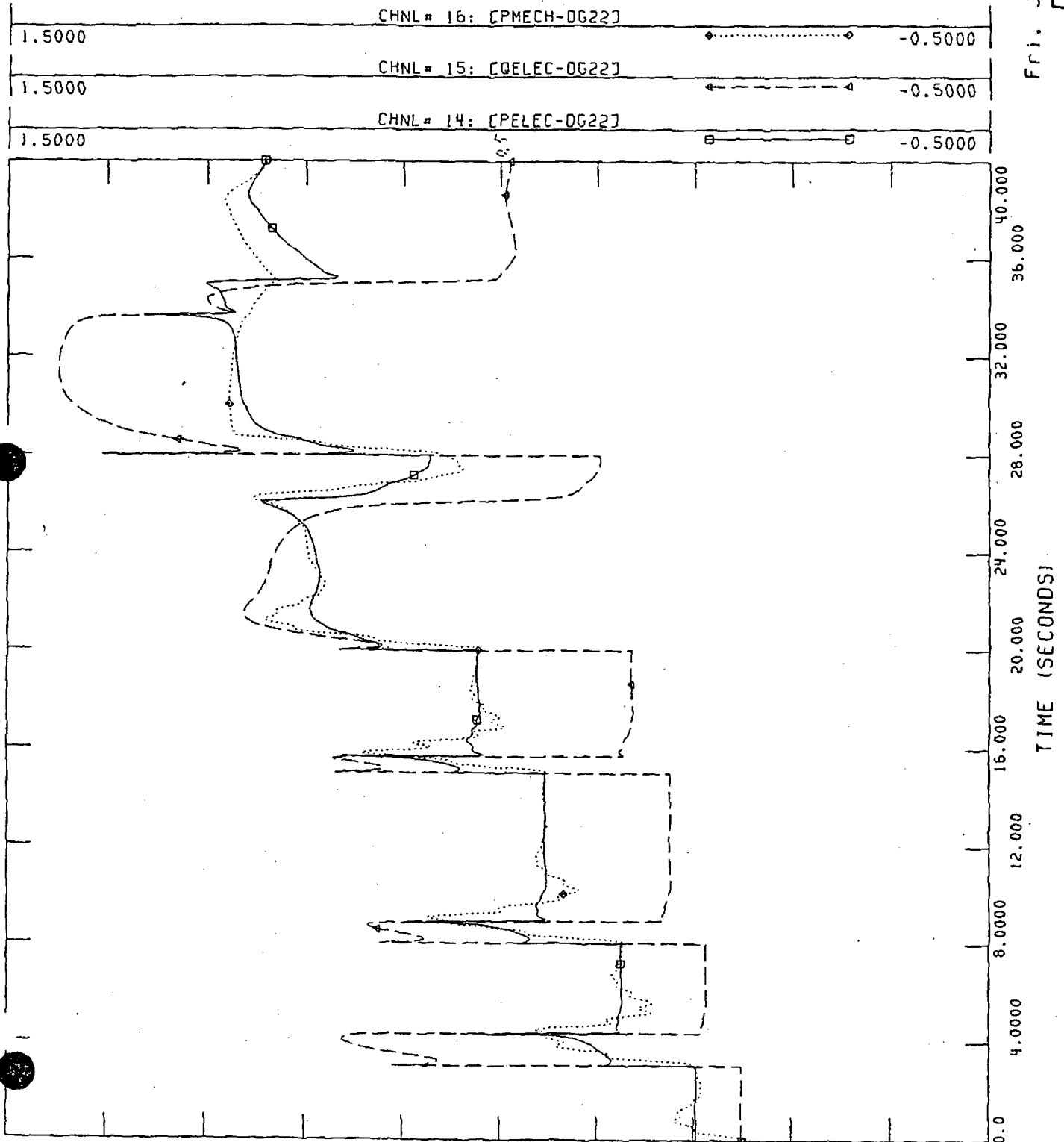
DIESEL GENERATOR #22 BUSES 2A & 3A

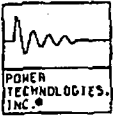
LOADING SEQUENCE FROM 1 TO 40 SECONDS

SEQUENCE: S122 ON-AH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON

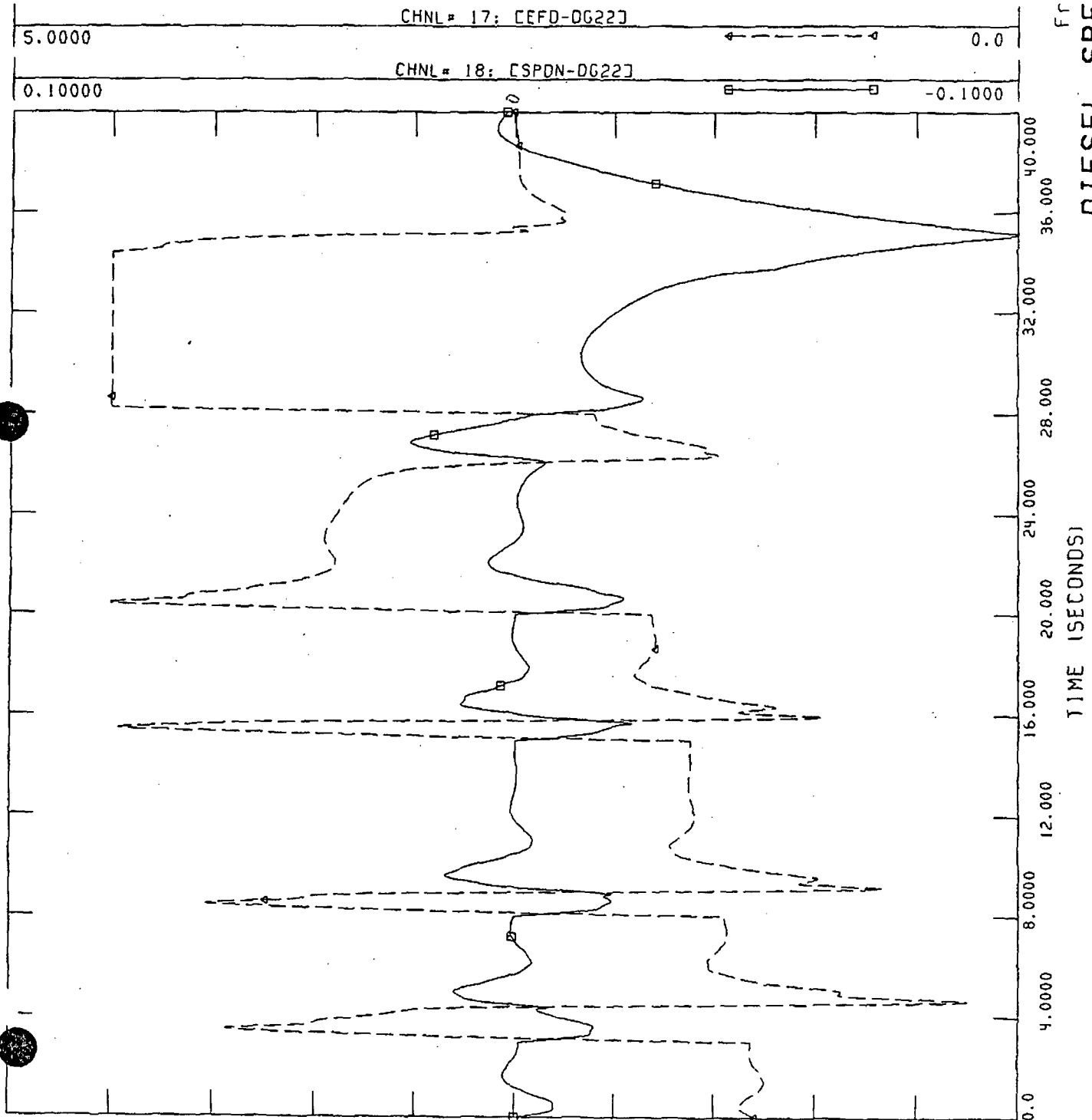
FILE: c:\psse24w\coned\dynam\case15.out

Fri. Jan 16 1998 9:5
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON
FILE: c:\psse24w\coned\dynam\case15.out



Fri. Jan 16 1998 9:58

R03CS15. IDV

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,SNPCS15.SNP
LOFL
CASE,DG22CON.SAV
J
R.
STRT
CASE15.OUT

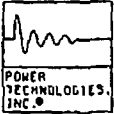
RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 31 TO 0.206 MW
RUN TO 3 SECONDS PRINT 0 PLOT 3
SET CON 43 TO 0.347
RUN TO 8 SECONDS PRINT 0 PLOT 3
SET CON 108 TO 0.349
RUN TO 15 SECONDS PRINT 0 PLOT 3
SET CON 82 TO 0.321
RUN TO 20 SECONDS PRINT 0 PLOT 3
SET CON 69 TO 0.319
RUN TO 28 SECONDS PRINT 0 PLOT 3
SET CON 56 TO 0.319
RUN TO 28 SECONDS PRINT 0 PLOT 3
SET CON 121 TO 0.364
RUN TO 40 SECONDS PRINT 0 PLOT 3
PASS
F
E.

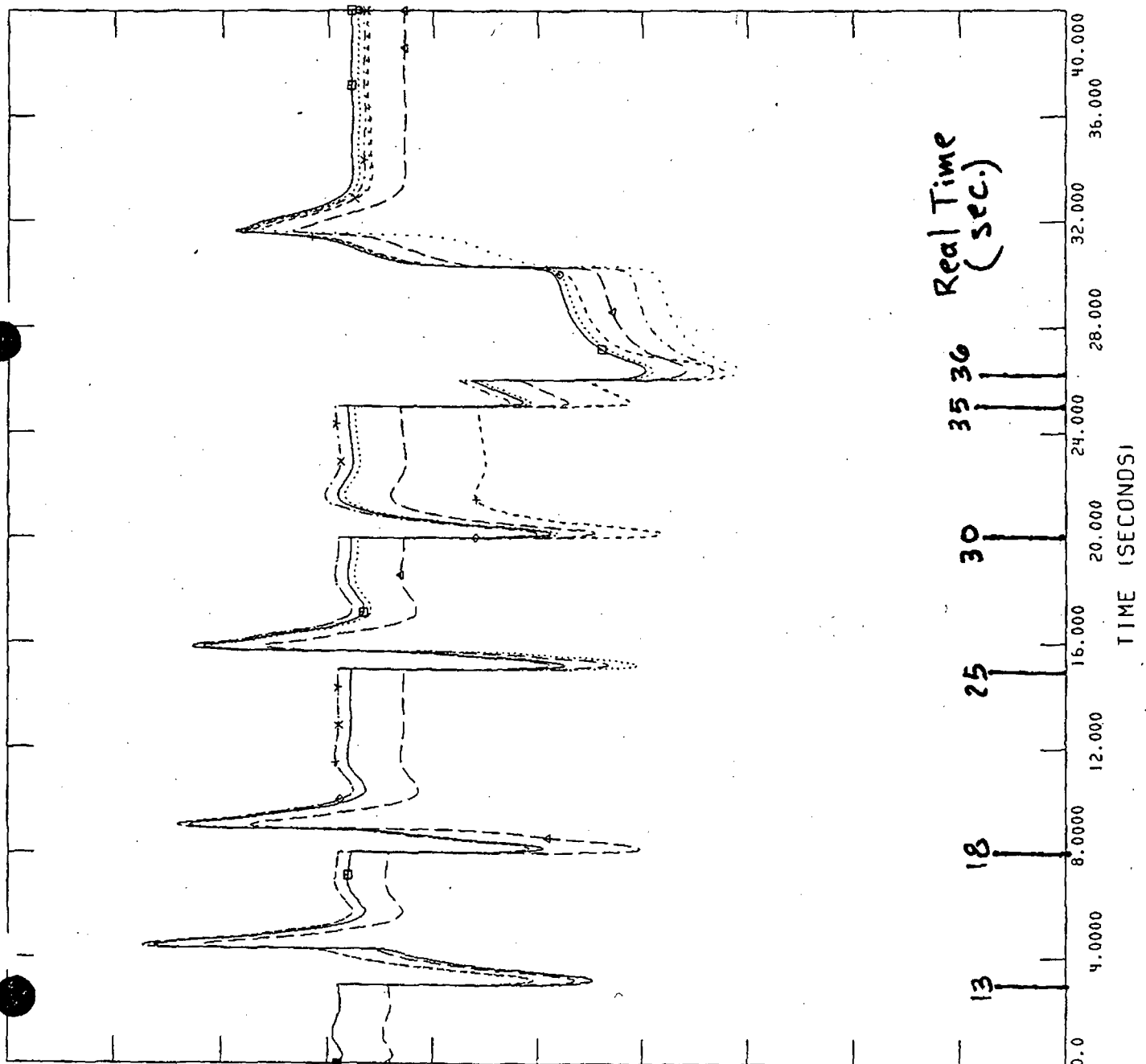
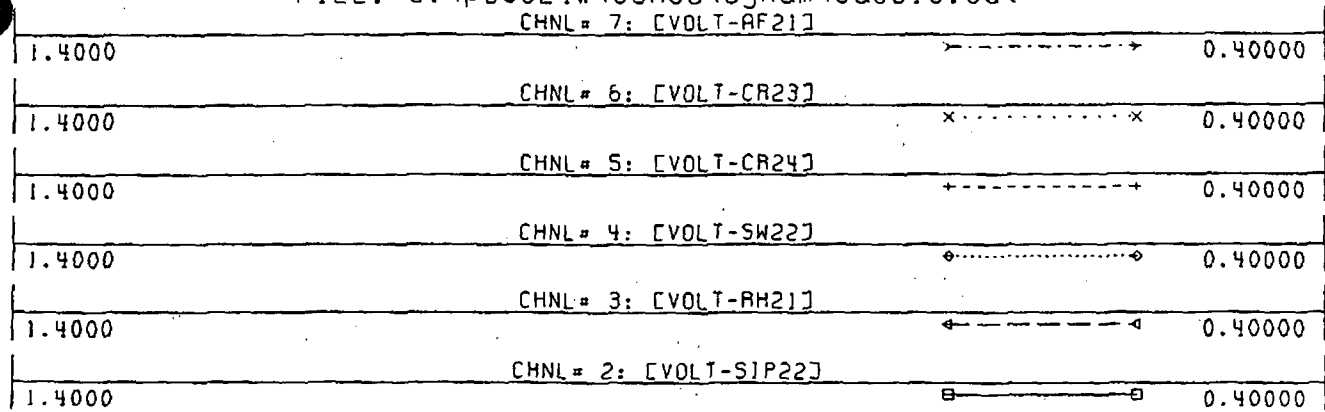
/10.0 SEC MCC26C @206 KW
/13.0 SEC SI22 ON
/18.0 SEC RH21 ON
/25.0 SEC SW22 ON
/30.0 SEC CR24 ON
/35.0 SEC CR23 ON
/40.0 SEC AF21 ON

ATTACHMENT XVI

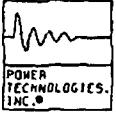
**DIESEL-GENERATOR 22 - INJECTION (CR23 AND AF21
ONE SECOND APART)**



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON
FILE: c:\psse24w\coned\dynam\case16.out

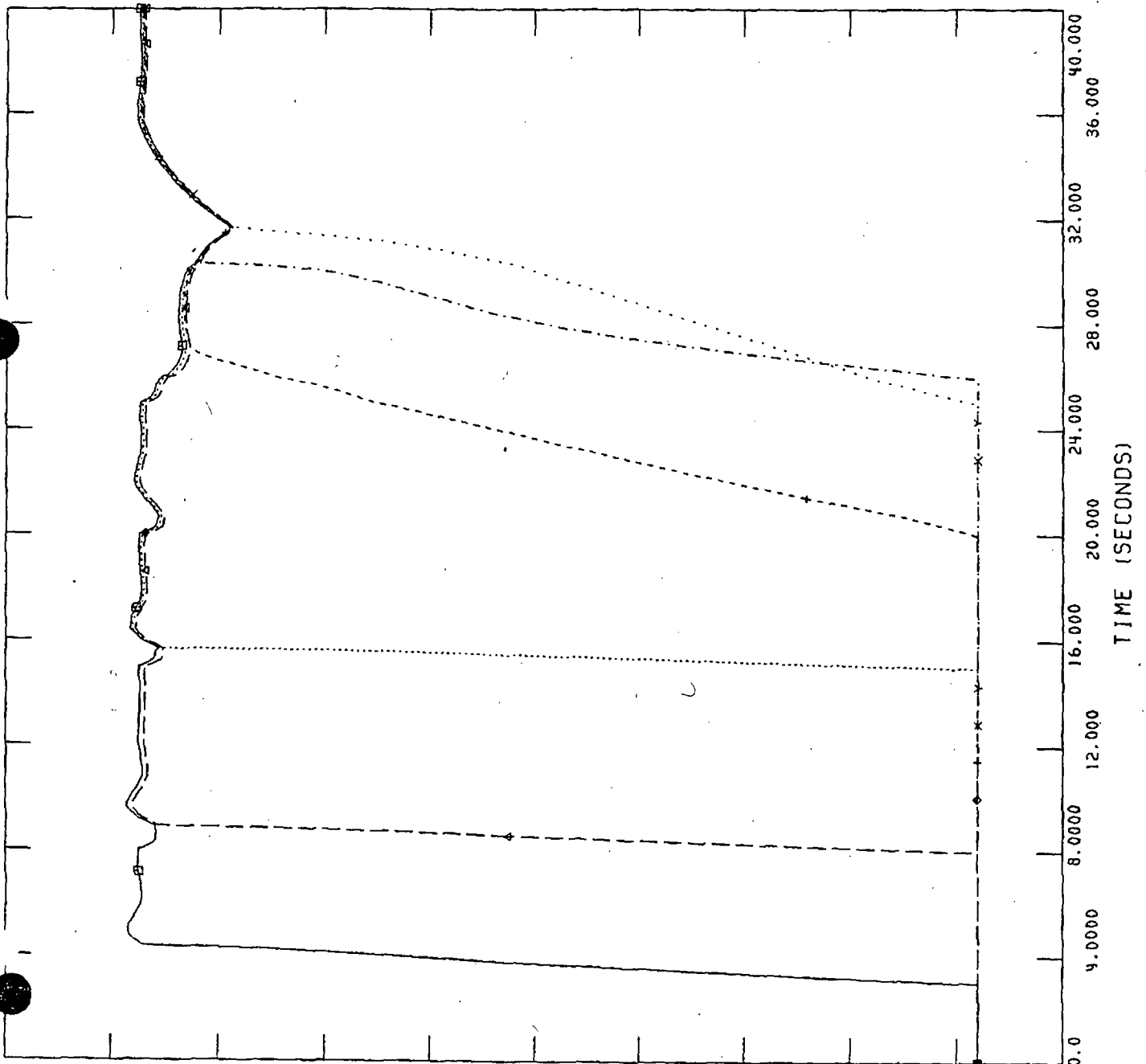


Fri, Jan 16 1998 10:35
MOTOR VOLTAGES

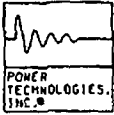


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON
FILE: c:\psse24w\coned\dynam\case16.out

0.15000	CHNL# 13: [SPDN-AF21]	-1.100
0.15000	CHNL# 12: [SPDN-CR23]	-1.100
0.15000	CHNL# 11: [SPDN-CR24]	-1.100
0.15000	CHNL# 10: [SPDN-SW22]	-1.100
0.15000	CHNL# 9: [SPDN-RH21]	-1.100
0.15000	CHNL# 8: [SPDN-S1P22]	-1.100



Fri. Jan 16 1998 10:3
MOTOR SPEED



INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)

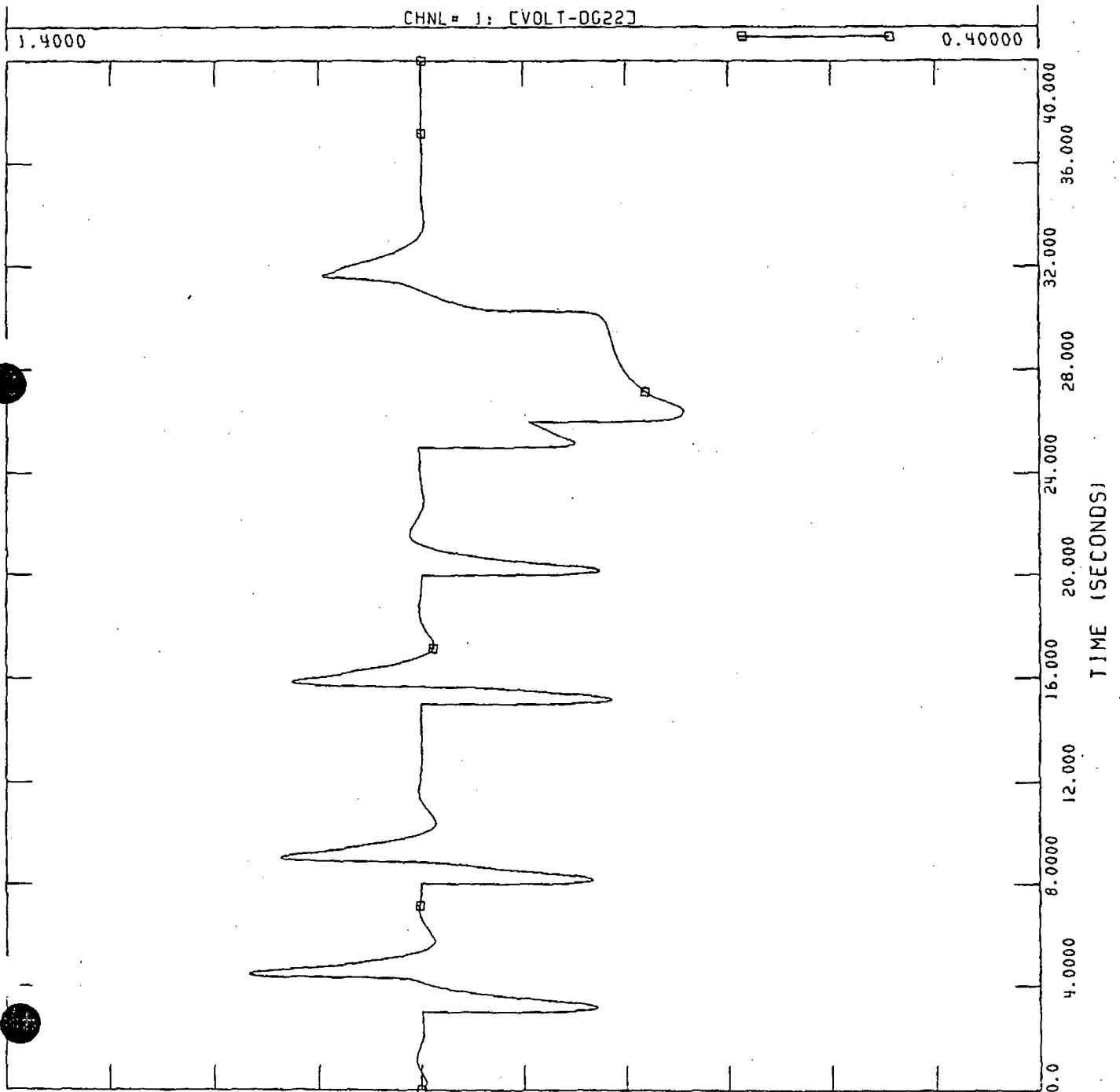
DIESEL GENERATOR #22 BUSES 2A & 3A

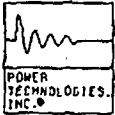
LOADING SEQUENCE FROM 1 TO 40 SECONDS

SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-RF21 ON

FILE: c:\psse24w\coned\dynam\case16.out

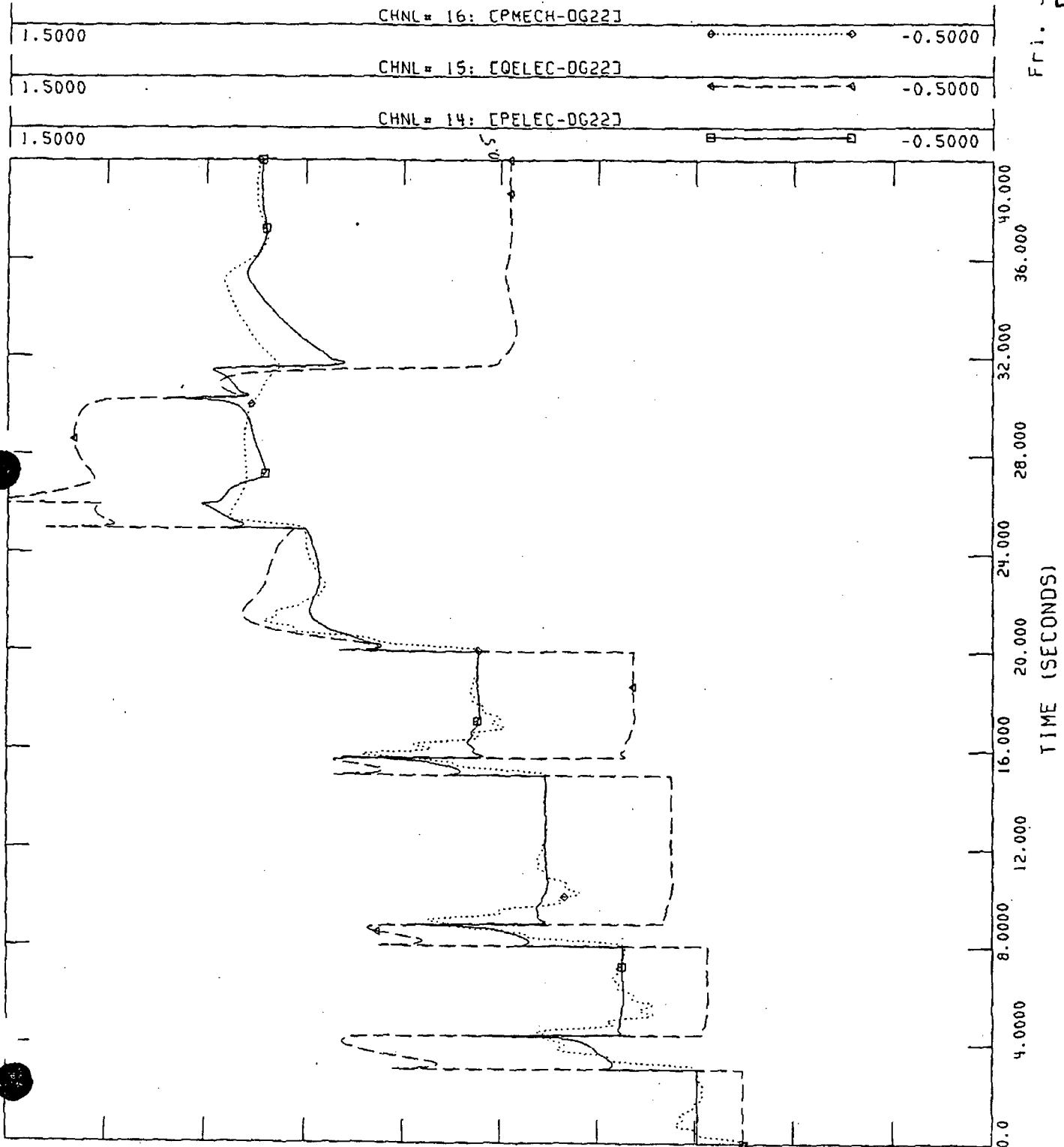
Fri. Jan 16 1998 10:31
DIESEL VOLTS

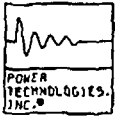




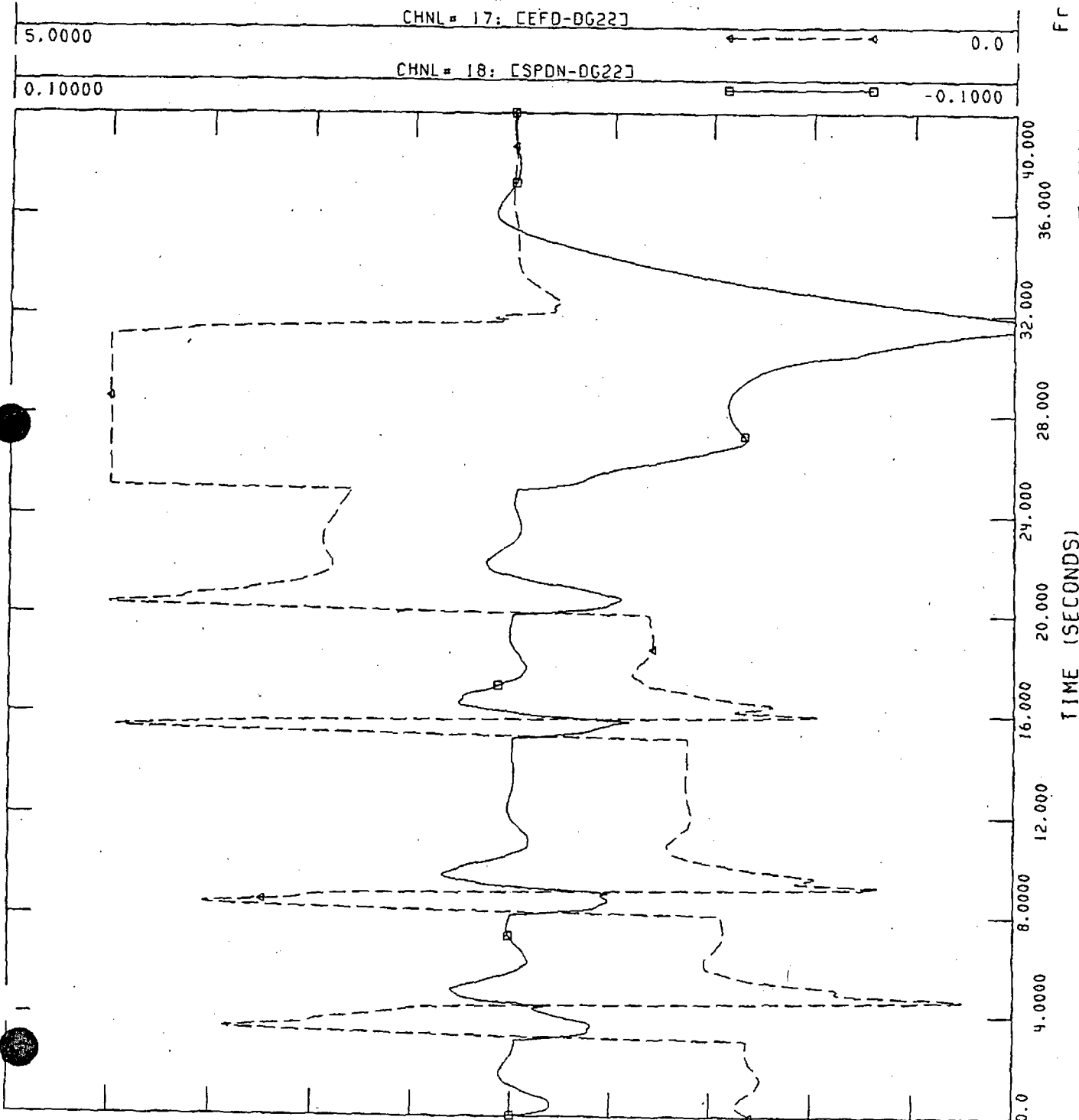
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON
FILE: c:\psse24w\coned\dynam\case16.out

Fri. Jan 16 1998 10:3
DIESEL POWER





INDIAN POINT 2 DIESEL GENERATOR STUDY (LF22)
DIESEL GENERATOR #22 BUSES 2A & 3A
LOADING SEQUENCE FROM 1 TO 40 SECONDS
SEQUENCE: S122 ON-RH21 ON-SW22 ON-CR24 ON-CR23 ON-AF21 ON
FILE: c:\psse24w\coned\dynam\case16.out



Fri. Jan 16 1998 10:38
DIESEL SPEED & FLD VOLTS

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
 RSTR,SNPCS16.SNP
 LOFL
 CASE,DG22CON.SAV
 F
 h
 STRT
 CASE16.OUT

RUN
 0 30 3
 PSAS
 1

CHANGE MWP LOAD BUS 31 TO 0.206 MW	/10.0 SEC	MCC26C @206 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3		
SET CON 43 TO 0.347	/13.0 SEC	SI22 ON
RUN TO 8 SECONDS PRINT 0 PLOT 3		
SET CON 108 TO 0.349	/18.0 SEC	RH21 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3		
SET CON 82 TO 0.321	/25.0 SEC	SW22 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3		
SET CON 69 TO 0.319	/30.0 SEC	CR24 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3		
SET CON 56 TO 0.319	/35.0 SEC	CR23 ON
RUN TO 26 SECONDS PRINT 0 PLOT 3		
SET CON 121 TO 0.364	/40.0 SEC	AF21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3		
PASS		
F		
E		

SVP-PSS/E-24

REVISION 0
August 1998

ATTACHMENT XVII

SVP - SOFTWARE VALIDATION PLAN

POWER SYSTEM SIMULATOR FOR ENGINEERING (PSS/E) (SELECTED MODULES)

VERSION 24

POWER TECHNOLOGIES INCORPORATED

Prepared By: IC. T. M. Swe. 8/20/98
K T Swe

Received By: I Hassan 8/18/98
I Hassan

Approved By: R Weronick 8/25/98
R Weronick

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1.0 PURPOSE

To validate selected modules of the program entitled "Power System Simulator for Engineering Version 24" (PSS/E) in accordance with the PSS/E Software Quality Assurance Plan (SQAP) [1] and the RNI Procedure CSD-0357, Software Documentation. PSS/E is a Power Technologies Incorporated (PTI) product and is considered Supplier Controlled Software (SCS).

1.1 OBJECTIVE

This test plan outlines the approach to verify the selected modules of the PSS/E Version 24 Computer Program. Version 21 of PSS/E, which ran under the DOS operating system, was previously verified. Version 24 runs under the Windows 95 operating system. The main difference between the two versions is the operating system the program runs under, i.e., DOS vs. Windows 95. This validation is based on a comparison of the Windows 95 version and the DOS version which was previously validated.

1.2 PROGRAM OVERVIEW

PSS/E Version 24 is a microcomputer program designed for use on IBM 386 class and above computers running under the MS Windows 95 operating system. PSS/E is used for analysis of electrical power systems to simulate actual operating conditions. PSS/E generates output files in the form of plots and tabulations.

2.0 REFERENCES

- [1] SQAP PSS/E Software Quality Assurance Plan.
- [2] Power Technologies, Inc., PSS/E-21 Program Operation Manual, Volumes I and II.
- [3] Power Technologies, Inc., PSS/E-21 Program Application Guide, Volumes I and II.
- [4] Power Technologies, Inc., Operation of PSS/E on the 80386 or 80486 PC.

3.0 ACRONYMS

RE&C -	Raytheon Engineers and Constructors
SQAP -	Software Quality Assurance Plan
SVP -	Software Validation Plan
SVR -	Software Validation Report
PTI -	Power Technologies, Incorporated
PSS/E -	Power System Simulator for Engineering

4.0 TEST OBJECTIVE

The test objective is to verify that Version 24 of PSS/E performs the simulation correctly by comparing its output to the output of Version 21 which was previously validated.

5.0 TEST REQUIREMENT

The major requirement associated with the PSS/E program is to read data from an input file, perform simulation and generate output files. The output file contents generated must be in conformance to data generated by another source. For this validation, comparison to a previously validated version will be used. The output results generated by Versions 21 and 24 of PSS/E must be identified. If they are not, an explanation must be provided justifying the differences. Both of the tabular and plot output files will be compared.

6.0 TEST CASE

Three input files are prepared in the format of both versions. The three test sets selected for the validation are:

- starting of 400 hp, 440 V motor (SIP 21) from offsite power
- safeguard test using the generator and the associated controls
- running IMD program to determine motor equivalent circuit

A simulation of the three test sets shall be performed using Versions 21 and 24 of PSS/E and printout shall be obtained for the output files. The output files shall be compared to verify that there are no differences between them. Plot files will be generated and compared.

7.0 TEST IMPLEMENTATION PLAN

To validate the applicable modules of the PSS/E program, an automatic comparison of the program's output files will be performed; an exact match is expected. If there are any differences, the validator shall document and explain the differences. Also, the plot files from the two versions will be overlaid. If the plots lie on top of each other, the plot files are considered identical.

8.0 ACCEPTANCE CRITERIA

The output data from both PSS/E versions in tabular and plot forms shall be identical. If there are differences, an explanation such as round off error shall be provided. Floating points round off errors should be less than 0.02%.

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AUGUST 1998

ATTACHMENT XVIII

SVR - SOFTWARE VALIDATION REPORT

POWER SYSTEM SIMULATOR FOR ENGINEERING (PSS/E)

(SELECTED MODULES)
VERSION 24

POWER TECHNOLOGIES INCORPORATED

Prepared By: KT Swe / JH 8/17/98

Reviewed By: J. Hassan 8/18/98

Approved By: Peronick 8/25/98

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AUGUST 1998

1.0 PURPOSE

To verify selected modules of the program entitled "Power System Simulator for Engineering Version 24" (PSS/E), in accordance with the PSS/E Software Validation Plan (SVP) [1]. PSS/E is a Power Technologies Incorporated (PTI) product and is considered Supplier-Controlled Software (SCS). It is a commercial grade package of programs for studies of power system transmission network and generation performance in both steady state and dynamic conditions. Consolidated Edison has contracted with Raytheon Engineers & Constructors (RE&C) to utilize the dynamic simulation aspect of the PSS/E software programs in the IP2 EDG Transient Loading Analysis. This is a Level 2 software since it will be used to perform calculation for safety related systems. The report documents the validation test results and provides the basis for qualification of selected models of the programs.

1.1 OBJECTIVE

The objective of this report is to present the results generate by PSS/E Version 24 in accordance with the PSS/E Software Validation Plan (SVP) [1]. The results are compared with the results generated by PSS/E Version 21. Selected modules of PSS/E Version 21 were previously validated [2] and accepted for nuclear safety related studies.

1.2 PROGRAM OVERVIEW

PSS/E is a package of programs of studies for power system transmission network and generation performance in both steady state and dynamic conditions. PSS/E handles power flow, fault analysis, network equivalent construction and dynamic simulation. PSS/E has a modular organization with all program activities operating from the same data set.

The user provides input data pertaining to positive-negative-zero sequence and dynamics representation of the user's power system into the working data base. The functions of PSS/E are called activities. Each activity performs a self contained and distinct operation on the working file. By producing the requisite equipment models and input data and utilizing program activities in an appropriate sequence, a user can solve a wide range of problems pertaining to load flow, stability, fault and dynamic simulation analyses.

The initial output files generated by the PSS/E programs are not in ASCII format. PSSPLT program is used to convert the PSS/E output files to tabulated ASCII files and to plot graphs.

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Program activities associated with the dynamic simulation aspect of PSS/E for selected equipment (namely, salient pole synchronous machine model GENSAL, induction machine CMOTOR, DEGOV type governor, voltage regulator type EXST2A and motor control center static load) are covered by the is SVR.

The same PSS/E software program is supported on many computer systems, e.g. IBM RISC system/6000, DEC VAX, SUN, IBM compatible PC, PRIME, etc. This validation pertains to an installation on an IBM compatible PC System, operating in Microsoft DOS environment.

2.0 REFERENCES

[1] SVP - Software Validation Plan for PSS/E Version 24

[2] SVR - Software Validation Report for PSS/E Version 21 for New York Power Authority

3.0 ACRONYMS

PTI - Power Technologies, Incorporated
PSS/E - Power System Simulator for Engineering
RE&C - Raytheon Engineers & Constructors
SVP - Software Validation Plan
SVR - Software Validation Report
SCS - Supplier-Controlled Software
V&V - Verification and Validation

4.0 GENERAL

For a given equipment, PSS/E programs allow use of one of several models (from PSS/E program library) for simulation of that equipment. The accuracy and validity of the study depend on the use of the correct simulation model in the PSS/E programs for any given equipment. Therefore, for studies of a given system, it is necessary to represent all of the equipment of that system by their correct simulation model. Once a correct model is selected to represent a given equipment, and appropriate inputs for the selected models are provided, the PSS/E programs provide output data based on the program activities selected by the user in performing a given study.

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For PSS/E Version 21 Software, field tests were specially made to validate the use of appropriate models for induction motors, synchronous generator, voltage regulator, governor and MCC static load in the dynamic analysis study. PSS/E Version 21 simulation results were compared to actual field test data. The results met acceptance criteria and the program was qualified to be used for nuclear safety related studies. See Reference 2 for the complete SVR report.

5.0 ACCEPTANCE CRITERIA

The output from PSS/E Versions 21 and 24 shall be identical, except floating points round off errors should be less than 0.02% as stated in SVP.

6.0 TEST CASES & IMPLEMENTATION

Three test cases as stated in SVP [1] were prepared and simulated using PSS/E Version 21 and Version 24. The input files of the cases are included in Attachment D. The three test cases are listed below:

1. Starting of 400 hp, 440 V motor (SIP 21) from offsite power
2. Safeguard test using the generator and the associated controls
3. Use IMD program to determine SIP21 motor equivalent circuit

The results of the simulations - output files, were input into PSSPLT plotting subprogram and ASCII files (Attachment A to C) were created for comparison between Version 21 and 24. For quantitative comparison, ASCII files were then imported to Microsoft Excel Spread Sheets. Percentage Discrepancy (Delta %) was calculated and tabulated in the spread sheets in Table 1 to 3. Delta % is equal to $[(\text{Result from Version 21} - \text{Result from Version 24}) * 100 / \text{Result from Version 21}]$.

7.0 TEST RESULTS

Simulation Results from Version 21 & Version 24 are shown in Attachment A to C. The plots were identical.

Tabular form of the validation results were shown in Table I to III. The largest discrepancy (Delta%) is less than 0.02% due to floating point round off error.

SVR-PSS/E-24

REVISION 0
AUGUST 1998

8.0 CONCLUSION

PSS/E Version 21 [2] was previously validated for the following selected models:

1. Induction motor model CMOTOR
2. Salient pole synchronous generator model GENSAL
3. Type EXST2A voltage regulator
4. Type DEGOV governor
5. MCC static load
6. IMD program which derives values for induction motor equivalent circuit parameters.

Results of the three test cases from PSS/E Version 21 and Version 24 provided identical results and meet the established acceptance criteria in Section 5.0. It can be concluded that Version 24 is equivalent to Version 21, the same selected models are validated and qualify to be used for nuclear safety related studies.

TABLE I
IMD PROGRAM VALIDATION RESULT
FOR PSS/E VERSION 21 VS 24

PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
EQUIVALENT CKT PARAMETER: ETERM TYPE RA LA LM R1 L1 R2 L2
1.000 2 0.0120 0.0750 4.0000 0.0600 0.0800 0.0090 0.0680

SLIP	CURRENT			TORQUE			PWR FACT		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1	5.4377	5.4377	0.000	0.9409	0.9409	0.000	0.2383	0.2383	0.000
0.98	5.4226	5.4226	0.000	0.9395	0.9395	0.000	0.2383	0.2383	0.000
0.955	5.4036	5.4036	0.000	0.9375	0.9375	0.000	0.2383	0.2383	0.000
0.93	5.3843	5.3843	0.000	0.9352	0.9352	0.000	0.2383	0.2383	0.000
0.905	5.3648	5.3648	0.000	0.9326	0.9326	0.000	0.2382	0.2382	0.000
0.88	5.3451	5.3451	0.000	0.9296	0.9296	0.000	0.2381	0.2381	0.000
0.855	5.3252	5.3252	0.000	0.9263	0.9263	0.000	0.2379	0.2379	0.000
0.83	5.3052	5.3052	0.000	0.9227	0.9227	0.000	0.2376	0.2376	0.000
0.805	5.2851	5.2851	0.000	0.9188	0.9188	0.000	0.2373	0.2373	0.000
0.78	5.2649	5.2649	0.000	0.9146	0.9146	0.000	0.2369	0.2369	0.000
0.755	5.2445	5.2445	0.000	0.9102	0.9102	0.000	0.2365	0.2365	0.000
0.73	5.2241	5.2241	0.000	0.9055	0.9055	0.000	0.236	0.236	0.000
0.705	5.2037	5.2037	0.000	0.9006	0.9006	0.000	0.2355	0.2355	0.000
0.68	5.1832	5.1832	0.000	0.8955	0.8955	0.000	0.235	0.235	0.000
0.655	5.1628	5.1628	0.000	0.8904	0.8904	0.000	0.2344	0.2344	0.000
0.63	5.1424	5.1424	0.000	0.8852	0.8852	0.000	0.2338	0.2338	0.000
0.605	5.1221	5.1221	0.000	0.88	0.88	0.000	0.2333	0.2333	0.000
0.58	5.1019	5.1019	0.000	0.875	0.875	0.000	0.2327	0.2327	0.000
0.555	5.0818	5.0818	0.000	0.8703	0.8703	0.000	0.2322	0.2322	0.000
0.53	5.0619	5.0619	0.000	0.866	0.866	0.000	0.2318	0.2318	0.000
0.505	5.0421	5.0421	0.000	0.8623	0.8623	0.000	0.2315	0.2315	0.000
0.48	5.0225	5.0225	0.000	0.8593	0.8593	0.000	0.2314	0.2314	0.000
0.455	5.003	5.003	0.000	0.8575	0.8575	0.000	0.2314	0.2314	0.000
0.43	4.9837	4.9837	0.000	0.857	0.857	0.000	0.2318	0.2318	0.000
0.405	4.9644	4.9644	0.000	0.8583	0.8583	0.000	0.2325	0.2325	0.000
0.38	4.9452	4.9452	0.000	0.8618	0.8618	0.000	0.2336	0.2336	0.000
0.355	4.9259	4.9259	0.000	0.8683	0.8683	0.000	0.2354	0.2354	0.000
0.33	4.9064	4.9064	0.000	0.8784	0.8784	0.000	0.2379	0.2379	0.000
0.305	4.8863	4.8863	0.000	0.8933	0.8933	0.000	0.2414	0.2414	0.000
0.28	4.8652	4.8652	0.000	0.9142	0.9142	0.000	0.2463	0.2463	0.000
0.255	4.8426	4.8426	0.000	0.9431	0.9431	0.000	0.2529	0.2529	0.000
0.23	4.8174	4.8174	0.000	0.9825	0.9825	0.000	0.2617	0.2617	0.000
0.205	4.7881	4.7881	0.000	1.0358	1.0358	0.000	0.2738	0.2738	0.000
0.18	4.7518	4.7518	0.000	1.1081	1.1081	0.000	0.2902	0.2902	0.000
0.155	4.7039	4.7039	0.000	1.2069	1.2069	0.000	0.313	0.313	0.000
0.13	4.6351	4.6351	0.000	1.3431	1.3431	0.000	0.3454	0.3454	0.000
0.105	4.5262	4.5262	0.000	1.5323	1.5323	0.000	0.3929	0.3929	0.000
0.08	4.3324	4.3324	0.000	1.7913	1.7913	0.000	0.4654	0.4654	0.000
0.055	3.933	3.933	0.000	2.1011	2.1011	0.000	0.5814	0.5814	0.000
0.03	2.9689	2.9689	0.000	2.1593	2.1593	0.000	0.7629	0.7629	0.000
0.005	0.6817	0.6817	0.000	0.5964	0.5964	0.000	0.883	0.883	0.000
0.000	0.2454	0.2454	0.000	0	0	0.000	0.0029	0.0029	0.000
Max Delta (%)			0.000			0.000			0.000

TABLE I (Cont'd)
IMD PROGRAM VALIDATION RESULT
FOR PSS/E VERSION 21 VS 24

PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
EQUIVALENT CKT PARAMETER: ETERM TYPE RA LA LM R1 L1 R2 L2
1.000 2 0.0120 0.0750 4.0000 0.0600 0.0800 0.0090 0.0680

SLIP	Y-MOTOR (Real)			Y-MOTOR (Imaginary)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1	1.2957	1.2957	0.000	-5.2811	-5.2811	0.000
0.98	1.2924	1.2924	0.000	-5.2664	-5.2664	0.000
0.955	1.2879	1.2879	0.000	-5.2478	-5.2478	0.000
0.93	1.2831	1.2831	0.000	-5.2292	-5.2292	0.000
0.905	1.278	1.278	0.000	-5.2104	-5.2104	0.000
0.88	1.2725	1.2725	0.000	-5.1914	-5.1914	0.000
0.855	1.2666	1.2666	0.000	-5.1724	-5.1724	0.000
0.83	1.2605	1.2605	0.000	-5.1533	-5.1533	0.000
0.805	1.254	1.254	0.000	-5.1342	-5.1342	0.000
0.78	1.2472	1.2472	0.000	-5.115	-5.115	0.000
0.755	1.2402	1.2402	0.000	-5.0958	-5.0958	0.000
0.73	1.233	1.233	0.000	-5.0765	-5.0765	0.000
0.705	1.2255	1.2255	0.000	-5.0573	-5.0573	0.000
0.68	1.2179	1.2179	0.000	-5.0381	-5.0381	0.000
0.655	1.2102	1.2102	0.000	-5.019	-5.019	0.000
0.63	1.2025	1.2025	0.000	-4.9999	-4.9999	0.000
0.605	1.1949	1.1949	0.000	-4.9808	-4.9808	0.000
0.58	1.1874	1.1874	0.000	-4.9618	-4.9618	0.000
0.555	1.1802	1.1802	0.000	-4.9429	-4.9429	0.000
0.53	1.1735	1.1735	0.000	-4.924	-4.924	0.000
0.505	1.1673	1.1673	0.000	-4.9051	-4.9051	0.000
0.48	1.162	1.162	0.000	-4.8862	-4.8862	0.000
0.455	1.1578	1.1578	0.000	-4.8672	-4.8672	0.000
0.43	1.155	1.155	0.000	-4.848	-4.848	0.000
0.405	1.154	1.154	0.000	-4.8284	-4.8284	0.000
0.38	1.1553	1.1553	0.000	-4.8084	-4.8084	0.000
0.355	1.1594	1.1594	0.000	-4.7875	-4.7875	0.000
0.33	1.1673	1.1673	0.000	-4.7655	-4.7655	0.000
0.305	1.1798	1.1798	0.000	-4.7417	-4.7417	0.000
0.28	1.1983	1.1983	0.000	-4.7153	-4.7153	0.000
0.255	1.2245	1.2245	0.000	-4.6852	-4.6852	0.000
0.23	1.2609	1.2609	0.000	-4.6495	-4.6495	0.000
0.205	1.3109	1.3109	0.000	-4.6051	-4.6051	0.000
0.18	1.3791	1.3791	0.000	-4.5473	-4.5473	0.000
0.155	1.4724	1.4724	0.000	-4.4675	-4.4675	0.000
0.13	1.6009	1.6009	0.000	-4.3499	-4.3499	0.000
0.105	1.7781	1.7781	0.000	-4.1623	-4.1623	0.000
0.08	2.0165	2.0165	0.000	-3.8345	-3.8345	0.000
0.055	2.2867	2.2867	0.000	-3.1999	-3.1999	0.000
0.03	2.265	2.265	0.000	-1.9193	-1.9193	0.000
0.005	0.602	0.602	0.000	-0.32	-0.32	0.000
0.000	0.0007	0.0007	0.000	-0.2454	-0.2454	0.000
Max Delta (%)			0.000			0.000

TABLE II

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36)

Time (second)	Source Voltage (PU)			MBUS-VLT (PU)			MTRTM-V (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
0.0083	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.0333	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.0583	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.0833	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.1083	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.1333	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.1583	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.1833	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.2083	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.2333	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.2583	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.2833	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.3083	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.3333	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.3583	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.3833	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.4083	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.4333	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.4583	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.4833	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.5	0.97819	0.97819	0.000	0.97825	0.97825	0.000	1.0674	1.0674	0.000
0.5	0.97662	0.97662	0.000	0.92167	0.92167	0.000	0.86409	0.86409	0.000
0.525	0.97662	0.97662	0.000	0.92183	0.92183	0.000	0.86467	0.86467	0.000
0.55	0.97663	0.97663	0.000	0.92199	0.92199	0.000	0.86526	0.86526	0.000
0.575	0.97663	0.97663	0.000	0.92216	0.92216	0.000	0.86586	0.86586	0.000
0.6	0.97664	0.97664	0.000	0.92232	0.92232	0.000	0.86647	0.86647	0.000
0.625	0.97664	0.97664	0.000	0.92249	0.92249	0.000	0.86708	0.86708	0.000
0.65	0.97665	0.97665	0.000	0.92266	0.92266	0.000	0.8677	0.8677	0.000
0.675	0.97665	0.97665	0.000	0.92282	0.92282	0.000	0.86832	0.86832	0.000
0.7	0.97666	0.97666	0.000	0.92299	0.92299	0.000	0.86893	0.86893	0.000
0.725	0.97666	0.97666	0.000	0.92315	0.92315	0.000	0.86955	0.86955	0.000
0.75	0.97666	0.97666	0.000	0.92332	0.92332	0.000	0.87016	0.87016	0.000
0.775	0.97667	0.97667	0.000	0.92348	0.92348	0.000	0.87077	0.87077	0.000
0.8	0.97667	0.97667	0.000	0.92364	0.92364	0.000	0.87137	0.87137	0.000
0.825	0.97668	0.97668	0.000	0.92379	0.92379	0.000	0.87196	0.87196	0.000
0.85	0.97668	0.97668	0.000	0.92395	0.92395	0.000	0.87254	0.87254	0.000
0.875	0.97668	0.97668	0.000	0.9241	0.9241	0.000	0.87311	0.87311	0.000
0.9	0.97669	0.97669	0.000	0.92425	0.92425	0.000	0.87367	0.87367	0.000
0.925	0.97669	0.97669	0.000	0.92439	0.92439	0.000	0.87422	0.87422	0.000
0.95	0.9767	0.9767	0.000	0.92453	0.92453	0.000	0.87475	0.87475	0.000
0.975	0.9767	0.9767	0.000	0.92467	0.92467	0.000	0.87527	0.87527	0.000
1	0.9767	0.9767	0.000	0.92481	0.92481	0.000	0.87578	0.87578	0.000
1.025	0.97671	0.97671	0.000	0.92494	0.92494	0.000	0.87626	0.87626	0.000
1.05	0.97671	0.97671	0.000	0.92506	0.92506	0.000	0.87673	0.87673	0.000
1.075	0.97671	0.97671	0.000	0.92519	0.92519	0.000	0.87719	0.87719	0.000
1.1	0.97672	0.97672	0.000	0.92531	0.92531	0.000	0.87762	0.87762	0.000
1.125	0.97672	0.97672	0.000	0.92543	0.92543	0.000	0.87805	0.87805	0.000
1.15	0.97672	0.97672	0.000	0.92555	0.92555	0.000	0.87845	0.87845	0.000
1.175	0.97673	0.97673	0.000	0.92566	0.92566	0.000	0.87884	0.87884	0.000
1.2	0.97673	0.97673	0.000	0.92578	0.92578	0.000	0.87921	0.87921	0.000
1.225	0.97673	0.97673	0.000	0.92589	0.92589	0.000	0.87957	0.87957	0.000
1.25	0.97674	0.97674	0.000	0.926	0.926	0.000	0.87992	0.87992	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36)

Time (second)	Source Voltage (PU)			MBUS-VLT (PU)			MTRTM-V (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1.275	0.97674	0.97674	0.000	0.92612	0.92612	0.000	0.88025	0.88025	0.000
1.3	0.97674	0.97674	0.000	0.92623	0.92623	0.000	0.88058	0.88058	0.000
1.325	0.97675	0.97675	0.000	0.92635	0.92635	0.000	0.88089	0.88089	0.000
1.35	0.97675	0.97675	0.000	0.92647	0.92647	0.000	0.8812	0.8812	0.000
1.375	0.97676	0.97676	0.000	0.9266	0.9266	0.000	0.8815	0.8815	0.000
1.4	0.97676	0.97676	0.000	0.92673	0.92673	0.000	0.8818	0.8818	0.000
1.425	0.97677	0.97677	0.000	0.92688	0.92688	0.000	0.88211	0.88211	0.000
1.45	0.97677	0.97677	0.000	0.92705	0.92705	0.000	0.88243	0.88243	0.000
1.475	0.97678	0.97678	0.000	0.92724	0.92724	0.000	0.88278	0.88278	0.000
1.5	0.97679	0.97679	0.000	0.92747	0.92747	0.000	0.88318	0.88318	0.000
1.525	0.9768	0.9768	0.000	0.92777	0.92777	0.000	0.88367	0.88367	0.000
1.55	0.97682	0.97682	0.000	0.92817	0.92817	0.000	0.88434	0.88434	0.000
1.575	0.97684	0.97684	0.000	0.92876	0.92876	0.000	0.8854	0.8854	0.000
1.6	0.97688	0.97688	0.000	0.9298	0.9298	0.000	0.88745	0.88745	0.000
1.625	0.97697	0.97697	0.000	0.93222	0.93222	0.000	0.89306	0.89306	0.000
1.65	0.97733	0.97733	0.000	0.94336	0.94336	0.000	0.92653	0.92653	0.000
1.675	0.97802	0.97802	0.000	0.96977	0.96977	0.000	1.0282	1.0282	0.000
1.7	0.97807	0.97807	0.000	0.97274	0.97274	0.000	1.0426	1.0426	0.000
1.725	0.97808	0.97808	0.000	0.97291	0.97291	0.000	1.0435	1.0435	0.000
1.75	0.97808	0.97808	0.000	0.97292	0.97292	0.000	1.0436	1.0436	0.000
1.775	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.8	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.825	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.85	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.875	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.9	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.925	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.95	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
1.975	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.025	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.05	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.075	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.1	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.125	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.15	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.175	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.2	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.225	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.25	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.275	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.3	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.325	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.35	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.375	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.4	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.425	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.45	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.475	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.5	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.525	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.55	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36)

Time (second)	Source Voltage (PU)			MBUS-VLT (PU)			MTRTM-V (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
2.575	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.6	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.625	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.65	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.675	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.7	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.725	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.75	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.775	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.8	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.825	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.85	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.875	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.9	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.925	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.95	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
2.975	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.025	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.05	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.075	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.1	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.125	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.15	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.175	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.2	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.225	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.25	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.275	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.3	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.325	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.35	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.375	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.4	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.425	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.45	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.475	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.5	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.525	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.55	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.575	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.6	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.625	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.65	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.675	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.7	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.725	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.75	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.775	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.8	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.825	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.85	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLTAGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36)

Time (second)	Source Voltage (PU)			MBUS-VLT (PU)			MTRTM-V (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
3.875	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.9	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.925	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.95	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
3.975	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.025	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.05	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.075	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.1	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.125	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.15	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.175	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.2	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.225	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.25	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.275	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.3	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.325	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.35	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.375	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.4	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.425	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.45	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.475	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.5	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.525	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.55	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.575	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.6	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.625	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.65	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.675	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.7	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.725	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.75	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.775	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.8	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.825	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.85	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.875	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.9	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.925	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.95	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
4.98	0.97808	0.97808	0.000	0.97293	0.97293	0.000	1.0436	1.0436	0.000
Max Delta (%)			0.000			0.000			0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998)

Time (second)	MTR SPEEDVTN (PU)			MTR-P POWER (PU)			MTR-Q POWER (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
0.0083	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.0333	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.0583	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.0833	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.1083	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.1333	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.1583	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.1833	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.2083	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.2333	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.2583	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.2833	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.3083	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.3333	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.3583	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.3833	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.4083	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.4333	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.4583	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.4833	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.5	-1	-1	0.000	0	0	0.000	0.0000	0.0000	0.000
0.5	-0.99152	-0.99152	0.000	0.30925	0.30925	0.000	1.2603	1.2603	0.000
0.525	-0.96611	-0.96611	0.000	0.30862	0.30862	0.000	1.2575	1.2575	0.000
0.55	-0.94076	-0.94076	0.000	0.30791	0.30791	0.000	1.2547	1.2547	0.000
0.575	-0.91551	-0.91551	0.000	0.30712	0.30712	0.000	1.2519	1.2519	0.000
0.6	-0.89039	-0.89039	0.000	0.30626	0.30626	0.000	1.2491	1.2491	0.000
0.625	-0.86543	-0.86543	0.000	0.30533	0.30533	0.000	1.2463	1.2463	0.000
0.65	-0.84066	-0.84066	0.000	0.30432	0.30432	0.000	1.2436	1.2436	0.000
0.675	-0.81612	-0.81612	0.000	0.30326	0.30326	0.000	1.2408	1.2408	0.000
0.7	-0.79183	-0.79183	0.000	0.30213	0.30213	0.000	1.2381	1.2381	0.000
0.725	-0.76782	-0.76782	0.000	0.30096	0.30096	0.000	1.2353	1.2353	0.000
0.75	-0.74413	-0.74413	0.000	0.29974	0.29974	0.000	1.2327	1.2327	0.000
0.775	-0.72076	-0.72076	0.000	0.2985	0.2985	0.000	1.2300	1.2300	0.000
0.8	-0.69775	-0.69775	0.000	0.29723	0.29723	0.000	1.2274	1.2274	0.000
0.825	-0.67511	-0.67511	0.000	0.29595	0.29595	0.000	1.2249	1.2249	0.000
0.85	-0.65287	-0.65287	0.000	0.29468	0.29468	0.000	1.2224	1.2224	0.000
0.875	-0.63102	-0.63102	0.000	0.29342	0.29342	0.000	1.2199	1.2199	0.000
0.9	-0.60959	-0.60959	0.000	0.2922	0.2922	0.000	1.2175	1.2175	0.000
0.925	-0.58859	-0.58859	0.000	0.29102	0.29102	0.000	1.2151	1.2151	0.000
0.95	-0.56801	-0.56801	0.000	0.2899	0.2899	0.000	1.2127	1.2127	0.000
0.975	-0.54787	-0.54787	0.000	0.28885	0.28885	0.000	1.2104	1.2104	0.000
1	-0.52816	-0.52816	0.000	0.28789	0.28789	0.000	1.2082	1.2082	0.000
1.025	-0.50888	-0.50888	0.000	0.28705	0.28705	0.000	1.2059	1.2059	0.000
1.05	-0.49002	-0.49002	0.000	0.28632	0.28632	0.000	1.2037	1.2037	0.000
1.075	-0.47158	-0.47158	0.000	0.28574	0.28574	0.000	1.2015	1.2015	0.000
1.1	-0.45354	-0.45354	0.000	0.28532	0.28532	0.000	1.1993	1.1993	0.000
1.125	-0.43589	-0.43589	0.000	0.28508	0.28508	0.000	1.1972	1.1972	0.000
1.15	-0.41861	-0.41861	0.000	0.28504	0.28504	0.000	1.1950	1.1950	0.000
1.175	-0.40169	-0.40169	0.000	0.28522	0.28522	0.000	1.1927	1.1927	0.000
1.2	-0.3851	-0.3851	0.000	0.28566	0.28566	0.000	1.1905	1.1905	0.000
1.225	-0.36881	-0.36881	0.000	0.28637	0.28637	0.000	1.1881	1.1881	0.000
1.25	-0.35279	-0.35279	0.000	0.2874	0.2874	0.000	1.1857	1.1857	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998)

Time (second)	MTR SPEEDVN (PU)			MTR-P POWER (PU)			MTR-Q POWER (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1.275	-0.33701	-0.33701	0.000	0.28878	0.28878	0.000	1.1832	1.1832	0.000
1.3	-0.32143	-0.32143	0.000	0.29056	0.29056	0.000	1.1805	1.1805	0.000
1.325	-0.306	-0.306	0.000	0.2928	0.2928	0.000	1.1777	1.1777	0.000
1.35	-0.29067	-0.29067	0.000	0.29558	0.29558	0.000	1.1746	1.1746	0.000
1.375	-0.27538	-0.27538	0.000	0.299	0.299	0.000	1.1712	1.1712	0.000
1.4	-0.26006	-0.26006	0.000	0.30319	0.30319	0.000	1.1674	1.1674	0.000
1.425	-0.24462	-0.24462	0.000	0.30832	0.30832	0.000	1.1631	1.1631	0.000
1.45	-0.22893	-0.22893	0.000	0.31466	0.31466	0.000	1.1581	1.1581	0.000
1.475	-0.21286	-0.21286	0.000	0.32256	0.32256	0.000	1.1522	1.1522	0.000
1.5	-0.1962	-0.1962	0.000	0.33259	0.33259	0.000	1.1448	1.1448	0.000
1.525	-0.17867	-0.17867	0.000	0.34566	0.34566	0.000	1.1354	1.1354	0.000
1.55	-0.15985	-0.15985	0.000	0.36335	0.36335	0.000	1.1225	1.1225	0.000
1.575	-0.13904	-0.13904	0.000	0.38873	0.38873	0.000	1.1033	1.1033	0.000
1.6	-0.11493	-0.11493	0.000	0.42866	0.42866	0.000	1.0707	1.0707	0.000
1.625	-8.46E-02	-8.46E-02	-0.001	0.5022	0.5022	0.000	0.9983	0.9983	0.001
1.65	-4.06E-02	-4.06E-02	-0.002	0.64956	0.64956	0.000	0.7051	0.7051	0.001
1.675	-8.12E-03	-8.12E-03	-0.001	0.32064	0.32064	0.000	0.1484	0.1484	0.000
1.7	-4.48E-03	-4.48E-03	0.000	0.18827	0.18827	0.000	0.1062	0.1062	0.000
1.725	-4.23E-03	-4.23E-03	0.000	0.17861	0.17861	0.000	0.1041	0.1041	0.000
1.75	-4.22E-03	-4.22E-03	0.000	0.17797	0.17797	0.000	0.1040	0.1040	0.000
1.775	-4.22E-03	-4.22E-03	0.000	0.17794	0.17794	0.000	0.1040	0.1040	0.000
1.8	-4.21E-03	-4.21E-03	-0.002	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.825	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.85	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.875	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.9	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.925	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.95	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
1.975	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.025	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.05	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.075	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.1	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.125	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.15	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.175	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.2	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.225	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.25	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.275	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.3	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.325	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.35	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.375	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.4	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.425	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.45	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.475	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.5	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.525	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.55	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998)

Time (second)	MTR SPEEDVTN (PU)			MTR-P POWER (PU)			MTR-Q POWER (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
2.575	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.6	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.625	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.65	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.675	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.7	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.725	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.75	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.775	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.8	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.825	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.85	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.875	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.9	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.925	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.95	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
2.975	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.025	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.05	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.075	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.1	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.125	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.15	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.175	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.2	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.225	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.25	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.275	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.3	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.325	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.35	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.375	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.4	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.425	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.45	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.475	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.5	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.525	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.55	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.575	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.6	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.625	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.65	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.675	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.7	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.725	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.75	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.775	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.8	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.825	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.85	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000

TABLE II (Cont'd)

VALIDATION RESULTS FOR CMOTOR MODEL AND MOTOR STARTUP SIMULATION
FOR PSS/E VERSION 21 VS VERSION 24

(STARTUP OF SIP 21 FROM BUS 5A WITH 'INFINITE VOLT'AGE SOURCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998)

Time (second)	MTR SPEEDVTN (PU)			MTR-P POWER (PU)			MTR-Q POWER (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
3.875	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.9	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.925	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.95	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
3.975	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.025	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.05	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.075	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.1	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.125	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.15	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.175	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.2	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.225	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.25	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.275	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.3	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.325	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.35	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.375	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.4	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.425	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.45	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.475	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.5	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.525	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.55	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.575	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.6	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.625	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.65	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.675	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.7	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.725	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.75	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.775	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.8	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.825	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.85	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.875	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.9	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.925	-4.21E-03	-4.21E-03	0.000	0.17793	0.17793	0.000	0.1040	0.1040	0.000
4.95	-4.21E-03	-4.21E-03	0.000	0.1779	0.1779	0.000	0.1040	0.1040	0.000
4.98	-4.21E-03	-4.21E-03	0.000	0.1779	0.1779	0.000	0.1040	0.1040	0.000
Max Delta (%)			0.000			0.000			0.001

TABLE III
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
0	0.9999	0.9999	0.000						
0	0.9994	0.9994	0.000	0.0656	0.0656	0.000			
0.025	0.9983	0.9983	0.000	0.0656	0.0656	0.000			
0.05	0.9980	0.9980	0.000	0.0656	0.0656	0.000			
0.075	0.9980	0.9980	0.000	0.0656	0.0656	0.000			
0.1	0.9980	0.9980	0.001	0.0656	0.0656	0.000			
0.125	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
0.15	0.9975	0.9975	0.000	0.0656	0.0656	0.000			
0.175	0.9972	0.9972	0.000	0.0656	0.0656	0.002			
0.2	0.9969	0.9969	0.000	0.0656	0.0656	0.000			
0.225	0.9966	0.9966	0.000	0.0656	0.0656	0.000			
0.25	0.9963	0.9963	0.000	0.0656	0.0656	0.002			
0.275	0.9961	0.9961	0.000	0.0656	0.0656	0.000			
0.3	0.9959	0.9959	0.000	0.0656	0.0656	0.000			
0.325	0.9958	0.9958	0.000	0.0656	0.0656	0.002			
0.35	0.9957	0.9957	0.000	0.0656	0.0656	0.000			
0.375	0.9956	0.9956	0.000	0.0656	0.0656	0.000			
0.4	0.9956	0.9956	0.000	0.0656	0.0656	0.000			
0.425	0.9957	0.9957	0.000	0.0656	0.0656	0.002			
0.45	0.9958	0.9958	0.000	0.0656	0.0656	0.002			
0.475	0.9958	0.9958	0.000	0.0656	0.0656	0.000			
0.5	0.9960	0.9960	0.000	0.0656	0.0656	0.002			
0.525	0.9961	0.9961	0.000	0.0656	0.0656	0.000			
0.55	0.9962	0.9962	0.000	0.0656	0.0656	0.000			
0.575	0.9964	0.9964	0.000	0.0656	0.0656	0.000			
0.6	0.9966	0.9966	0.000	0.0656	0.0656	0.000			
0.625	0.9968	0.9968	0.000	0.0656	0.0656	0.000			
0.65	0.9970	0.9970	0.000	0.0656	0.0656	0.002			
0.675	0.9973	0.9973	0.000	0.0656	0.0656	0.000			
0.7	0.9976	0.9976	0.000	0.0656	0.0656	0.000			
0.725	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
0.75	0.9981	0.9981	0.000	0.0656	0.0656	0.000			
0.775	0.9985	0.9985	0.000	0.0656	0.0656	0.000			
0.8	0.9988	0.9988	0.000	0.0656	0.0656	0.000			
0.825	0.9991	0.9991	0.000	0.0656	0.0656	0.000			
0.85	0.9994	0.9994	0.000	0.0656	0.0656	0.002			
0.875	0.9997	0.9997	0.000	0.0656	0.0656	0.002			
0.9	1.0000	1.0000	0.000	0.0656	0.0656	0.002			
0.925	1.0003	1.0003	0.000	0.0656	0.0656	0.000			
0.95	1.0006	1.0006	0.000	0.0656	0.0656	0.000			
0.975	1.0009	1.0009	0.000	0.0656	0.0656	0.000			

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1	1.0011	1.0011	0.000	0.0656	0.0656	0.000			
1.025	1.0014	1.0014	0.000	0.0656	0.0656	0.002			
1.05	1.0016	1.0016	0.000	0.0656	0.0656	0.000			
1.075	1.0018	1.0018	0.000	0.0656	0.0656	0.000			
1.1	1.0021	1.0021	0.000	0.0656	0.0656	0.002			
1.125	1.0023	1.0023	0.000	0.0656	0.0656	0.000			
1.15	1.0025	1.0025	0.000	0.0656	0.0656	0.000			
1.175	1.0027	1.0027	0.000	0.0656	0.0656	0.000			
1.2	1.0029	1.0029	0.000	0.0656	0.0656	0.000			
1.225	1.0031	1.0031	0.000	0.0656	0.0656	0.000			
1.25	1.0032	1.0032	0.000	0.0656	0.0656	0.002			
1.2749	1.0034	1.0034	0.000	0.0656	0.0656	0.000			
1.2999	1.0035	1.0035	0.000	0.0656	0.0656	0.000			
1.3249	1.0036	1.0036	0.000	0.0656	0.0656	0.000			
1.3499	1.0037	1.0037	0.000	0.0656	0.0656	0.000			
1.3749	1.0038	1.0038	0.000	0.0656	0.0656	0.000			
1.3999	1.0039	1.0039	0.000	0.0656	0.0656	0.002			
1.4249	1.0039	1.0039	0.000	0.0656	0.0656	0.000			
1.4499	1.0040	1.0040	0.000	0.0656	0.0656	0.000			
1.4749	1.0040	1.0040	0.000	0.0656	0.0656	0.000			
1.4999	1.0040	1.0040	0.000	0.0656	0.0656	0.002			
1.5249	1.0040	1.0040	0.000	0.0656	0.0656	0.002			
1.5499	1.0040	1.0040	0.000	0.0656	0.0656	0.002			
1.5749	1.0040	1.0040	0.000	0.0656	0.0656	0.002			
1.5999	1.0040	1.0040	0.000	0.0656	0.0656	0.002			
1.6249	1.0039	1.0039	0.000	0.0656	0.0656	0.000			
1.6499	1.0039	1.0039	0.000	0.0656	0.0656	0.000			
1.6749	1.0038	1.0038	0.000	0.0656	0.0656	0.000			
1.6999	1.0038	1.0038	0.000	0.0656	0.0656	0.000			
1.7249	1.0037	1.0037	0.000	0.0656	0.0656	0.002			
1.7499	1.0036	1.0036	0.000	0.0656	0.0656	0.002			
1.7749	1.0035	1.0035	0.000	0.0656	0.0656	0.000			
1.7999	1.0034	1.0034	0.000	0.0656	0.0656	0.000			
1.8249	1.0033	1.0033	0.000	0.0656	0.0656	0.000			
1.8499	1.0032	1.0032	0.000	0.0656	0.0656	0.000			
1.8749	1.0030	1.0030	0.000	0.0656	0.0656	0.002			
1.8999	1.0029	1.0029	0.000	0.0656	0.0656	0.000			
1.9249	1.0028	1.0028	0.000	0.0656	0.0656	0.000			
1.9499	1.0026	1.0026	0.000	0.0656	0.0656	0.000			
1.9749	1.0025	1.0025	0.000	0.0656	0.0656	0.000			
1.9999	1.0023	1.0023	0.000	0.0656	0.0656	0.002			

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
2.0249	1.0022	1.0022	0.000	0.0656	0.0656	0.002			
2.0499	1.0020	1.0020	0.000	0.0656	0.0656	0.000			
2.0749	1.0018	1.0018	0.000	0.0656	0.0656	0.000			
2.0999	1.0017	1.0017	0.000	0.0656	0.0656	0.002			
2.1249	1.0015	1.0015	0.000	0.0656	0.0656	0.000			
2.1499	1.0014	1.0014	0.000	0.0656	0.0656	0.000			
2.1749	1.0012	1.0012	0.000	0.0656	0.0656	0.000			
2.1999	1.0010	1.0010	0.000	0.0656	0.0656	0.000			
2.2249	1.0009	1.0009	0.000	0.0656	0.0656	0.002			
2.2499	1.0007	1.0007	0.000	0.0656	0.0656	0.000			
2.2749	1.0005	1.0005	0.000	0.0656	0.0656	0.000			
2.2999	1.0004	1.0004	0.000	0.0656	0.0656	0.000			
2.3249	1.0002	1.0002	0.000	0.0656	0.0656	0.002			
2.3499	1.0001	1.0001	0.000	0.0656	0.0656	0.002			
2.3749	0.9999	0.9999	0.000	0.0656	0.0656	0.000			
2.3999	0.9998	0.9998	0.000	0.0656	0.0656	0.000			
2.4249	0.9996	0.9996	0.000	0.0656	0.0656	0.000			
2.4499	0.9995	0.9995	0.000	0.0656	0.0656	0.000			
2.4749	0.9994	0.9994	0.000	0.0656	0.0656	0.002			
2.4999	0.9992	0.9992	0.000	0.0656	0.0656	0.000			
2.5249	0.9991	0.9991	0.000	0.0656	0.0656	0.000			
2.5499	0.9990	0.9990	0.000	0.0656	0.0656	0.000			
2.5749	0.9989	0.9989	0.000	0.0656	0.0656	0.000			
2.5999	0.9988	0.9988	0.000	0.0656	0.0656	0.000			
2.6249	0.9987	0.9987	0.000	0.0656	0.0656	0.002			
2.6499	0.9986	0.9986	0.000	0.0656	0.0656	0.002			
2.6749	0.9985	0.9985	0.000	0.0656	0.0656	0.000			
2.6999	0.9984	0.9984	0.000	0.0656	0.0656	0.000			
2.7249	0.9983	0.9983	0.000	0.0656	0.0656	0.000			
2.7499	0.9982	0.9982	0.000	0.0656	0.0656	0.002			
2.7749	0.9981	0.9981	0.000	0.0656	0.0656	0.000			
2.7999	0.9981	0.9981	0.000	0.0656	0.0656	0.003			
2.8249	0.9980	0.9980	0.000	0.0656	0.0656	0.000			
2.8499	0.9980	0.9980	0.000	0.0656	0.0656	0.000			
2.8749	0.9979	0.9979	0.000	0.0656	0.0656	0.002			
2.8999	0.9979	0.9979	0.000	0.0656	0.0656	0.002			
2.9249	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
2.9499	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
2.9749	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
2.9999	0.9978	0.9978	0.000	0.0656	0.0656	0.000			
3.0082	0.9978	0.9978	0.001	0.0656	0.0656	0.000			

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
3.0082	0.8815	0.8815	0.000	0.2618	0.2618	0.000	0.718510	0.718510	0.000
3.0332	0.8585	0.8585	0.000	0.2518	0.2518	0.000	0.681440	0.681440	0.000
3.0582	0.8456	0.8456	0.000	0.2460	0.2460	0.000	0.659960	0.659960	0.000
3.0832	0.8374	0.8374	0.000	0.2422	0.2422	0.000	0.645930	0.645930	0.000
3.1082	0.8320	0.8320	0.000	0.2396	0.2396	0.000	0.636520	0.636520	0.000
3.1332	0.8286	0.8286	0.000	0.2379	0.2379	0.000	0.630290	0.630280	0.002
3.1582	0.8267	0.8267	0.000	0.2368	0.2368	0.000	0.626440	0.626440	0.000
3.1832	0.8260	0.8260	0.000	0.2362	0.2362	0.000	0.624510	0.624510	0.000
3.2082	0.8263	0.8263	0.000	0.2360	0.2360	0.000	0.624180	0.624170	0.002
3.2332	0.8276	0.8276	0.000	0.2362	0.2362	0.000	0.625230	0.625230	0.000
3.2582	0.8297	0.8297	0.000	0.2365	0.2365	0.000	0.627550	0.627550	0.000
3.2832	0.8326	0.8326	0.000	0.2373	0.2373	0.000	0.630940	0.630940	0.000
3.3082	0.8362	0.8362	0.000	0.2383	0.2383	0.000	0.635330	0.635320	0.002
3.3332	0.8404	0.8404	0.001	0.2395	0.2395	0.000	0.640630	0.640630	0.000
3.3582	0.8451	0.8451	0.000	0.2409	0.2409	0.000	0.646770	0.646760	0.002
3.3832	0.8504	0.8504	0.000	0.2425	0.2425	0.000	0.653670	0.653660	0.002
3.4082	0.8561	0.8561	0.000	0.2442	0.2442	0.000	0.661260	0.661260	0.000
3.4332	0.8622	0.8622	0.000	0.2462	0.2462	0.000	0.669500	0.669500	0.000
3.4582	0.8687	0.8687	0.000	0.2482	0.2482	0.000	0.678330	0.678320	0.001
3.4832	0.8755	0.8755	0.000	0.2504	0.2504	0.000	0.687650	0.687640	0.001
3.5082	0.8824	0.8824	0.000	0.2527	0.2527	0.000	0.697310	0.697310	0.000
3.5332	0.8894	0.8894	0.000	0.2551	0.2551	0.000	0.707130	0.707120	0.001
3.5582	0.8964	0.8964	0.000	0.2574	0.2574	0.000	0.716860	0.716860	0.000
3.5832	0.9031	0.9031	0.000	0.2597	0.2597	0.000	0.726320	0.726310	0.001
3.6082	0.9096	0.9096	0.000	0.2619	0.2619	0.000	0.735310	0.735300	0.001
3.6332	0.9157	0.9157	0.000	0.2639	0.2639	0.000	0.743730	0.743730	0.000
3.6582	0.9214	0.9214	0.000	0.2659	0.2659	0.000	0.751540	0.751530	0.001
3.6832	0.9268	0.9268	0.001	0.2678	0.2678	0.000	0.758740	0.758740	0.000
3.7082	0.9318	0.9318	0.000	0.2696	0.2696	0.000	0.765400	0.765390	0.001
3.7332	0.9366	0.9366	0.000	0.2714	0.2714	0.000	0.771590	0.771580	0.001
3.7582	0.9412	0.9412	0.000	0.2732	0.2732	0.000	0.777390	0.777390	0.000
3.7832	0.9456	0.9456	0.000	0.2751	0.2751	0.000	0.782890	0.782890	0.000
3.8082	0.9499	0.9499	0.000	0.2771	0.2771	0.000	0.788130	0.788120	0.001
3.8332	0.9541	0.9541	0.000	0.2792	0.2792	0.000	0.793120	0.793110	0.001
3.8582	0.9581	0.9581	0.000	0.2814	0.2814	0.000	0.797850	0.797850	0.000
3.8832	0.9621	0.9621	0.000	0.2838	0.2838	0.000	0.802290	0.802290	0.000
3.9082	0.9659	0.9659	0.000	0.2863	0.2863	0.000	0.806390	0.806390	0.000
3.9332	0.9696	0.9696	0.000	0.2891	0.2891	0.000	0.810100	0.810090	0.001
3.9582	0.9731	0.9731	0.000	0.2922	0.2922	0.000	0.813340	0.813340	0.000
3.9832	0.9764	0.9764	0.000	0.2956	0.2956	0.000	0.816080	0.816080	0.000
4.0082	0.9796	0.9796	0.001	0.2995	0.2995	0.000	0.818260	0.818260	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
4.0332	0.9827	0.9827	0.000	0.3038	0.3038	0.000	0.819820	0.819810	0.001
4.0582	0.9856	0.9856	0.001	0.3089	0.3089	0.000	0.820670	0.820670	0.000
4.0832	0.9885	0.9885	0.000	0.3150	0.3150	0.000	0.820700	0.820690	0.001
4.1082	0.9915	0.9915	0.000	0.3225	0.3225	0.000	0.819670	0.819670	0.000
4.1332	0.9945	0.9945	0.000	0.3320	0.3320	0.000	0.817180	0.817170	0.001
4.1582	0.9978	0.9978	0.000	0.3447	0.3447	0.000	0.812400	0.812390	0.001
4.1832	1.0018	1.0018	0.000	0.3630	0.3630	0.000	0.803430	0.803420	0.001
4.2082	1.0075	1.0075	0.000	0.3930	0.3930	0.000	0.784770	0.784760	0.001
4.2332	1.0192	1.0192	0.000	0.4541	0.4541	0.002	0.731080	0.731060	0.003
4.2582	1.0811	1.0811	0.000	0.5352	0.5352	0.004	0.361610	0.361600	0.003
4.2832	1.1390	1.1390	0.000	0.2627	0.2627	0.000	0.095549	0.095540	0.009
4.3082	1.1523	1.1523	0.000	0.2222	0.2222	0.000	0.083318	0.083310	0.010
4.3332	1.1593	1.1593	0.000	0.2144	0.2144	0.000	0.081690	0.081682	0.010
4.3582	1.1633	1.1633	0.000	0.2136	0.2136	0.000	0.081746	0.081741	0.006
4.3832	1.1653	1.1653	0.000	0.2148	0.2148	0.000	0.082159	0.082151	0.010
4.4082	1.1656	1.1656	0.000	0.2165	0.2165	0.000	0.082557	0.082551	0.007
4.4332	1.1643	1.1643	0.000	0.2182	0.2182	0.000	0.082824	0.082817	0.008
4.4582	1.1616	1.1616	0.000	0.2196	0.2196	0.000	0.082924	0.082917	0.008
4.4832	1.1575	1.1575	0.000	0.2206	0.2206	0.000	0.082852	0.082847	0.006
4.5082	1.1522	1.1522	0.000	0.2215	0.2215	0.000	0.082656	0.082649	0.008
4.5332	1.1460	1.1460	0.000	0.2222	0.2222	0.000	0.082366	0.082359	0.008
4.5582	1.1391	1.1391	0.000	0.2228	0.2228	0.000	0.082019	0.082012	0.009
4.5832	1.1319	1.1319	0.000	0.2232	0.2232	0.000	0.081647	0.081639	0.010
4.6082	1.1247	1.1247	0.000	0.2236	0.2236	0.004	0.081287	0.081279	0.010
4.6332	1.1177	1.1177	0.000	0.2240	0.2240	0.000	0.080938	0.080931	0.009
4.6582	1.1111	1.1111	0.000	0.2244	0.2244	0.000	0.080667	0.080661	0.007
4.6832	1.1050	1.1050	0.000	0.2251	0.2251	0.000	0.080506	0.080499	0.009
4.7082	1.0994	1.0994	0.000	0.2256	0.2256	0.000	0.080325	0.080319	0.007
4.7332	1.0943	1.0943	0.000	0.2263	0.2263	0.000	0.080242	0.080236	0.007
4.7582	1.0896	1.0896	0.000	0.2269	0.2269	0.000	0.080201	0.080195	0.007
4.7832	1.0853	1.0853	0.000	0.2276	0.2276	0.000	0.080189	0.080181	0.010
4.8082	1.0812	1.0812	0.000	0.2281	0.2281	0.000	0.080150	0.080144	0.007
4.8332	1.0772	1.0772	0.000	0.2287	0.2287	0.000	0.080144	0.080138	0.007
4.8582	1.0733	1.0733	0.000	0.2291	0.2291	0.000	0.080123	0.080118	0.006
4.8831	1.0694	1.0694	0.000	0.2295	0.2295	0.000	0.080085	0.080078	0.009
4.91	1.0655	1.0655	0.000	0.2298	0.2298	0.000	0.080022	0.080015	0.009
4.93	1.0615	1.0615	0.000	0.2301	0.2301	0.000	0.079936	0.079929	0.009
4.9581	1.0574	1.0574	0.000	0.2302	0.2302	0.004	0.079827	0.079820	0.009
4.9831	1.0533	1.0533	0.000	0.2303	0.2303	0.000	0.079703	0.079697	0.008
5.0081	1.0492	1.0492	0.000	0.2303	0.2303	0.000	0.079570	0.079565	0.006
5.0331	1.0452	1.0452	0.000	0.2304	0.2304	0.000	0.079438	0.079431	0.009

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21 (PU)			QELEC-DG21 (PU) *		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
5.0581	1.0412	1.0412	0.000	0.2304	0.2304	0.000	0.079310	0.079305	0.006
5.0831	1.0374	1.0374	0.000	0.2304	0.2304	0.000	0.079193	0.079187	0.008
5.1081	1.0337	1.0337	0.000	0.2304	0.2304	0.000	0.079092	0.079087	0.006
5.1331	1.0302	1.0302	0.000	0.2304	0.2304	0.000	0.079008	0.079002	0.008
5.1581	1.0270	1.0270	0.000	0.2304	0.2304	0.000	0.078936	0.078931	0.006
5.1831	1.0239	1.0239	0.000	0.2305	0.2305	0.000	0.078875	0.078869	0.008
5.2081	1.0210	1.0210	0.000	0.2305	0.2305	0.000	0.078821	0.078815	0.008
5.2331	1.0183	1.0183	0.000	0.2306	0.2306	0.000	0.078762	0.078757	0.006
5.2581	1.0157	1.0158	0.010	0.2305	0.2305	0.000	0.078701	0.078695	0.008
5.2831	1.0134	1.0134	0.000	0.2305	0.2305	0.000	0.078627	0.078622	0.006
5.3081	1.0111	1.0111	0.000	0.2304	0.2304	0.000	0.078538	0.078532	0.008
5.3331	1.0089	1.0089	0.000	0.2302	0.2302	0.000	0.078431	0.078426	0.006
5.3581	1.0069	1.0069	0.000	0.2300	0.2300	0.000	0.078306	0.078301	0.006
5.3831	1.0049	1.0049	0.000	0.2298	0.2298	0.000	0.078165	0.078160	0.006
5.4081	1.0030	1.0030	0.000	0.2295	0.2295	0.000	0.078011	0.078005	0.008
5.4331	1.0012	1.0012	0.000	0.2291	0.2291	0.000	0.077847	0.077842	0.006
5.4581	0.9994	0.9994	0.000	0.2288	0.2288	0.000	0.077677	0.077673	0.005
5.4831	0.9978	0.9978	0.000	0.2285	0.2285	0.000	0.077507	0.077502	0.006
5.5081	0.9962	0.9962	0.000	0.2281	0.2281	0.000	0.077338	0.077333	0.006
5.5331	0.9948	0.9948	0.000	0.2278	0.2278	0.000	0.077173	0.077167	0.008
5.5581	0.9934	0.9934	0.000	0.2274	0.2274	0.000	0.077012	0.077008	0.005
5.5831	0.9921	0.9921	0.000	0.2271	0.2271	0.000	0.076857	0.076852	0.007
5.6081	0.9910	0.9910	0.000	0.2268	0.2268	0.000	0.076712	0.076707	0.007
5.6331	0.9899	0.9899	0.000	0.2265	0.2265	0.000	0.076562	0.076557	0.007
5.6581	0.9890	0.9890	0.000	0.2261	0.2261	0.000	0.076411	0.076406	0.007
5.6831	0.9881	0.9881	0.000	0.2258	0.2258	0.000	0.076259	0.076254	0.007
5.7081	0.9874	0.9874	0.000	0.2255	0.2255	0.000	0.076101	0.076096	0.007
5.7331	0.9867	0.9867	0.000	0.2251	0.2251	0.000	0.075939	0.075933	0.008
5.7581	0.9861	0.9861	0.000	0.2247	0.2247	0.000	0.075770	0.075766	0.005
5.7831	0.9856	0.9856	0.000	0.2243	0.2243	0.000	0.075597	0.075592	0.007
5.8081	0.9852	0.9852	0.000	0.2239	0.2239	0.004	0.075420	0.075414	0.008
5.8331	0.9848	0.9848	0.000	0.2235	0.2235	0.000	0.075239	0.075234	0.007
5.8581	0.9845	0.9845	0.000	0.2230	0.2230	0.000	0.075059	0.075054	0.007
5.8831	0.9842	0.9842	0.000	0.2226	0.2226	0.000	0.074880	0.074875	0.007
5.9081	0.9839	0.9839	0.000	0.2222	0.2222	0.005	0.074706	0.074700	0.008
5.9331	0.9837	0.9837	0.000	0.2218	0.2218	0.000	0.074536	0.074531	0.007
5.9581	0.9836	0.9836	0.000	0.2214	0.2214	0.000	0.074374	0.074369	0.007
5.9831	0.9835	0.9835	0.000	0.2210	0.2210	0.000	0.074219	0.074213	0.008
6.0081	0.9834	0.9834	0.000	0.2206	0.2206	0.000	0.074071	0.074066	0.007
6.0331	0.9834	0.9834	0.000	0.2203	0.2203	0.000	0.073931	0.073924	0.009
6.0581	0.9835	0.9835	0.000	0.2199	0.2199	0.005	0.073795	0.073790	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
6.0831	0.9836	0.9836	0.000	0.2196	0.2196	0.000	0.073666	0.073661	0.007
6.1081	0.9837	0.9837	0.000	0.2192	0.2192	0.000	0.073541	0.073535	0.008
6.1331	0.9839	0.9839	0.000	0.2189	0.2189	0.000	0.073419	0.073415	0.005
6.1581	0.9841	0.9841	0.000	0.2186	0.2186	0.000	0.073301	0.073296	0.007
6.1831	0.9843	0.9843	0.000	0.2183	0.2183	0.000	0.073185	0.073181	0.005
6.2081	0.9846	0.9846	0.001	0.2179	0.2179	0.000	0.073069	0.073064	0.007
6.2331	0.9848	0.9848	0.000	0.2176	0.2176	0.000	0.072961	0.072955	0.008
6.2581	0.9852	0.9852	0.000	0.2174	0.2174	0.000	0.072883	0.072878	0.007
6.2831	0.9855	0.9855	0.000	0.2171	0.2171	0.000	0.072781	0.072777	0.005
6.3081	0.9858	0.9858	0.000	0.2168	0.2168	0.000	0.072683	0.072678	0.007
6.3331	0.9862	0.9862	0.000	0.2165	0.2165	0.000	0.072590	0.072585	0.007
6.3581	0.9866	0.9866	0.000	0.2163	0.2163	0.000	0.072503	0.072499	0.006
6.3831	0.9870	0.9870	0.000	0.2160	0.2160	0.000	0.072424	0.072419	0.007
6.4081	0.9874	0.9874	0.000	0.2158	0.2158	0.000	0.072352	0.072347	0.007
6.4331	0.9878	0.9878	0.000	0.2156	0.2156	0.000	0.072306	0.072301	0.007
6.4581	0.9882	0.9882	0.000	0.2153	0.2153	0.000	0.072233	0.072227	0.008
6.4831	0.9886	0.9887	0.001	0.2151	0.2151	0.000	0.072180	0.072176	0.006
6.5081	0.9891	0.9891	0.000	0.2150	0.2150	0.000	0.072135	0.072130	0.007
6.5331	0.9896	0.9896	0.000	0.2148	0.2148	0.000	0.072095	0.072090	0.007
6.5581	0.9900	0.9900	0.000	0.2147	0.2147	0.000	0.072060	0.072054	0.008
6.5831	0.9905	0.9905	0.000	0.2145	0.2145	0.000	0.072029	0.072024	0.007
6.6081	0.9910	0.9910	0.000	0.2144	0.2144	0.000	0.072002	0.071997	0.007
6.6331	0.9915	0.9915	0.001	0.2143	0.2143	0.000	0.071980	0.071974	0.008
6.6581	0.9919	0.9919	0.000	0.2143	0.2143	0.000	0.071995	0.071989	0.008
6.6831	0.9924	0.9924	0.000	0.2142	0.2142	0.000	0.071980	0.071975	0.007
6.7081	0.9929	0.9929	0.000	0.2141	0.2141	0.000	0.071974	0.071969	0.007
6.7331	0.9934	0.9934	0.000	0.2140	0.2140	0.000	0.071971	0.071966	0.007
6.7581	0.9939	0.9939	0.000	0.2140	0.2140	0.000	0.071971	0.071966	0.007
6.7831	0.9943	0.9943	0.000	0.2140	0.2140	0.000	0.071976	0.071971	0.007
6.8081	0.9948	0.9948	0.000	0.2139	0.2139	0.000	0.071986	0.071981	0.007
6.8331	0.9953	0.9953	0.000	0.2139	0.2139	0.000	0.072000	0.071995	0.007
6.8581	0.9957	0.9957	0.001	0.2139	0.2139	0.000	0.072020	0.072015	0.007
6.8831	0.9962	0.9962	0.000	0.2139	0.2139	0.000	0.072042	0.072037	0.007
6.9081	0.9966	0.9966	0.000	0.2139	0.2139	0.000	0.072069	0.072063	0.008
6.9331	0.9970	0.9971	0.001	0.2140	0.2140	0.000	0.072098	0.072093	0.007
6.9581	0.9975	0.9975	0.000	0.2140	0.2140	0.000	0.072130	0.072126	0.006
6.9831	0.9979	0.9979	0.000	0.2141	0.2141	0.000	0.072165	0.072161	0.006
7.0081	0.9983	0.9983	0.000	0.2141	0.2141	0.000	0.072203	0.072198	0.007
7.0331	0.9987	0.9987	0.000	0.2142	0.2142	0.000	0.072242	0.072238	0.006
7.0581	0.9991	0.9991	0.000	0.2143	0.2143	0.005	0.072282	0.072278	0.006
7.0831	0.9995	0.9995	0.000	0.2143	0.2143	0.000	0.072326	0.072320	0.008

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
7.1081	0.9999	0.9999	0.001	0.2144	0.2144	0.000	0.072370	0.072365	0.007
7.1331	1.0002	1.0002	0.000	0.2145	0.2145	0.000	0.072416	0.072411	0.007
7.1581	1.0006	1.0006	0.000	0.2146	0.2146	0.000	0.072465	0.072460	0.007
7.1831	1.0009	1.0009	0.000	0.2147	0.2147	0.000	0.072514	0.072509	0.007
7.2081	1.0012	1.0012	0.000	0.2148	0.2148	0.000	0.072567	0.072561	0.008
7.2331	1.0015	1.0015	0.000	0.2150	0.2150	0.000	0.072619	0.072614	0.007
7.2581	1.0018	1.0018	0.000	0.2151	0.2151	0.000	0.072674	0.072668	0.008
7.2831	1.0021	1.0021	0.000	0.2152	0.2152	0.000	0.072730	0.072724	0.008
7.3081	1.0024	1.0024	0.000	0.2153	0.2153	0.000	0.072786	0.072781	0.007
7.3331	1.0026	1.0026	0.000	0.2155	0.2155	0.000	0.072844	0.072838	0.008
7.3581	1.0029	1.0029	0.000	0.2156	0.2156	0.000	0.072902	0.072897	0.007
7.3831	1.0031	1.0031	0.000	0.2158	0.2158	0.000	0.072961	0.072956	0.007
7.4081	1.0033	1.0033	0.000	0.2159	0.2159	0.000	0.073020	0.073015	0.007
7.4331	1.0035	1.0035	0.000	0.2161	0.2161	0.000	0.073079	0.073074	0.007
7.4581	1.0037	1.0037	0.000	0.2162	0.2162	0.000	0.073139	0.073133	0.008
7.4831	1.0039	1.0039	0.000	0.2164	0.2164	0.000	0.073197	0.073192	0.007
7.5081	1.0040	1.0040	0.000	0.2165	0.2165	0.000	0.073256	0.073251	0.007
7.5331	1.0042	1.0042	0.000	0.2167	0.2167	0.000	0.073314	0.073308	0.008
7.5581	1.0043	1.0043	0.000	0.2168	0.2168	0.000	0.073371	0.073366	0.007
7.5831	1.0044	1.0044	0.000	0.2170	0.2170	0.000	0.073429	0.073423	0.008
7.6081	1.0045	1.0045	0.000	0.2171	0.2171	0.000	0.073484	0.073479	0.007
7.6331	1.0046	1.0046	0.000	0.2173	0.2173	0.000	0.073540	0.073535	0.007
7.6581	1.0047	1.0047	0.000	0.2174	0.2174	0.000	0.073595	0.073590	0.007
7.6831	1.0047	1.0047	0.000	0.2176	0.2176	0.000	0.073651	0.073645	0.008
7.7081	1.0048	1.0048	0.000	0.2177	0.2177	0.000	0.073709	0.073702	0.009
7.7331	1.0048	1.0048	0.000	0.2179	0.2179	0.000	0.073760	0.073755	0.007
7.7581	1.0048	1.0048	0.000	0.2180	0.2180	0.000	0.073812	0.073806	0.008
7.7831	1.0049	1.0049	0.000	0.2181	0.2181	0.000	0.073834	0.073829	0.007
7.8081	1.0049	1.0049	0.000	0.2182	0.2182	0.000	0.073881	0.073877	0.005
7.8331	1.0048	1.0048	0.000	0.2184	0.2184	0.000	0.073931	0.073926	0.007
7.8581	1.0048	1.0048	0.000	0.2185	0.2185	0.000	0.073980	0.073974	0.008
7.8831	1.0048	1.0048	0.000	0.2187	0.2187	0.000	0.074028	0.074021	0.009
7.9081	1.0047	1.0047	0.000	0.2188	0.2188	0.000	0.074072	0.074066	0.008
7.9331	1.0047	1.0047	0.000	0.2189	0.2189	0.000	0.074116	0.074111	0.007
7.9581	1.0046	1.0046	0.000	0.2191	0.2191	0.000	0.074158	0.074151	0.009
7.9831	1.0046	1.0046	0.000	0.2192	0.2192	0.000	0.074199	0.074192	0.009
8.0081	1.0045	1.0045	0.000	0.2193	0.2193	0.000	0.074237	0.074231	0.008
8.0331	1.0044	1.0044	0.000	0.2194	0.2194	0.000	0.074273	0.074267	0.008
8.0581	1.0043	1.0043	0.000	0.2195	0.2195	0.000	0.074308	0.074302	0.008
8.0831	1.0042	1.0042	0.000	0.2196	0.2196	0.000	0.074341	0.074335	0.008
8.1081	1.0041	1.0041	0.000	0.2197	0.2197	0.000	0.074383	0.074378	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
8.1331	1.0039	1.0039	0.000	0.2198	0.2198	0.000	0.074404	0.074399	0.007
8.1581	1.0038	1.0038	0.000	0.2199	0.2199	0.000	0.074423	0.074417	0.008
8.1831	1.0037	1.0037	0.000	0.2200	0.2200	0.000	0.074442	0.074437	0.007
8.2081	1.0035	1.0035	0.000	0.2201	0.2201	0.000	0.074459	0.074452	0.009
8.2331	1.0034	1.0034	0.000	0.2202	0.2202	0.000	0.074498	0.074493	0.007
8.2581	1.0033	1.0033	0.000	0.2202	0.2202	0.000	0.074520	0.074514	0.008
8.2831	1.0031	1.0031	0.000	0.2203	0.2203	0.000	0.074537	0.074532	0.007
8.3081	1.0030	1.0030	0.000	0.2204	0.2204	0.000	0.074553	0.074548	0.007
8.3331	1.0028	1.0028	0.000	0.2204	0.2204	0.000	0.074568	0.074561	0.009
8.3581	1.0026	1.0026	0.000	0.2205	0.2205	0.000	0.074579	0.074572	0.009
8.3831	1.0025	1.0025	0.000	0.2205	0.2205	0.000	0.074588	0.074582	0.008
8.4081	1.0023	1.0023	0.000	0.2205	0.2205	0.000	0.074596	0.074591	0.007
8.4331	1.0021	1.0021	0.000	0.2206	0.2206	0.000	0.074603	0.074598	0.007
8.4581	1.0020	1.0020	0.000	0.2206	0.2206	0.000	0.074606	0.074602	0.005
8.4831	1.0018	1.0018	0.000	0.2206	0.2206	0.000	0.074609	0.074602	0.009
8.5081	1.0016	1.0016	0.000	0.2206	0.2206	0.000	0.074610	0.074605	0.007
8.5331	1.0015	1.0015	0.000	0.2207	0.2207	0.000	0.074608	0.074604	0.005
8.5581	1.0013	1.0013	0.000	0.2207	0.2207	0.000	0.074606	0.074601	0.007
8.5831	1.0011	1.0012	0.010	0.2207	0.2207	0.000	0.074602	0.074596	0.008
8.6081	1.0010	1.0010	0.000	0.2207	0.2207	0.000	0.074598	0.074592	0.008
8.6331	1.0008	1.0008	0.000	0.2207	0.2207	0.000	0.074590	0.074584	0.008
8.6581	1.0007	1.0007	0.000	0.2207	0.2207	0.000	0.074581	0.074576	0.007
8.6831	1.0005	1.0005	0.000	0.2207	0.2207	0.000	0.074572	0.074567	0.007
8.7081	1.0004	1.0004	0.000	0.2206	0.2206	0.000	0.074560	0.074555	0.007
8.7331	1.0002	1.0002	0.000	0.2206	0.2206	0.000	0.074547	0.074542	0.007
8.7581	1.0001	1.0001	0.000	0.2206	0.2206	0.000	0.074534	0.074529	0.007
8.7831	0.9999	0.9999	0.001	0.2206	0.2206	0.000	0.074519	0.074514	0.007
8.8081	0.9998	0.9998	0.001	0.2205	0.2205	0.000	0.074502	0.074496	0.008
8.8331	0.9996	0.9996	0.000	0.2205	0.2205	0.000	0.074485	0.074479	0.008
8.8581	0.9995	0.9995	0.000	0.2205	0.2205	0.000	0.074467	0.074462	0.007
8.8831	0.9994	0.9994	0.000	0.2204	0.2204	0.000	0.074448	0.074442	0.008
8.9081	0.9993	0.9993	0.000	0.2204	0.2204	0.000	0.074427	0.074422	0.007
8.9331	0.9991	0.9991	0.000	0.2203	0.2203	0.000	0.074406	0.074401	0.007
8.9581	0.9990	0.9990	0.000	0.2203	0.2203	0.000	0.074385	0.074379	0.008
8.9831	0.9989	0.9989	0.000	0.2202	0.2202	0.000	0.074363	0.074357	0.008
9.0081	0.9988	0.9988	0.001	0.2202	0.2202	0.000	0.074340	0.074335	0.007
9.0331	0.9987	0.9987	0.001	0.2201	0.2201	0.000	0.074317	0.074311	0.008
9.0581	0.9986	0.9986	0.000	0.2201	0.2201	0.000	0.074293	0.074287	0.008
9.0831	0.9985	0.9985	0.000	0.2200	0.2200	0.000	0.074269	0.074264	0.007
9.1081	0.9984	0.9984	0.000	0.2200	0.2200	0.000	0.074244	0.074238	0.008
9.1331	0.9984	0.9984	0.000	0.2199	0.2199	0.000	0.074219	0.074214	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
9.1581	0.9983	0.9983	0.000	0.2198	0.2198	0.000	0.074195	0.074189	0.008
9.1831	0.9982	0.9982	0.000	0.2198	0.2198	0.000	0.074170	0.074165	0.007
9.2081	0.9982	0.9982	0.000	0.2197	0.2197	0.000	0.074146	0.074140	0.008
9.2331	0.9981	0.9981	0.000	0.2196	0.2196	0.000	0.074120	0.074115	0.007
9.2581	0.9980	0.9980	0.000	0.2196	0.2196	0.000	0.074094	0.074090	0.005
9.2831	0.9980	0.9980	0.000	0.2195	0.2195	0.000	0.074070	0.074064	0.008
9.3081	0.9980	0.9980	0.001	0.2195	0.2195	0.000	0.074045	0.074039	0.008
9.3331	0.9979	0.9979	0.000	0.2194	0.2194	0.000	0.074021	0.074015	0.008
9.3581	0.9979	0.9979	0.000	0.2193	0.2193	0.000	0.073996	0.073990	0.008
9.3831	0.9979	0.9979	0.000	0.2193	0.2193	0.000	0.073972	0.073967	0.007
9.4081	0.9978	0.9978	0.000	0.2192	0.2192	0.000	0.073948	0.073943	0.007
9.4331	0.9978	0.9978	0.000	0.2191	0.2191	0.000	0.073925	0.073920	0.007
9.4581	0.9978	0.9978	0.000	0.2191	0.2191	0.005	0.073903	0.073897	0.008
9.4831	0.9978	0.9978	0.000	0.2190	0.2190	0.000	0.073880	0.073874	0.008
9.5081	0.9978	0.9978	0.000	0.2189	0.2189	0.000	0.073858	0.073853	0.007
9.5331	0.9978	0.9978	0.000	0.2189	0.2189	0.000	0.073837	0.073831	0.008
9.5581	0.9978	0.9978	0.000	0.2188	0.2188	0.000	0.073816	0.073810	0.008
9.5831	0.9978	0.9978	0.000	0.2188	0.2188	0.000	0.073796	0.073790	0.008
9.6081	0.9978	0.9978	0.000	0.2187	0.2187	0.000	0.073777	0.073771	0.008
9.6331	0.9979	0.9979	0.000	0.2187	0.2187	0.000	0.073759	0.073752	0.009
9.6581	0.9979	0.9979	0.000	0.2186	0.2186	0.000	0.073741	0.073735	0.008
9.6831	0.9979	0.9979	0.000	0.2186	0.2186	0.000	0.073723	0.073717	0.008
9.7081	0.9979	0.9979	0.000	0.2185	0.2185	0.000	0.073706	0.073700	0.008
9.7331	0.9980	0.9980	0.000	0.2184	0.2184	0.000	0.073672	0.073668	0.005
9.7581	0.9980	0.9980	0.000	0.2184	0.2184	0.000	0.073660	0.073655	0.007
9.7831	0.9980	0.9980	0.000	0.2184	0.2184	0.000	0.073649	0.073644	0.007
9.8081	0.9981	0.9981	0.000	0.2183	0.2183	0.000	0.073639	0.073633	0.008
9.8331	0.9981	0.9981	0.000	0.2183	0.2183	0.000	0.073629	0.073624	0.007
9.8581	0.9982	0.9982	0.000	0.2182	0.2182	0.000	0.073620	0.073615	0.007
9.8831	0.9982	0.9982	0.000	0.2183	0.2183	0.000	0.073632	0.073628	0.005
9.9081	0.9983	0.9983	0.000	0.2182	0.2182	0.000	0.073607	0.073601	0.008
9.9331	0.9983	0.9983	0.000	0.2181	0.2181	0.000	0.073599	0.073593	0.008
9.9581	0.9984	0.9984	0.000	0.2181	0.2181	0.000	0.073592	0.073587	0.007
9.9831	0.9984	0.9984	0.000	0.2181	0.2181	0.000	0.073587	0.073582	0.007
10.0081	0.9985	0.9985	0.000	0.2181	0.2181	0.000	0.073583	0.073577	0.008
10.0331	0.9985	0.9985	0.000	0.2180	0.2180	0.000	0.073579	0.073574	0.007
10.0581	0.9986	0.9986	0.000	0.2180	0.2180	0.000	0.073576	0.073571	0.007
10.0831	0.9987	0.9987	0.000	0.2180	0.2180	0.000	0.073552	0.073546	0.008
10.1081	0.9987	0.9987	0.000	0.2180	0.2180	0.000	0.073548	0.073542	0.008
10.1331	0.9988	0.9988	0.001	0.2180	0.2180	0.000	0.073544	0.073538	0.008
10.1581	0.9989	0.9989	0.000	0.2179	0.2179	0.000	0.073541	0.073536	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
10.1831	0.9989	0.9989	0.000	0.2179	0.2179	0.000	0.073540	0.073534	0.008
10.2081	0.9990	0.9990	0.000	0.2179	0.2179	0.000	0.073540	0.073534	0.008
10.2331	0.9990	0.9990	0.000	0.2179	0.2179	0.000	0.073539	0.073534	0.007
10.2581	0.9991	0.9991	0.000	0.2179	0.2179	0.000	0.073539	0.073534	0.007
10.2831	0.9992	0.9992	0.000	0.2179	0.2179	0.000	0.073540	0.073536	0.005
10.3081	0.9992	0.9992	0.000	0.2179	0.2179	0.000	0.073540	0.073536	0.005
10.3331	0.9993	0.9993	0.000	0.2179	0.2179	0.000	0.073544	0.073538	0.008
10.3581	0.9994	0.9994	0.000	0.2179	0.2179	0.000	0.073547	0.073542	0.007
10.3831	0.9994	0.9994	0.001	0.2179	0.2179	0.000	0.073550	0.073545	0.007
10.4081	0.9995	0.9995	0.001	0.2179	0.2179	0.000	0.073554	0.073549	0.007
10.4331	0.9995	0.9995	0.000	0.2179	0.2179	0.000	0.073558	0.073553	0.007
10.4581	0.9996	0.9996	0.000	0.2179	0.2179	0.000	0.073563	0.073558	0.007
10.4831	0.9997	0.9997	0.000	0.2179	0.2179	0.000	0.073569	0.073563	0.008
10.5081	0.9997	0.9997	0.000	0.2179	0.2179	0.000	0.073574	0.073569	0.007
10.5331	0.9998	0.9998	0.000	0.2180	0.2180	0.000	0.073581	0.073575	0.008
10.5581	0.9998	0.9998	0.000	0.2180	0.2180	0.000	0.073587	0.073582	0.007
10.5831	0.9999	0.9999	0.000	0.2180	0.2180	0.000	0.073594	0.073589	0.007
10.6081	0.9999	0.9999	0.000	0.2180	0.2180	0.000	0.073602	0.073597	0.007
10.6331	1.0000	1.0000	0.001	0.2180	0.2180	0.000	0.073610	0.073604	0.008
10.6581	1.0000	1.0000	0.000	0.2180	0.2180	0.000	0.073618	0.073613	0.007
10.6831	1.0001	1.0001	0.000	0.2181	0.2181	0.000	0.073627	0.073622	0.007
10.7081	1.0001	1.0001	0.000	0.2181	0.2181	0.000	0.073635	0.073631	0.005
10.7331	1.0001	1.0001	0.000	0.2181	0.2181	0.000	0.073644	0.073639	0.007
10.7581	1.0002	1.0002	0.000	0.2181	0.2181	0.000	0.073653	0.073648	0.007
10.7831	1.0002	1.0002	0.000	0.2181	0.2181	0.000	0.073662	0.073656	0.008
10.8081	1.0003	1.0003	0.000	0.2182	0.2182	0.000	0.073672	0.073667	0.007
10.8331	1.0003	1.0003	0.000	0.2182	0.2182	0.000	0.073681	0.073675	0.008
10.8581	1.0003	1.0003	0.000	0.2182	0.2182	0.000	0.073690	0.073685	0.007
10.8831	1.0004	1.0004	0.000	0.2182	0.2182	0.000	0.073700	0.073694	0.008
10.9081	1.0004	1.0004	0.000	0.2183	0.2183	0.000	0.073710	0.073704	0.008
10.9331	1.0004	1.0004	0.000	0.2183	0.2183	0.000	0.073719	0.073714	0.007
10.9581	1.0004	1.0004	0.000	0.2183	0.2183	0.000	0.073729	0.073723	0.008
10.9831	1.0004	1.0004	0.000	0.2183	0.2183	0.000	0.073738	0.073733	0.007
11.0081	1.0005	1.0005	0.000	0.2184	0.2184	0.000	0.073748	0.073743	0.007
11.0331	1.0005	1.0005	0.000	0.2184	0.2184	0.000	0.073758	0.073752	0.008
11.0581	1.0005	1.0005	0.000	0.2184	0.2184	0.000	0.073768	0.073762	0.008
11.0831	1.0005	1.0005	0.000	0.2184	0.2184	0.000	0.073777	0.073771	0.008
11.1081	1.0005	1.0005	0.000	0.2185	0.2185	0.000	0.073786	0.073781	0.007
11.1331	1.0005	1.0005	0.000	0.2185	0.2185	0.000	0.073795	0.073791	0.005
11.1581	1.0005	1.0005	0.000	0.2185	0.2185	0.000	0.073804	0.073800	0.005
11.1831	1.0005	1.0005	0.000	0.2185	0.2185	0.000	0.073814	0.073807	0.009

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU) *		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
11.2081	1.0006	1.0006	0.000	0.2186	0.2186	0.000	0.073822	0.073816	0.008
11.2331	1.0006	1.0006	0.000	0.2186	0.2186	0.000	0.073851	0.073846	0.007
11.2581	1.0006	1.0006	0.000	0.2186	0.2186	0.000	0.073859	0.073853	0.008
11.2831	1.0005	1.0005	0.000	0.2186	0.2186	0.000	0.073865	0.073860	0.007
11.3081	1.0005	1.0005	0.000	0.2187	0.2187	0.000	0.073872	0.073867	0.007
11.3331	1.0005	1.0005	0.000	0.2187	0.2187	0.000	0.073878	0.073873	0.007
11.3581	1.0005	1.0005	0.000	0.2187	0.2187	0.000	0.073884	0.073879	0.007
11.383	1.0005	1.0005	0.000	0.2187	0.2187	0.000	0.073889	0.073884	0.007
11.408	1.0005	1.0005	0.000	0.2187	0.2187	0.000	0.073895	0.073889	0.008
11.433	1.0005	1.0005	0.000	0.2188	0.2188	0.000	0.073900	0.073895	0.007
11.458	1.0005	1.0005	0.000	0.2188	0.2188	0.000	0.073905	0.073900	0.007
11.483	1.0005	1.0005	0.000	0.2188	0.2188	0.000	0.073910	0.073905	0.007
11.508	1.0005	1.0005	0.000	0.2188	0.2188	0.000	0.073914	0.073908	0.008
11.533	1.0005	1.0005	0.000	0.2188	0.2188	0.000	0.073919	0.073913	0.008
11.558	1.0004	1.0004	0.000	0.2188	0.2188	0.000	0.073921	0.073916	0.007
11.583	1.0004	1.0004	0.000	0.2189	0.2189	0.000	0.073926	0.073920	0.008
11.608	1.0004	1.0004	0.000	0.2189	0.2189	0.000	0.073912	0.073906	0.008
11.633	1.0004	1.0004	0.000	0.2189	0.2189	0.000	0.073942	0.073937	0.007
11.658	1.0004	1.0004	0.000	0.2189	0.2189	0.000	0.073932	0.073927	0.007
11.683	1.0003	1.0003	0.000	0.2189	0.2189	0.000	0.073936	0.073931	0.007
11.708	1.0003	1.0003	0.000	0.2189	0.2189	0.000	0.073939	0.073933	0.008
11.733	1.0003	1.0003	0.000	0.2189	0.2189	0.000	0.073940	0.073936	0.005
11.758	1.0003	1.0003	0.000	0.2189	0.2189	0.000	0.073942	0.073937	0.007
11.783	1.0002	1.0002	0.000	0.2189	0.2189	0.000	0.073944	0.073939	0.007
11.808	1.0002	1.0002	0.000	0.2190	0.2190	0.000	0.073945	0.073940	0.007
11.833	1.0002	1.0002	0.000	0.2190	0.2190	0.000	0.073946	0.073940	0.008
11.858	1.0002	1.0002	0.000	0.2190	0.2190	0.000	0.073947	0.073942	0.007
11.883	1.0001	1.0001	0.000	0.2190	0.2190	0.000	0.073946	0.073941	0.007
11.908	1.0001	1.0001	0.000	0.2190	0.2190	0.000	0.073946	0.073941	0.007
11.933	1.0001	1.0001	0.000	0.2190	0.2190	0.000	0.073947	0.073941	0.008
11.958	1.0001	1.0001	0.000	0.2190	0.2190	0.000	0.073946	0.073941	0.007
11.983	1.0000	1.0000	0.000	0.2190	0.2190	0.000	0.073946	0.073940	0.008
12.008	1.0000	1.0000	0.000	0.2190	0.2190	0.000	0.073945	0.073940	0.007
12.033	1.0000	1.0000	0.000	0.2190	0.2190	0.000	0.073945	0.073938	0.009
12.058	1.0000	1.0000	0.000	0.2190	0.2190	0.000	0.073942	0.073938	0.005
12.083	1.0000	1.0000	0.000	0.2190	0.2190	0.000	0.073941	0.073936	0.007
12.108	0.9999	0.9999	0.001	0.2190	0.2190	0.000	0.073940	0.073935	0.007
12.133	0.9999	0.9999	0.000	0.2190	0.2190	0.000	0.073939	0.073932	0.009
12.158	0.9999	0.9999	0.000	0.2190	0.2190	0.000	0.073935	0.073931	0.005
12.183	0.9999	0.9999	0.000	0.2190	0.2190	0.000	0.073934	0.073928	0.008
12.208	0.9998	0.9998	0.000	0.2190	0.2190	0.000	0.073931	0.073926	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
12.233	0.9998	0.9998	0.000	0.2190	0.2190	0.000	0.073929	0.073924	0.007
12.258	0.9998	0.9998	0.000	0.2190	0.2190	0.000	0.073926	0.073921	0.007
12.283	0.9998	0.9998	0.000	0.2190	0.2190	0.000	0.073924	0.073919	0.007
12.308	0.9997	0.9997	0.000	0.2190	0.2189	0.005	0.073921	0.073916	0.007
12.333	0.9997	0.9997	0.000	0.2189	0.2189	0.000	0.073919	0.073913	0.008
12.358	0.9997	0.9997	0.000	0.2189	0.2189	0.000	0.073915	0.073911	0.005
12.383	0.9997	0.9997	0.001	0.2189	0.2189	0.000	0.073912	0.073907	0.007
12.408	0.9997	0.9997	0.000	0.2189	0.2189	0.000	0.073909	0.073903	0.008
12.433	0.9997	0.9997	0.000	0.2189	0.2189	0.000	0.073906	0.073901	0.007
12.458	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073903	0.073898	0.007
12.483	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073899	0.073894	0.007
12.508	0.9996	0.9996	0.000	0.2189	0.2189	0.005	0.073896	0.073891	0.007
12.533	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073893	0.073887	0.008
12.558	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073888	0.073883	0.007
12.583	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073884	0.073879	0.007
12.608	0.9996	0.9996	0.000	0.2189	0.2189	0.000	0.073882	0.073877	0.007
12.633	0.9995	0.9995	0.000	0.2189	0.2189	0.000	0.073878	0.073873	0.007
12.658	0.9995	0.9995	0.001	0.2188	0.2188	0.000	0.073875	0.073870	0.007
12.683	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073871	0.073866	0.007
12.708	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073868	0.073862	0.008
12.733	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073864	0.073859	0.007
12.758	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073861	0.073855	0.008
12.783	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073857	0.073852	0.007
12.808	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073854	0.073849	0.007
12.833	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073850	0.073846	0.005
12.858	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073847	0.073843	0.005
12.883	0.9995	0.9995	0.000	0.2188	0.2188	0.000	0.073844	0.073839	0.007
12.908	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073842	0.073837	0.007
12.933	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073838	0.073833	0.007
12.958	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073836	0.073830	0.008
12.983	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073833	0.073828	0.007
13.008	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073830	0.073825	0.007
13.033	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073828	0.073822	0.008
13.058	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073825	0.073820	0.007
13.083	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073823	0.073817	0.008
13.108	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073821	0.073814	0.009
13.133	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073818	0.073812	0.008
13.158	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073815	0.073810	0.007
13.183	0.9995	0.9995	0.000	0.2187	0.2187	0.000	0.073814	0.073809	0.007
13.208	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073812	0.073807	0.007
13.233	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073810	0.073805	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
13.258	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073808	0.073802	0.008
13.283	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073807	0.073802	0.007
13.308	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073827	0.073821	0.008
13.333	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073813	0.073808	0.007
13.358	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073801	0.073796	0.007
13.383	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073791	0.073784	0.009
13.408	0.9995	0.9995	0.000	0.2186	0.2186	0.000	0.073801	0.073796	0.007
13.433	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073801	0.073795	0.008
13.458	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073799	0.073795	0.005
13.483	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073798	0.073793	0.007
13.508	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073798	0.073793	0.007
13.533	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073797	0.073793	0.005
13.558	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073798	0.073792	0.008
13.583	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073797	0.073791	0.008
13.608	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073796	0.073791	0.007
13.633	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073797	0.073792	0.007
13.658	0.9996	0.9996	0.000	0.2186	0.2186	0.000	0.073796	0.073791	0.007
13.683	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073797	0.073792	0.007
13.708	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073797	0.073791	0.008
13.733	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073797	0.073792	0.007
13.758	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073798	0.073792	0.008
13.783	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073798	0.073793	0.007
13.808	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073800	0.073793	0.009
13.833	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073799	0.073794	0.007
13.858	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073800	0.073795	0.007
13.883	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073801	0.073796	0.007
13.908	0.9997	0.9997	0.000	0.2186	0.2186	0.000	0.073802	0.073797	0.007
13.933	0.9997	0.9998	0.001	0.2186	0.2186	0.000	0.073803	0.073797	0.008
13.958	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073804	0.073798	0.008
13.983	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073804	0.073799	0.007
14.008	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073806	0.073801	0.007
14.033	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073807	0.073802	0.007
14.058	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073808	0.073803	0.007
14.083	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073810	0.073804	0.008
14.108	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073811	0.073805	0.008
14.133	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073812	0.073806	0.008
14.158	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073813	0.073808	0.007
14.183	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073815	0.073809	0.008
14.208	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073816	0.073810	0.008
14.233	0.9998	0.9998	0.000	0.2186	0.2186	0.000	0.073818	0.073812	0.008
14.258	0.9998	0.9999	0.001	0.2186	0.2186	0.000	0.073818	0.073813	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
14.283	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073820	0.073815	0.007
14.308	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073821	0.073816	0.007
14.333	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073823	0.073817	0.008
14.358	0.9999	0.9999	0.001	0.2186	0.2186	0.000	0.073824	0.073818	0.008
14.383	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073825	0.073821	0.005
14.408	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073826	0.073821	0.007
14.433	0.9999	0.9999	0.000	0.2186	0.2186	0.005	0.073828	0.073823	0.007
14.458	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073829	0.073824	0.007
14.483	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073831	0.073826	0.007
14.508	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073832	0.073827	0.007
14.533	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073833	0.073829	0.005
14.558	0.9999	0.9999	0.000	0.2186	0.2186	0.000	0.073835	0.073830	0.007
14.583	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073836	0.073831	0.007
14.608	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073838	0.073833	0.007
14.633	0.9999	0.9999	0.001	0.2187	0.2187	0.000	0.073838	0.073833	0.007
14.658	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073840	0.073834	0.008
14.683	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073841	0.073835	0.008
14.708	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073842	0.073836	0.008
14.733	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073843	0.073837	0.008
14.758	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073844	0.073839	0.007
14.783	0.9999	0.9999	0.000	0.2187	0.2187	0.005	0.073845	0.073840	0.007
14.808	0.9999	0.9999	0.001	0.2187	0.2187	0.000	0.073847	0.073841	0.008
14.833	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073847	0.073841	0.008
14.858	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073848	0.073843	0.007
14.883	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073849	0.073843	0.008
14.908	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073850	0.073844	0.008
14.933	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073852	0.073846	0.008
14.958	0.9999	0.9999	0.001	0.2187	0.2187	0.000	0.073851	0.073846	0.007
14.983	0.9999	0.9999	0.000	0.2187	0.2187	0.000	0.073845	0.073840	0.007
15.008	0.9999	0.9999	0.000	0.2188	0.2188	0.000	0.073855	0.073850	0.007
15.008	0.8843	0.8843	0.000	0.4340	0.4340	0.000	0.775650	0.775650	0.000
15.033	0.8620	0.8620	0.000	0.4235	0.4235	0.000	0.739730	0.739730	0.000
15.058	0.8478	0.8478	0.000	0.4218	0.4218	0.000	0.719370	0.719370	0.000
15.083	0.8385	0.8385	0.000	0.4186	0.4186	0.000	0.705030	0.705030	0.000
15.108	0.8325	0.8325	0.001	0.4153	0.4153	0.000	0.694950	0.694940	0.001
15.133	0.8287	0.8287	0.000	0.4128	0.4128	0.000	0.688000	0.688000	0.000
15.158	0.8266	0.8266	0.000	0.4113	0.4113	0.000	0.683620	0.683620	0.000
15.183	0.8258	0.8258	0.000	0.4108	0.4108	0.000	0.681360	0.681360	0.000
15.208	0.8262	0.8262	0.000	0.4112	0.4112	0.000	0.680890	0.680890	0.000
15.233	0.8277	0.8277	0.000	0.4124	0.4124	0.000	0.681930	0.681930	0.000
15.258	0.8300	0.8300	0.000	0.4143	0.4143	0.000	0.684290	0.684280	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
15.283	0.8331	0.8331	0.000	0.4168	0.4168	0.000	0.687780	0.687780	0.000
15.308	0.8371	0.8371	0.000	0.4198	0.4198	0.000	0.692200	0.692200	0.000
15.333	0.8417	0.8417	0.000	0.4233	0.4233	0.000	0.697560	0.697560	0.000
15.358	0.8469	0.8469	0.000	0.4273	0.4273	0.000	0.703660	0.703660	0.000
15.383	0.8527	0.8527	0.000	0.4318	0.4318	0.000	0.710390	0.710390	0.000
15.408	0.8591	0.8591	0.000	0.4369	0.4369	0.000	0.717640	0.717630	0.001
15.433	0.8659	0.8659	0.000	0.4426	0.4426	0.000	0.725260	0.725260	0.000
15.458	0.8731	0.8731	0.000	0.4490	0.4490	0.000	0.733060	0.733060	0.000
15.483	0.8807	0.8807	0.000	0.4564	0.4564	0.000	0.740700	0.740700	0.000
15.508	0.8885	0.8885	0.000	0.4651	0.4651	0.000	0.747710	0.747700	0.001
15.533	0.8964	0.8964	0.000	0.4753	0.4753	0.000	0.753410	0.753410	0.000
15.558	0.9046	0.9046	0.000	0.4880	0.4880	0.000	0.756820	0.756820	0.000
15.583	0.9133	0.9133	0.000	0.5050	0.5050	0.000	0.756060	0.756060	0.000
15.608	0.9234	0.9234	0.000	0.5301	0.5301	0.000	0.746340	0.746340	0.000
15.633	0.9389	0.9389	0.000	0.5765	0.5765	0.000	0.707720	0.707710	0.001
15.658	0.9977	0.9977	0.001	0.6389	0.6389	0.000	0.425040	0.425010	0.007
15.683	1.0620	1.0620	0.000	0.3811	0.3811	0.000	0.168770	0.168760	0.006
15.708	1.0773	1.0773	0.000	0.3417	0.3417	0.000	0.160430	0.160430	0.000
15.733	1.0867	1.0867	0.000	0.3335	0.3335	0.000	0.159920	0.159920	0.000
15.758	1.0935	1.0935	0.000	0.3330	0.3330	0.000	0.160970	0.160960	0.006
15.783	1.0983	1.0983	0.000	0.3351	0.3351	0.000	0.162270	0.162270	0.000
15.808	1.1013	1.1013	0.000	0.3377	0.3377	0.003	0.163380	0.163380	0.000
15.833	1.1027	1.1027	0.000	0.3403	0.3403	0.000	0.164160	0.164150	0.006
15.858	1.1026	1.1026	0.000	0.3423	0.3423	0.000	0.164530	0.164520	0.006
15.883	1.1011	1.1011	0.000	0.3440	0.3440	0.000	0.164580	0.164580	0.000
15.908	1.0986	1.0986	0.000	0.3453	0.3453	0.000	0.164350	0.164350	0.000
15.933	1.0954	1.0954	0.000	0.3463	0.3463	0.000	0.163950	0.163940	0.006
15.958	1.0918	1.0918	0.000	0.3470	0.3470	0.000	0.163440	0.163430	0.006
15.983	1.0881	1.0881	0.000	0.3479	0.3479	0.000	0.162940	0.162940	0.000
16.008	1.0846	1.0846	0.000	0.3487	0.3487	0.000	0.162500	0.162490	0.006
16.033	1.0814	1.0814	0.000	0.3497	0.3497	0.000	0.162140	0.162130	0.006
16.058	1.0786	1.0786	0.000	0.3508	0.3508	0.000	0.161900	0.161900	0.000
16.083	1.0762	1.0762	0.000	0.3519	0.3519	0.000	0.161760	0.161750	0.006
16.108	1.0742	1.0742	0.000	0.3532	0.3532	0.000	0.161710	0.161700	0.006
16.133	1.0723	1.0723	0.000	0.3546	0.3546	0.003	0.161730	0.161720	0.006
16.158	1.0707	1.0707	0.000	0.3560	0.3560	0.000	0.161790	0.161790	0.000
16.183	1.0691	1.0691	0.000	0.3575	0.3575	0.000	0.161870	0.161870	0.000
16.208	1.0674	1.0674	0.000	0.3589	0.3589	0.000	0.161940	0.161930	0.006
16.233	1.0657	1.0657	0.000	0.3602	0.3602	0.000	0.161970	0.161970	0.000
16.258	1.0637	1.0637	0.000	0.3614	0.3614	0.000	0.161960	0.161950	0.006
16.283	1.0616	1.0616	0.000	0.3625	0.3625	0.000	0.161850	0.161850	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
16.308	1.0593	1.0593	0.000	0.3634	0.3634	0.000	0.161740	0.161730	0.006
16.333	1.0568	1.0568	0.000	0.3641	0.3641	0.000	0.161530	0.161520	0.006
16.358	1.0541	1.0541	0.000	0.3648	0.3648	0.000	0.161320	0.161320	0.000
16.383	1.0514	1.0514	0.000	0.3653	0.3653	0.000	0.161080	0.161080	0.000
16.408	1.0487	1.0487	0.000	0.3660	0.3660	0.000	0.160830	0.160830	0.000
16.433	1.0460	1.0460	0.000	0.3666	0.3666	0.000	0.160650	0.160640	0.006
16.458	1.0433	1.0433	0.000	0.3671	0.3671	0.000	0.160440	0.160430	0.006
16.483	1.0407	1.0407	0.000	0.3677	0.3677	0.000	0.160270	0.160260	0.006
16.508	1.0383	1.0383	0.000	0.3683	0.3683	0.000	0.160100	0.160100	0.000
16.533	1.0359	1.0359	0.000	0.3690	0.3690	0.000	0.160010	0.160000	0.006
16.558	1.0337	1.0337	0.000	0.3697	0.3697	0.000	0.159940	0.159930	0.006
16.583	1.0315	1.0315	0.000	0.3704	0.3704	0.000	0.159890	0.159880	0.006
16.608	1.0295	1.0295	0.000	0.3711	0.3711	0.000	0.159840	0.159840	0.000
16.633	1.0275	1.0275	0.000	0.3717	0.3717	0.000	0.159800	0.159800	0.000
16.658	1.0256	1.0256	0.000	0.3723	0.3723	0.000	0.159750	0.159740	0.006
16.683	1.0237	1.0237	0.000	0.3727	0.3727	0.000	0.159680	0.159670	0.006
16.708	1.0219	1.0219	0.000	0.3731	0.3731	0.000	0.159560	0.159550	0.006
16.733	1.0200	1.0200	0.000	0.3734	0.3734	0.000	0.159440	0.159430	0.006
16.758	1.0182	1.0182	0.000	0.3736	0.3736	0.000	0.159290	0.159290	0.000
16.783	1.0165	1.0165	0.000	0.3737	0.3737	0.000	0.159130	0.159120	0.006
16.808	1.0147	1.0147	0.000	0.3738	0.3738	0.000	0.158950	0.158940	0.006
16.833	1.0130	1.0130	0.000	0.3738	0.3738	0.000	0.158760	0.158760	0.000
16.858	1.0113	1.0113	0.000	0.3738	0.3738	0.000	0.158580	0.158570	0.006
16.883	1.0097	1.0097	0.000	0.3738	0.3738	0.000	0.158400	0.158390	0.006
16.908	1.0081	1.0081	0.000	0.3737	0.3737	0.000	0.158230	0.158220	0.006
16.933	1.0066	1.0066	0.000	0.3737	0.3737	0.000	0.158070	0.158060	0.006
16.958	1.0052	1.0052	0.000	0.3737	0.3737	0.000	0.157920	0.157920	0.000
16.983	1.0038	1.0038	0.000	0.3737	0.3737	0.000	0.157780	0.157780	0.000
17.008	1.0026	1.0026	0.000	0.3737	0.3737	0.000	0.157650	0.157650	0.000
17.033	1.0014	1.0014	0.000	0.3736	0.3736	0.000	0.157520	0.157520	0.000
17.058	1.0003	1.0003	0.000	0.3735	0.3735	0.000	0.157390	0.157380	0.006
17.083	0.9993	0.9993	0.000	0.3734	0.3734	0.000	0.157250	0.157240	0.006
17.108	0.9983	0.9983	0.000	0.3732	0.3732	0.000	0.157100	0.157090	0.006
17.133	0.9974	0.9974	0.000	0.3730	0.3730	0.000	0.156930	0.156920	0.006
17.158	0.9965	0.9965	0.000	0.3727	0.3727	0.000	0.156750	0.156750	0.000
17.183	0.9957	0.9957	0.000	0.3724	0.3724	0.000	0.156560	0.156550	0.006
17.208	0.9949	0.9949	0.000	0.3721	0.3721	0.000	0.156360	0.156350	0.006
17.233	0.9942	0.9942	0.001	0.3717	0.3717	0.000	0.156150	0.156140	0.006
17.258	0.9935	0.9935	0.000	0.3712	0.3712	0.000	0.155940	0.155930	0.006
17.283	0.9928	0.9928	0.000	0.3708	0.3708	0.000	0.155730	0.155720	0.006
17.308	0.9922	0.9922	0.000	0.3704	0.3704	0.000	0.155520	0.155510	0.006

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
17.333	0.9917	0.9917	0.000	0.3700	0.3700	0.000	0.155320	0.155310	0.006
17.358	0.9911	0.9911	0.000	0.3695	0.3695	0.000	0.155120	0.155120	0.000
17.383	0.9907	0.9907	0.001	0.3691	0.3691	0.000	0.154930	0.154930	0.000
17.408	0.9903	0.9903	0.000	0.3687	0.3687	0.000	0.154750	0.154750	0.000
17.433	0.9899	0.9899	0.001	0.3683	0.3683	0.000	0.154580	0.154570	0.006
17.458	0.9896	0.9896	0.000	0.3678	0.3678	0.000	0.154400	0.154400	0.000
17.483	0.9893	0.9893	0.000	0.3674	0.3674	0.000	0.154230	0.154230	0.000
17.508	0.9891	0.9891	0.000	0.3670	0.3670	0.000	0.154060	0.154060	0.000
17.533	0.9889	0.9889	0.000	0.3665	0.3665	0.000	0.153890	0.153890	0.000
17.558	0.9888	0.9888	0.000	0.3660	0.3660	0.000	0.153750	0.153740	0.007
17.583	0.9887	0.9887	0.000	0.3656	0.3656	0.000	0.153570	0.153570	0.000
17.608	0.9886	0.9886	0.000	0.3651	0.3651	0.000	0.153400	0.153390	0.007
17.633	0.9885	0.9885	0.000	0.3646	0.3646	0.000	0.153220	0.153220	0.000
17.658	0.9885	0.9885	0.000	0.3640	0.3640	0.000	0.153050	0.153040	0.007
17.683	0.9885	0.9885	0.000	0.3635	0.3635	0.000	0.152870	0.152870	0.000
17.708	0.9885	0.9885	0.000	0.3630	0.3630	0.000	0.152710	0.152710	0.000
17.733	0.9885	0.9885	0.000	0.3625	0.3625	0.000	0.152550	0.152550	0.000
17.758	0.9886	0.9886	0.000	0.3620	0.3620	0.000	0.152400	0.152400	0.000
17.783	0.9887	0.9887	0.000	0.3616	0.3616	0.000	0.152260	0.152250	0.007
17.808	0.9888	0.9888	0.000	0.3611	0.3611	0.000	0.152120	0.152110	0.007
17.833	0.9889	0.9889	0.000	0.3606	0.3606	0.000	0.151990	0.151980	0.007
17.858	0.9891	0.9891	0.000	0.3602	0.3602	0.000	0.151870	0.151860	0.007
17.8829	0.9892	0.9892	0.001	0.3598	0.3598	0.000	0.151760	0.151750	0.007
17.9079	0.9894	0.9894	0.000	0.3594	0.3594	0.000	0.151650	0.151650	0.000
17.9329	0.9896	0.9896	0.000	0.3590	0.3590	0.000	0.151550	0.151550	0.000
17.9579	0.9899	0.9899	0.000	0.3586	0.3586	0.000	0.151460	0.151450	0.007
17.9829	0.9901	0.9901	0.000	0.3582	0.3582	0.000	0.151360	0.151360	0.000
18.0079	0.9904	0.9904	0.000	0.3579	0.3579	0.000	0.151300	0.151300	0.000
18.0329	0.9906	0.9906	0.000	0.3576	0.3576	0.000	0.151220	0.151210	0.007
18.0579	0.9909	0.9909	0.000	0.3572	0.3572	0.000	0.151130	0.151120	0.007
18.0829	0.9912	0.9912	0.000	0.3568	0.3568	0.000	0.151050	0.151050	0.000
18.1079	0.9915	0.9915	0.000	0.3565	0.3565	0.000	0.150990	0.150980	0.007
18.1329	0.9918	0.9918	0.000	0.3562	0.3562	0.000	0.150920	0.150910	0.007
18.1579	0.9921	0.9921	0.000	0.3558	0.3558	0.000	0.150850	0.150840	0.007
18.1829	0.9923	0.9923	0.000	0.3556	0.3556	0.000	0.150830	0.150820	0.007
18.2079	0.9927	0.9927	0.000	0.3552	0.3552	0.000	0.150750	0.150740	0.007
18.2329	0.9930	0.9930	0.000	0.3549	0.3549	0.000	0.150700	0.150700	0.000
18.2579	0.9933	0.9933	0.000	0.3547	0.3547	0.000	0.150670	0.150660	0.007
18.2829	0.9936	0.9936	0.000	0.3544	0.3544	0.000	0.150640	0.150630	0.007
18.3079	0.9939	0.9939	0.000	0.3543	0.3543	0.000	0.150630	0.150620	0.007
18.3329	0.9942	0.9942	0.000	0.3541	0.3541	0.000	0.150620	0.150610	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
18.3579	0.9946	0.9946	0.001	0.3539	0.3539	0.000	0.150610	0.150600	0.007
18.3829	0.9949	0.9949	0.000	0.3538	0.3538	0.000	0.150600	0.150600	0.000
18.4079	0.9952	0.9952	0.000	0.3537	0.3537	0.000	0.150630	0.150620	0.007
18.4329	0.9955	0.9956	0.001	0.3536	0.3536	0.000	0.150630	0.150630	0.000
18.4579	0.9959	0.9959	0.000	0.3535	0.3535	0.000	0.150640	0.150640	0.000
18.4829	0.9962	0.9962	0.000	0.3534	0.3534	0.000	0.150650	0.150650	0.000
18.5079	0.9965	0.9965	0.000	0.3533	0.3533	0.000	0.150660	0.150660	0.000
18.5329	0.9968	0.9968	0.000	0.3532	0.3532	0.000	0.150680	0.150680	0.000
18.5579	0.9971	0.9971	0.000	0.3531	0.3531	0.000	0.150700	0.150700	0.000
18.5829	0.9974	0.9974	0.000	0.3531	0.3531	0.000	0.150730	0.150720	0.007
18.6079	0.9977	0.9977	0.000	0.3531	0.3531	0.000	0.150760	0.150750	0.007
18.6329	0.9980	0.9980	0.000	0.3530	0.3530	0.000	0.150790	0.150780	0.007
18.6579	0.9983	0.9983	0.000	0.3530	0.3530	0.000	0.150820	0.150820	0.000
18.6829	0.9986	0.9986	0.001	0.3530	0.3530	0.000	0.150870	0.150860	0.007
18.7079	0.9988	0.9988	0.000	0.3531	0.3531	0.000	0.150910	0.150910	0.000
18.7329	0.9991	0.9991	0.000	0.3530	0.3530	0.000	0.150940	0.150940	0.000
18.7579	0.9994	0.9994	0.000	0.3531	0.3531	0.000	0.150990	0.150980	0.007
18.7829	0.9996	0.9996	0.000	0.3531	0.3531	0.000	0.151040	0.151030	0.007
18.8079	0.9998	0.9998	0.000	0.3532	0.3532	0.000	0.151090	0.151080	0.007
18.8329	1.0001	1.0001	0.000	0.3532	0.3532	0.000	0.151140	0.151140	0.000
18.8579	1.0003	1.0003	0.000	0.3533	0.3533	0.000	0.151220	0.151220	0.000
18.8829	1.0005	1.0005	0.000	0.3534	0.3534	0.000	0.151250	0.151240	0.007
18.9079	1.0007	1.0007	0.000	0.3535	0.3535	0.000	0.151300	0.151300	0.000
18.9329	1.0009	1.0009	0.000	0.3536	0.3536	0.000	0.151390	0.151380	0.007
18.9579	1.0011	1.0011	0.000	0.3537	0.3537	0.000	0.151420	0.151410	0.007
18.9829	1.0013	1.0013	0.000	0.3538	0.3538	0.000	0.151480	0.151470	0.007
19.0079	1.0015	1.0015	0.000	0.3539	0.3539	0.000	0.151560	0.151560	0.000
19.0329	1.0017	1.0017	0.000	0.3541	0.3541	0.000	0.151620	0.151620	0.000
19.0579	1.0018	1.0018	0.000	0.3543	0.3543	0.000	0.151670	0.151660	0.007
19.0829	1.0020	1.0020	0.000	0.3544	0.3544	0.000	0.151730	0.151730	0.000
19.1079	1.0021	1.0021	0.000	0.3546	0.3546	0.000	0.151790	0.151790	0.000
19.1329	1.0022	1.0022	0.000	0.3547	0.3547	0.000	0.151860	0.151850	0.007
19.1579	1.0023	1.0023	0.000	0.3549	0.3549	0.003	0.151920	0.151910	0.007
19.1829	1.0025	1.0025	0.000	0.3550	0.3550	0.000	0.151980	0.151970	0.007
19.2079	1.0026	1.0026	0.000	0.3552	0.3552	0.000	0.152040	0.152030	0.007
19.2329	1.0026	1.0026	0.000	0.3554	0.3554	0.000	0.152100	0.152090	0.007
19.2579	1.0027	1.0027	0.000	0.3555	0.3555	0.000	0.152160	0.152150	0.007
19.2829	1.0028	1.0028	0.000	0.3557	0.3557	0.000	0.152220	0.152210	0.007
19.3079	1.0029	1.0029	0.000	0.3559	0.3559	0.000	0.152280	0.152270	0.007
19.3329	1.0029	1.0029	0.000	0.3560	0.3560	0.000	0.152330	0.152330	0.000
19.3579	1.0030	1.0030	0.000	0.3562	0.3562	0.000	0.152390	0.152380	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
19.3829	1.0030	1.0030	0.000	0.3564	0.3564	0.000	0.152440	0.152440	0.000
19.4079	1.0030	1.0030	0.000	0.3566	0.3566	0.000	0.152500	0.152490	0.007
19.4329	1.0030	1.0030	0.000	0.3567	0.3567	0.000	0.152550	0.152540	0.007
19.4579	1.0031	1.0031	0.000	0.3569	0.3569	0.000	0.152610	0.152600	0.007
19.4829	1.0031	1.0031	0.000	0.3571	0.3571	0.000	0.152660	0.152650	0.007
19.5079	1.0031	1.0031	0.000	0.3572	0.3572	0.000	0.152710	0.152700	0.007
19.5329	1.0031	1.0031	0.000	0.3573	0.3573	0.000	0.152720	0.152720	0.000
19.5579	1.0030	1.0030	0.000	0.3575	0.3575	0.000	0.152770	0.152770	0.000
19.5829	1.0030	1.0030	0.000	0.3576	0.3576	0.000	0.152820	0.152810	0.007
19.6079	1.0030	1.0030	0.000	0.3578	0.3578	0.000	0.152860	0.152860	0.000
19.6329	1.0029	1.0029	0.000	0.3580	0.3580	0.000	0.152900	0.152900	0.000
19.6579	1.0029	1.0029	0.000	0.3581	0.3581	0.000	0.152950	0.152940	0.007
19.6829	1.0029	1.0029	0.000	0.3582	0.3582	0.003	0.152970	0.152970	0.000
19.7079	1.0028	1.0028	0.000	0.3584	0.3584	0.000	0.153030	0.153020	0.007
19.7329	1.0027	1.0027	0.000	0.3586	0.3586	0.000	0.153060	0.153060	0.000
19.7579	1.0027	1.0027	0.000	0.3587	0.3587	0.000	0.153090	0.153080	0.007
19.7829	1.0026	1.0026	0.000	0.3588	0.3588	0.000	0.153120	0.153110	0.007
19.8079	1.0025	1.0025	0.000	0.3590	0.3590	0.000	0.153150	0.153140	0.007
19.8329	1.0025	1.0025	0.000	0.3591	0.3591	0.000	0.153180	0.153170	0.007
19.8579	1.0024	1.0024	0.000	0.3592	0.3592	0.000	0.153210	0.153200	0.007
19.8829	1.0023	1.0023	0.000	0.3594	0.3594	0.000	0.153260	0.153250	0.007
19.9079	1.0022	1.0022	0.000	0.3595	0.3595	0.000	0.153270	0.153260	0.007
19.9329	1.0021	1.0021	0.000	0.3596	0.3596	0.000	0.153300	0.153290	0.007
19.9579	1.0020	1.0020	0.000	0.3597	0.3597	0.000	0.153280	0.153270	0.007
19.9829	1.0019	1.0019	0.000	0.3598	0.3598	0.000	0.153290	0.153280	0.007
20.0079	1.0018	1.0018	0.000	0.3599	0.3599	0.000	0.153330	0.153330	0.000
20.0079	0.8905	0.8905	0.000	0.5405	0.5405	0.000	0.822900	0.822890	0.001
20.0329	0.8642	0.8642	0.000	0.5433	0.5433	0.000	0.788050	0.788040	0.001
20.0579	0.8487	0.8487	0.000	0.5366	0.5366	0.000	0.765160	0.765160	0.000
20.0829	0.8387	0.8387	0.000	0.5317	0.5317	0.000	0.750460	0.750450	0.001
20.1079	0.8322	0.8322	0.000	0.5284	0.5284	0.000	0.741150	0.741150	0.000
20.1329	0.8282	0.8282	0.000	0.5262	0.5262	0.000	0.735440	0.735430	0.001
20.1579	0.8260	0.8260	0.001	0.5249	0.5249	0.000	0.732420	0.732410	0.001
20.1829	0.8253	0.8253	0.000	0.5244	0.5244	0.000	0.731550	0.731540	0.001
20.2079	0.8257	0.8257	0.000	0.5245	0.5245	0.000	0.732460	0.732460	0.000
20.2329	0.8273	0.8273	0.000	0.5252	0.5252	0.000	0.734940	0.734930	0.001
20.2579	0.8297	0.8297	0.000	0.5265	0.5265	0.000	0.738780	0.738770	0.001
20.2829	0.8330	0.8330	0.000	0.5281	0.5281	0.000	0.743850	0.743850	0.000
20.3079	0.8371	0.8371	0.000	0.5299	0.5299	0.000	0.749960	0.749950	0.001
20.3329	0.8418	0.8418	0.000	0.5321	0.5321	0.000	0.757140	0.757140	0.000
20.3579	0.8472	0.8472	0.000	0.5345	0.5345	0.000	0.765260	0.765260	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
20.3829	0.8531	0.8531	0.000	0.5371	0.5371	0.000	0.774230	0.774230	0.000
20.4079	0.8595	0.8595	0.000	0.5398	0.5398	0.000	0.783980	0.783980	0.000
20.4329	0.8663	0.8663	0.000	0.5426	0.5426	0.000	0.794430	0.794420	0.001
20.4579	0.8734	0.8734	0.000	0.5454	0.5454	0.000	0.805390	0.805380	0.001
20.4829	0.8805	0.8805	0.000	0.5483	0.5483	0.000	0.816620	0.816610	0.001
20.5079	0.8876	0.8876	0.000	0.5511	0.5511	0.000	0.827840	0.827840	0.000
20.5329	0.8945	0.8945	0.000	0.5538	0.5538	0.000	0.838810	0.838810	0.000
20.5579	0.9009	0.9009	0.000	0.5565	0.5565	0.000	0.849330	0.849330	0.000
20.5829	0.9070	0.9070	0.000	0.5591	0.5591	0.000	0.859280	0.859280	0.000
20.6079	0.9126	0.9126	0.001	0.5616	0.5616	0.000	0.868610	0.868610	0.000
20.6329	0.9178	0.9178	0.000	0.5641	0.5641	0.000	0.877370	0.877370	0.000
20.6579	0.9226	0.9226	0.000	0.5665	0.5665	0.000	0.885650	0.885650	0.000
20.6829	0.9273	0.9273	0.000	0.5690	0.5690	0.000	0.893560	0.893550	0.001
20.7079	0.9317	0.9317	0.000	0.5715	0.5714	0.002	0.901190	0.901190	0.000
20.7329	0.9360	0.9360	0.000	0.5739	0.5739	0.000	0.908640	0.908640	0.000
20.7579	0.9403	0.9403	0.000	0.5763	0.5763	0.000	0.915940	0.915930	0.001
20.7829	0.9444	0.9444	0.001	0.5787	0.5787	0.000	0.923090	0.923080	0.001
20.8079	0.9485	0.9485	0.000	0.5810	0.5810	0.002	0.930060	0.930060	0.000
20.8329	0.9524	0.9524	0.000	0.5832	0.5832	0.000	0.936800	0.936790	0.001
20.8579	0.9562	0.9562	0.000	0.5853	0.5853	0.000	0.943250	0.943240	0.001
20.8829	0.9597	0.9597	0.000	0.5873	0.5873	0.000	0.949360	0.949350	0.001
20.9079	0.9631	0.9631	0.000	0.5892	0.5892	0.000	0.955100	0.955090	0.001
20.9329	0.9663	0.9663	0.000	0.5910	0.5910	0.000	0.960460	0.960450	0.001
20.9579	0.9692	0.9692	0.000	0.5927	0.5927	0.000	0.965460	0.965450	0.001
20.9829	0.9720	0.9720	0.000	0.5944	0.5944	0.000	0.970120	0.970110	0.001
21.0079	0.9746	0.9746	0.000	0.5961	0.5961	0.000	0.974480	0.974480	0.000
21.0329	0.9771	0.9771	0.000	0.5978	0.5978	0.000	0.978590	0.978590	0.000
21.0579	0.9794	0.9794	0.000	0.5994	0.5994	0.000	0.982490	0.982490	0.000
21.0829	0.9817	0.9817	0.000	0.6011	0.6011	0.000	0.986200	0.986190	0.001
21.1079	0.9839	0.9839	0.000	0.6028	0.6028	0.000	0.989730	0.989720	0.001
21.1329	0.9860	0.9860	0.000	0.6044	0.6044	0.000	0.993080	0.993080	0.000
21.1579	0.9880	0.9880	0.000	0.6060	0.6060	0.002	0.996260	0.996260	0.000
21.1829	0.9899	0.9899	0.000	0.6075	0.6075	0.000	0.999250	0.999240	0.001
21.2079	0.9917	0.9917	0.000	0.6090	0.6090	0.000	1.002000	1.002000	0.000
21.2329	0.9935	0.9935	0.000	0.6104	0.6104	0.000	1.004600	1.004600	0.000
21.2579	0.9951	0.9951	0.001	0.6118	0.6118	0.002	1.007000	1.007000	0.000
21.2829	0.9966	0.9966	0.000	0.6130	0.6130	0.000	1.009100	1.009100	0.000
21.3079	0.9981	0.9981	0.000	0.6143	0.6143	0.000	1.011000	1.011000	0.000
21.3329	0.9994	0.9994	0.000	0.6154	0.6154	0.000	1.012800	1.012700	0.010
21.3579	1.0006	1.0006	0.000	0.6165	0.6165	0.000	1.014300	1.014300	0.000
21.3829	1.0018	1.0018	0.000	0.6176	0.6176	0.000	1.015700	1.015700	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
21.4079	1.0029	1.0029	0.000	0.6187	0.6187	0.000	1.016900	1.016900	0.000
21.4329	1.0039	1.0039	0.000	0.6197	0.6197	0.000	1.018000	1.018000	0.000
21.4579	1.0048	1.0048	0.000	0.6207	0.6207	0.000	1.019000	1.019000	0.000
21.4829	1.0057	1.0057	0.000	0.6217	0.6217	0.000	1.019800	1.019800	0.000
21.5079	1.0066	1.0066	0.000	0.6227	0.6227	0.000	1.020600	1.020600	0.000
21.5329	1.0074	1.0074	0.000	0.6237	0.6237	0.000	1.021200	1.021200	0.000
21.5579	1.0081	1.0081	0.000	0.6246	0.6246	0.000	1.021700	1.021700	0.000
21.5829	1.0087	1.0087	0.000	0.6256	0.6256	0.000	1.022200	1.022200	0.000
21.6079	1.0094	1.0094	0.000	0.6264	0.6264	0.000	1.022500	1.022500	0.000
21.6329	1.0099	1.0099	0.000	0.6273	0.6273	0.000	1.022600	1.022600	0.000
21.6579	1.0105	1.0105	0.000	0.6280	0.6280	0.000	1.022700	1.022700	0.000
21.6829	1.0109	1.0109	0.000	0.6287	0.6287	0.000	1.022600	1.022600	0.000
21.7079	1.0113	1.0113	0.000	0.6294	0.6294	0.000	1.022500	1.022500	0.000
21.7329	1.0117	1.0117	0.000	0.6300	0.6300	0.000	1.022200	1.022200	0.000
21.7579	1.0120	1.0120	0.000	0.6306	0.6306	0.000	1.021900	1.021900	0.000
21.7829	1.0123	1.0123	0.000	0.6312	0.6312	0.000	1.021400	1.021400	0.000
21.8079	1.0125	1.0125	0.000	0.6317	0.6317	0.000	1.020900	1.020900	0.000
21.8329	1.0127	1.0127	0.000	0.6322	0.6322	0.000	1.020300	1.020300	0.000
21.8579	1.0129	1.0129	0.000	0.6327	0.6327	0.000	1.019700	1.019700	0.000
21.8829	1.0130	1.0130	0.000	0.6330	0.6330	0.000	1.018900	1.018900	0.000
21.9079	1.0130	1.0130	0.000	0.6335	0.6335	0.000	1.018100	1.018100	0.000
21.9329	1.0131	1.0131	0.000	0.6339	0.6339	0.000	1.017300	1.017300	0.000
21.9579	1.0131	1.0131	0.000	0.6342	0.6342	0.000	1.016500	1.016500	0.000
21.9829	1.0131	1.0131	0.000	0.6347	0.6347	0.000	1.015600	1.015600	0.000
22.0079	1.0130	1.0130	0.000	0.6350	0.6350	0.000	1.014600	1.014600	0.000
22.0329	1.0129	1.0129	0.000	0.6353	0.6353	0.000	1.013600	1.013600	0.000
22.0579	1.0128	1.0128	0.000	0.6355	0.6355	0.000	1.012400	1.012400	0.000
22.0829	1.0127	1.0127	0.000	0.6358	0.6358	0.000	1.011400	1.011400	0.000
22.1079	1.0125	1.0125	0.000	0.6360	0.6360	0.000	1.010300	1.010300	0.000
22.1329	1.0123	1.0123	0.000	0.6361	0.6361	0.000	1.009100	1.009100	0.000
22.1579	1.0121	1.0121	0.000	0.6363	0.6363	0.002	1.007900	1.007900	0.000
22.1829	1.0119	1.0119	0.000	0.6364	0.6364	0.000	1.006600	1.006600	0.000
22.2079	1.0117	1.0117	0.000	0.6364	0.6364	0.000	1.005400	1.005400	0.000
22.2329	1.0114	1.0114	0.000	0.6365	0.6365	0.000	1.004100	1.004100	0.000
22.2579	1.0111	1.0111	0.000	0.6364	0.6364	0.000	1.002600	1.002600	0.000
22.2829	1.0108	1.0108	0.000	0.6364	0.6364	0.000	1.001300	1.001300	0.000
22.3079	1.0105	1.0105	0.000	0.6364	0.6364	0.000	0.999940	0.999940	0.000
22.3329	1.0101	1.0101	0.000	0.6364	0.6364	0.000	0.998570	0.998570	0.000
22.3579	1.0098	1.0098	0.000	0.6363	0.6363	0.000	0.997190	0.997190	0.000
22.3829	1.0094	1.0094	0.000	0.6363	0.6363	0.000	0.995800	0.995800	0.000
22.4079	1.0091	1.0091	0.000	0.6362	0.6362	0.000	0.994410	0.994410	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
22.4329	1.0087	1.0087	0.000	0.6361	0.6361	0.000	0.993010	0.993010	0.000
22.4579	1.0083	1.0083	0.000	0.6360	0.6360	0.000	0.991610	0.991610	0.000
22.4829	1.0079	1.0079	0.000	0.6359	0.6359	0.000	0.990210	0.990210	0.000
22.5079	1.0075	1.0075	0.000	0.6357	0.6357	0.000	0.988800	0.988800	0.000
22.5329	1.0071	1.0071	0.000	0.6355	0.6355	0.000	0.987400	0.987400	0.000
22.5579	1.0067	1.0067	0.000	0.6354	0.6354	0.000	0.986000	0.986000	0.000
22.5829	1.0063	1.0063	0.000	0.6352	0.6352	0.000	0.984600	0.984600	0.000
22.6079	1.0059	1.0059	0.000	0.6350	0.6350	0.000	0.983210	0.983210	0.000
22.6329	1.0055	1.0055	0.000	0.6347	0.6347	0.000	0.981830	0.981820	0.001
22.6579	1.0051	1.0051	0.000	0.6345	0.6345	0.000	0.980450	0.980450	0.000
22.6829	1.0047	1.0047	0.000	0.6343	0.6343	0.000	0.979090	0.979090	0.000
22.7079	1.0043	1.0043	0.000	0.6340	0.6340	0.000	0.977740	0.977740	0.000
22.7329	1.0039	1.0039	0.000	0.6338	0.6338	0.002	0.976410	0.976400	0.001
22.7579	1.0035	1.0035	0.000	0.6336	0.6336	0.000	0.975090	0.975080	0.001
22.7829	1.0031	1.0031	0.000	0.6333	0.6333	0.000	0.973790	0.973780	0.001
22.8079	1.0027	1.0027	0.000	0.6331	0.6331	0.000	0.972500	0.972500	0.000
22.8329	1.0023	1.0023	0.000	0.6328	0.6328	0.000	0.971230	0.971230	0.000
22.8579	1.0019	1.0019	0.000	0.6326	0.6326	0.000	0.969980	0.969980	0.000
22.8829	1.0015	1.0015	0.000	0.6324	0.6324	0.000	0.968750	0.968750	0.000
22.9079	1.0011	1.0011	0.000	0.6321	0.6321	0.000	0.967540	0.967540	0.000
22.9329	1.0008	1.0008	0.000	0.6319	0.6319	0.000	0.966350	0.966350	0.000
22.9579	1.0004	1.0004	0.000	0.6317	0.6317	0.000	0.965180	0.965180	0.000
22.9829	1.0001	1.0001	0.000	0.6314	0.6314	0.000	0.964030	0.964020	0.001
23.0079	0.9997	0.9997	0.000	0.6312	0.6312	0.000	0.962900	0.962890	0.001
23.0329	0.9994	0.9994	0.000	0.6310	0.6310	0.000	0.961790	0.961780	0.001
23.0579	0.9991	0.9991	0.000	0.6308	0.6308	0.000	0.960700	0.960690	0.001
23.0829	0.9988	0.9988	0.000	0.6306	0.6306	0.002	0.959630	0.959620	0.001
23.1079	0.9985	0.9985	0.000	0.6304	0.6304	0.000	0.958580	0.958580	0.000
23.1329	0.9982	0.9982	0.000	0.6302	0.6302	0.000	0.957560	0.957550	0.001
23.1579	0.9979	0.9979	0.000	0.6301	0.6301	0.000	0.956550	0.956550	0.000
23.1829	0.9977	0.9977	0.000	0.6299	0.6299	0.000	0.955570	0.955570	0.000
23.2079	0.9974	0.9974	0.000	0.6298	0.6298	0.000	0.954610	0.954610	0.000
23.2329	0.9972	0.9972	0.000	0.6297	0.6297	0.000	0.953680	0.953670	0.001
23.2579	0.9970	0.9970	0.000	0.6296	0.6296	0.000	0.952760	0.952760	0.000
23.2829	0.9968	0.9968	0.000	0.6296	0.6296	0.000	0.951860	0.951860	0.000
23.3079	0.9965	0.9965	0.000	0.6296	0.6296	0.000	0.951080	0.951080	0.000
23.3329	0.9964	0.9964	0.000	0.6296	0.6296	0.000	0.950220	0.950210	0.001
23.3579	0.9962	0.9962	0.000	0.6296	0.6296	0.000	0.949370	0.949370	0.000
23.3829	0.9960	0.9960	0.000	0.6296	0.6296	0.000	0.948540	0.948540	0.000
23.4079	0.9959	0.9959	0.000	0.6296	0.6296	0.000	0.947730	0.947730	0.000
23.4329	0.9957	0.9957	0.001	0.6297	0.6297	0.000	0.946940	0.946940	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
23.4579	0.9956	0.9956	0.000	0.6298	0.6298	0.000	0.946160	0.946160	0.000
23.4829	0.9955	0.9955	0.000	0.6299	0.6299	0.000	0.945400	0.945390	0.001
23.5079	0.9954	0.9954	0.000	0.6300	0.6300	0.000	0.944650	0.944650	0.000
23.5329	0.9953	0.9953	0.000	0.6302	0.6302	0.000	0.943920	0.943910	0.001
23.5579	0.9953	0.9953	0.000	0.6304	0.6304	0.002	0.943190	0.943190	0.000
23.5829	0.9952	0.9952	0.000	0.6306	0.6306	0.000	0.942480	0.942480	0.000
23.6079	0.9952	0.9952	0.000	0.6308	0.6308	0.000	0.941780	0.941780	0.000
23.6329	0.9951	0.9951	0.001	0.6311	0.6311	0.000	0.941080	0.941080	0.000
23.6579	0.9951	0.9951	0.000	0.6313	0.6313	0.000	0.940330	0.940320	0.001
23.6829	0.9951	0.9951	0.000	0.6317	0.6317	0.000	0.939670	0.939670	0.000
23.7079	0.9951	0.9951	0.000	0.6321	0.6321	0.000	0.939120	0.939110	0.001
23.7329	0.9951	0.9951	0.001	0.6325	0.6325	0.000	0.938400	0.938390	0.001
23.7579	0.9951	0.9952	0.001	0.6330	0.6330	0.002	0.937730	0.937730	0.000
23.7829	0.9952	0.9952	0.000	0.6334	0.6334	0.000	0.937090	0.937080	0.001
23.8079	0.9952	0.9952	0.001	0.6340	0.6340	0.000	0.936440	0.936440	0.000
23.8329	0.9953	0.9953	0.000	0.6344	0.6344	0.000	0.935690	0.935680	0.001
23.8579	0.9954	0.9954	0.001	0.6350	0.6350	0.000	0.935010	0.935010	0.000
23.8829	0.9955	0.9955	0.000	0.6356	0.6356	0.000	0.934330	0.934330	0.000
23.9079	0.9956	0.9956	0.000	0.6362	0.6362	0.000	0.933640	0.933640	0.000
23.9329	0.9957	0.9957	0.000	0.6369	0.6369	0.000	0.932950	0.932940	0.001
23.9579	0.9958	0.9958	0.000	0.6377	0.6377	0.000	0.932240	0.932240	0.000
23.9829	0.9959	0.9959	0.000	0.6384	0.6384	0.000	0.931520	0.931510	0.001
24.0079	0.9961	0.9961	0.000	0.6393	0.6393	0.000	0.930780	0.930780	0.000
24.0329	0.9962	0.9962	0.000	0.6401	0.6401	0.000	0.930030	0.930020	0.001
24.0579	0.9964	0.9964	0.000	0.6410	0.6410	0.000	0.929250	0.929250	0.000
24.0829	0.9965	0.9965	0.000	0.6420	0.6420	0.000	0.928450	0.928450	0.000
24.1079	0.9967	0.9967	0.000	0.6430	0.6430	0.000	0.927630	0.927630	0.000
24.1329	0.9969	0.9969	0.000	0.6440	0.6440	0.000	0.926790	0.926780	0.001
24.1579	0.9971	0.9971	0.001	0.6451	0.6451	0.000	0.925910	0.925900	0.001
24.1829	0.9973	0.9973	0.000	0.6463	0.6463	0.000	0.925090	0.925090	0.000
24.2079	0.9975	0.9975	0.001	0.6475	0.6475	0.000	0.924150	0.924150	0.000
24.2329	0.9977	0.9977	0.000	0.6487	0.6487	0.000	0.923170	0.923170	0.000
24.2579	0.9979	0.9979	0.000	0.6500	0.6500	0.000	0.922150	0.922150	0.000
24.2829	0.9981	0.9981	0.000	0.6514	0.6514	0.000	0.921080	0.921080	0.000
24.3079	0.9984	0.9984	0.000	0.6527	0.6527	0.000	0.919970	0.919960	0.001
24.3329	0.9986	0.9986	0.000	0.6542	0.6542	0.000	0.918800	0.918790	0.001
24.3579	0.9989	0.9989	0.000	0.6557	0.6557	0.000	0.917570	0.917570	0.000
24.3829	0.9992	0.9992	0.000	0.6573	0.6573	0.000	0.916290	0.916280	0.001
24.4079	0.9995	0.9995	0.000	0.6590	0.6590	0.000	0.914940	0.914930	0.001
24.4328	0.9998	0.9998	0.000	0.6607	0.6607	0.000	0.913510	0.913510	0.000
24.4578	1.0001	1.0001	0.000	0.6625	0.6625	0.000	0.912010	0.912010	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
24.4828	1.0004	1.0004	0.000	0.6644	0.6644	0.000	0.910430	0.910420	0.001
24.5078	1.0007	1.0007	0.000	0.6664	0.6664	0.002	0.908750	0.908750	0.000
24.5328	1.0010	1.0010	0.000	0.6684	0.6684	0.000	0.906980	0.906970	0.001
24.5578	1.0014	1.0014	0.000	0.6706	0.6706	0.000	0.905090	0.905090	0.000
24.5828	1.0018	1.0018	0.000	0.6728	0.6728	0.000	0.903090	0.903090	0.000
24.6078	1.0022	1.0022	0.000	0.6752	0.6752	0.000	0.900970	0.900960	0.001
24.6328	1.0026	1.0026	0.000	0.6777	0.6777	0.000	0.898700	0.898690	0.001
24.6578	1.0030	1.0030	0.000	0.6802	0.6802	0.000	0.896280	0.896270	0.001
24.6828	1.0034	1.0034	0.000	0.6830	0.6830	0.000	0.893690	0.893690	0.000
24.7078	1.0039	1.0039	0.000	0.6858	0.6858	0.000	0.890920	0.890920	0.000
24.7328	1.0044	1.0044	0.000	0.6888	0.6888	0.001	0.887940	0.887940	0.000
24.7578	1.0050	1.0050	0.000	0.6920	0.6920	0.000	0.884740	0.884730	0.001
24.7828	1.0055	1.0055	0.000	0.6953	0.6953	0.000	0.881280	0.881280	0.000
24.8078	1.0062	1.0062	0.000	0.6988	0.6988	0.000	0.877540	0.877530	0.001
24.8328	1.0068	1.0068	0.000	0.7026	0.7026	0.001	0.873480	0.873470	0.001
24.8578	1.0076	1.0076	0.000	0.7065	0.7065	0.000	0.869060	0.869050	0.001
24.8828	1.0084	1.0084	0.000	0.7108	0.7108	0.000	0.864220	0.864220	0.000
24.9078	1.0093	1.0093	0.000	0.7152	0.7152	0.001	0.858920	0.858910	0.001
24.9328	1.0102	1.0102	0.000	0.7200	0.7200	0.000	0.853070	0.853060	0.001
24.9578	1.0113	1.0113	0.000	0.7251	0.7251	0.000	0.846590	0.846580	0.001
24.9828	1.0126	1.0126	0.000	0.7306	0.7306	0.000	0.839370	0.839370	0.000
25.0078	1.0139	1.0140	0.010	0.7365	0.7365	0.000	0.831290	0.831280	0.001
25.0078	0.9146	0.9146	0.000	0.9189	0.9189	0.001	1.373800	1.373800	0.000
25.0328	0.8926	0.8926	0.000	0.9086	0.9086	0.000	1.312800	1.312800	0.000
25.0578	0.8807	0.8807	0.000	0.8946	0.8946	0.001	1.272700	1.272700	0.000
25.0828	0.8737	0.8737	0.000	0.8882	0.8882	0.000	1.246100	1.246100	0.000
25.1078	0.8701	0.8701	0.000	0.8870	0.8870	0.001	1.228000	1.228000	0.000
25.1328	0.8691	0.8691	0.000	0.8895	0.8895	0.001	1.215600	1.215600	0.000
25.1578	0.8700	0.8700	0.000	0.8946	0.8946	0.000	1.207100	1.207100	0.000
25.1828	0.8726	0.8726	0.000	0.9017	0.9017	0.000	1.201300	1.201300	0.000
25.2078	0.8763	0.8763	0.000	0.9100	0.9100	0.001	1.196400	1.196400	0.000
25.2328	0.8809	0.8809	0.001	0.9189	0.9189	0.000	1.191200	1.191200	0.000
25.2578	0.8861	0.8861	0.000	0.9282	0.9282	0.000	1.185200	1.185100	0.008
25.2828	0.8921	0.8921	0.000	0.9374	0.9374	0.000	1.177600	1.177600	0.000
25.3078	0.8988	0.8988	0.001	0.9460	0.9461	0.002	1.168300	1.168300	0.000
25.3328	0.9063	0.9063	0.001	0.9531	0.9531	0.000	1.156700	1.156700	0.000
25.3578	0.9145	0.9145	0.001	0.9577	0.9577	0.001	1.142900	1.142900	0.000
25.3828	0.9234	0.9235	0.001	0.9586	0.9586	0.000	1.127000	1.127000	0.000
25.4078	0.9328	0.9328	0.000	0.9546	0.9546	0.000	1.109900	1.109900	0.000
25.4328	0.9423	0.9424	0.001	0.9451	0.9451	0.000	1.092600	1.092600	0.000
25.4578	0.9515	0.9515	0.001	0.9303	0.9303	0.001	1.076900	1.076900	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: *No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
25.4828	0.9600	0.9600	0.001	0.9118	0.9118	0.001	1.063900	1.063900	0.000
25.5078	0.9675	0.9675	0.000	0.8919	0.8919	0.001	1.054700	1.054600	0.009
25.5328	0.9741	0.9741	0.000	0.8732	0.8732	0.001	1.049200	1.049200	0.000
25.5578	0.9799	0.9799	0.001	0.8574	0.8574	0.001	1.047100	1.047100	0.000
25.5828	0.9849	0.9849	0.000	0.8451	0.8451	0.000	1.047400	1.047400	0.000
25.6078	0.9892	0.9892	0.001	0.8366	0.8366	0.000	1.049200	1.049200	0.000
25.6328	0.9927	0.9927	0.000	0.8314	0.8314	0.000	1.051700	1.051700	0.000
25.6578	0.9957	0.9957	0.000	0.8289	0.8289	0.001	1.054500	1.054500	0.000
25.6828	0.9982	0.9982	0.000	0.8284	0.8284	0.001	1.057300	1.057300	0.000
25.7078	1.0003	1.0003	0.000	0.8293	0.8293	0.000	1.060000	1.060000	0.000
25.7328	1.0022	1.0022	0.000	0.8311	0.8311	0.001	1.062600	1.062600	0.000
25.7578	1.0039	1.0039	0.000	0.8334	0.8334	0.000	1.065200	1.065200	0.000
25.7828	1.0057	1.0057	0.000	0.8360	0.8360	0.000	1.067800	1.067800	0.000
25.8078	1.0074	1.0074	0.000	0.8386	0.8386	0.001	1.070400	1.070400	0.000
25.8328	1.0091	1.0091	0.000	0.8412	0.8412	0.001	1.073000	1.073000	0.000
25.8578	1.0108	1.0108	0.000	0.8436	0.8436	0.000	1.075400	1.075400	0.000
25.8828	1.0125	1.0125	0.000	0.8458	0.8458	0.001	1.077600	1.077600	0.000
25.9078	1.0139	1.0139	0.000	0.8479	0.8479	0.001	1.079600	1.079600	0.000
25.9328	1.0152	1.0152	0.000	0.8499	0.8499	0.001	1.081200	1.081200	0.000
25.9578	1.0163	1.0163	0.000	0.8518	0.8518	0.001	1.082600	1.082600	0.000
25.9828	1.0172	1.0172	0.000	0.8537	0.8537	0.000	1.083600	1.083600	0.000
26.0078	1.0180	1.0180	0.000	0.8556	0.8556	0.000	1.084300	1.084300	0.000
26.0328	1.0187	1.0187	0.000	0.8574	0.8574	0.001	1.084900	1.084900	0.000
26.0578	1.0192	1.0192	0.000	0.8593	0.8593	0.000	1.085300	1.085300	0.000
26.0828	1.0197	1.0197	0.000	0.8611	0.8611	0.001	1.085600	1.085600	0.000
26.1078	1.0201	1.0201	0.000	0.8628	0.8628	0.000	1.085700	1.085700	0.000
26.1328	1.0206	1.0206	0.000	0.8643	0.8643	0.000	1.085800	1.085800	0.000
26.1578	1.0209	1.0209	0.000	0.8657	0.8657	0.000	1.085800	1.085800	0.000
26.1828	1.0212	1.0212	0.000	0.8668	0.8668	0.000	1.085500	1.085500	0.000
26.2078	1.0215	1.0215	0.000	0.8676	0.8676	0.001	1.085100	1.085100	0.000
26.2328	1.0217	1.0217	0.000	0.8682	0.8682	0.001	1.084500	1.084400	0.009
26.2578	1.0218	1.0218	0.000	0.8686	0.8686	0.000	1.083600	1.083600	0.000
26.2828	1.0218	1.0218	0.000	0.8688	0.8688	0.000	1.082600	1.082600	0.000
26.3078	1.0218	1.0218	0.000	0.8688	0.8688	0.000	1.081500	1.081500	0.000
26.3328	1.0216	1.0216	0.000	0.8688	0.8688	0.000	1.080300	1.080300	0.000
26.3578	1.0215	1.0215	0.000	0.8688	0.8688	0.000	1.079000	1.078900	0.009
26.3828	1.0212	1.0212	0.000	0.8688	0.8688	0.000	1.077600	1.077600	0.000
26.4078	1.0210	1.0210	0.000	0.8688	0.8688	0.000	1.076200	1.076200	0.000
26.4328	1.0207	1.0207	0.000	0.8687	0.8687	0.001	1.074800	1.074800	0.000
26.4578	1.0204	1.0204	0.000	0.8687	0.8687	0.000	1.073300	1.073300	0.000
26.4828	1.0201	1.0201	0.000	0.8686	0.8686	0.000	1.071800	1.071800	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
26.5078	1.0198	1.0198	0.000	0.8684	0.8684	0.000	1.070300	1.070300	0.000
26.5328	1.0195	1.0195	0.000	0.8681	0.8681	0.000	1.068700	1.068700	0.000
26.5578	1.0191	1.0191	0.000	0.8677	0.8677	0.000	1.067100	1.067100	0.000
26.5828	1.0187	1.0187	0.000	0.8672	0.8672	0.000	1.065400	1.065400	0.000
26.6078	1.0183	1.0183	0.000	0.8665	0.8665	0.000	1.063600	1.063600	0.000
26.6328	1.0178	1.0178	0.000	0.8656	0.8656	0.000	1.061700	1.061700	0.000
26.6578	1.0173	1.0173	0.000	0.8646	0.8646	0.000	1.059700	1.059700	0.000
26.6828	1.0168	1.0168	0.000	0.8635	0.8635	0.000	1.057800	1.057700	0.009
26.7078	1.0163	1.0163	0.000	0.8623	0.8623	0.001	1.055700	1.055700	0.000
26.7328	1.0158	1.0158	0.000	0.8610	0.8610	0.000	1.053700	1.053700	0.000
26.7578	1.0152	1.0152	0.000	0.8598	0.8598	0.000	1.051600	1.051600	0.000
26.7828	1.0147	1.0147	0.000	0.8584	0.8584	0.000	1.049600	1.049600	0.000
26.8078	1.0141	1.0141	0.000	0.8571	0.8571	0.000	1.047500	1.047500	0.000
26.8328	1.0136	1.0136	0.000	0.8558	0.8558	0.001	1.045500	1.045500	0.000
26.8578	1.0130	1.0130	0.000	0.8544	0.8544	0.000	1.043500	1.043500	0.000
26.8828	1.0124	1.0124	0.000	0.8531	0.8531	0.001	1.041500	1.041500	0.000
26.9078	1.0119	1.0119	0.000	0.8517	0.8517	0.000	1.039500	1.039500	0.000
26.9328	1.0113	1.0113	0.000	0.8502	0.8502	0.000	1.037500	1.037500	0.000
26.9578	1.0107	1.0107	0.000	0.8487	0.8487	0.001	1.035500	1.035500	0.000
26.9828	1.0102	1.0102	0.000	0.8471	0.8471	0.000	1.033500	1.033500	0.000
27.0078	1.0096	1.0096	0.000	0.8455	0.8455	0.000	1.031500	1.031500	0.000
27.0328	1.0091	1.0091	0.000	0.8438	0.8438	0.000	1.029600	1.029600	0.000
27.0578	1.0085	1.0085	0.000	0.8421	0.8420	0.001	1.027600	1.027600	0.000
27.0828	1.0079	1.0079	0.000	0.8402	0.8403	0.001	1.025600	1.025600	0.000
27.1078	1.0074	1.0074	0.000	0.8384	0.8384	0.000	1.023600	1.023600	0.000
27.1328	1.0068	1.0068	0.000	0.8365	0.8366	0.001	1.021700	1.021700	0.000
27.1578	1.0063	1.0063	0.000	0.8347	0.8347	0.001	1.019800	1.019700	0.010
27.1828	1.0057	1.0057	0.000	0.8328	0.8328	0.000	1.017900	1.017900	0.000
27.2078	1.0052	1.0052	0.000	0.8309	0.8309	0.000	1.016000	1.016000	0.000
27.2328	1.0047	1.0047	0.000	0.8291	0.8291	0.000	1.014200	1.014200	0.000
27.2578	1.0042	1.0042	0.000	0.8273	0.8273	0.001	1.012400	1.012400	0.000
27.2828	1.0037	1.0037	0.000	0.8254	0.8254	0.001	1.010600	1.010600	0.000
27.3078	1.0032	1.0032	0.000	0.8237	0.8236	0.001	1.008900	1.008900	0.000
27.3328	1.0027	1.0027	0.000	0.8219	0.8219	0.000	1.007200	1.007200	0.000
27.3578	1.0022	1.0022	0.000	0.8201	0.8201	0.000	1.005600	1.005600	0.000
27.3828	1.0018	1.0018	0.000	0.8183	0.8183	0.000	1.004000	1.004000	0.000
27.4078	1.0013	1.0013	0.000	0.8165	0.8165	0.001	1.002400	1.002400	0.000
27.4328	1.0009	1.0009	0.000	0.8147	0.8147	0.000	1.000900	1.000900	0.000
27.4578	1.0004	1.0004	0.000	0.8130	0.8130	0.000	0.999360	0.999360	0.000
27.4828	1.0000	1.0000	0.000	0.8112	0.8112	0.000	0.997880	0.997870	0.001
27.5078	0.9996	0.9996	0.001	0.8095	0.8095	0.000	0.996430	0.996420	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
27.5328	0.9992	0.9992	0.000	0.8077	0.8077	0.000	0.995010	0.995010	0.000
27.5578	0.9989	0.9989	0.000	0.8060	0.8060	0.000	0.993630	0.993630	0.000
27.5828	0.9985	0.9985	0.000	0.8044	0.8044	0.000	0.992290	0.992290	0.000
27.6078	0.9981	0.9981	0.001	0.8027	0.8027	0.001	0.991000	0.990990	0.001
27.6328	0.9978	0.9978	0.000	0.8011	0.8011	0.000	0.989740	0.989740	0.000
27.6578	0.9974	0.9974	0.000	0.7996	0.7996	0.000	0.988530	0.988520	0.001
27.6828	0.9971	0.9971	0.000	0.7981	0.7981	0.000	0.987360	0.987350	0.001
27.7078	0.9968	0.9968	0.000	0.7967	0.7967	0.000	0.986230	0.986230	0.000
27.7328	0.9965	0.9965	0.000	0.7953	0.7953	0.000	0.985140	0.985140	0.000
27.7578	0.9962	0.9963	0.001	0.7939	0.7939	0.000	0.984090	0.984090	0.000
27.7828	0.9960	0.9960	0.000	0.7926	0.7926	0.000	0.983080	0.983080	0.000
27.8078	0.9957	0.9957	0.000	0.7914	0.7914	0.000	0.982110	0.982110	0.000
27.8328	0.9955	0.9955	0.000	0.7902	0.7902	0.001	0.981170	0.981170	0.000
27.8578	0.9953	0.9953	0.000	0.7890	0.7890	0.001	0.980270	0.980260	0.001
27.8828	0.9951	0.9951	0.000	0.7879	0.7879	0.001	0.979390	0.979390	0.000
27.9078	0.9949	0.9949	0.000	0.7868	0.7868	0.000	0.978550	0.978550	0.000
27.9328	0.9947	0.9947	0.000	0.7857	0.7857	0.000	0.977750	0.977740	0.001
27.9578	0.9945	0.9945	0.000	0.7847	0.7847	0.000	0.976970	0.976970	0.000
27.9828	0.9943	0.9943	0.000	0.7838	0.7838	0.001	0.976230	0.976230	0.000
28.0078	0.9942	0.9942	0.000	0.7829	0.7829	0.000	0.975520	0.975520	0.000
28.0328	0.9941	0.9941	0.000	0.7821	0.7821	0.000	0.974840	0.974840	0.000
28.0578	0.9939	0.9939	0.000	0.7813	0.7813	0.000	0.974200	0.974190	0.001
28.0828	0.9938	0.9938	0.000	0.7807	0.7807	0.000	0.973580	0.973580	0.000
28.1078	0.9937	0.9937	0.000	0.7800	0.7800	0.000	0.973000	0.973000	0.000
28.1328	0.9937	0.9937	0.000	0.7794	0.7794	0.000	0.972450	0.972450	0.000
28.1578	0.9936	0.9936	0.000	0.7789	0.7789	0.000	0.971920	0.971920	0.000
28.1828	0.9935	0.9935	0.000	0.7784	0.7784	0.000	0.971510	0.971500	0.001
28.2078	0.9935	0.9935	0.000	0.7781	0.7780	0.001	0.971020	0.971010	0.001
28.2328	0.9934	0.9934	0.000	0.7777	0.7777	0.000	0.970560	0.970550	0.001
28.2578	0.9934	0.9934	0.000	0.7774	0.7774	0.000	0.970120	0.970110	0.001
28.2828	0.9934	0.9934	0.000	0.7772	0.7772	0.001	0.969700	0.969700	0.000
28.3078	0.9934	0.9934	0.000	0.7770	0.7770	0.000	0.969300	0.969300	0.000
28.3328	0.9934	0.9934	0.000	0.7768	0.7768	0.000	0.968930	0.968920	0.001
28.3578	0.9934	0.9934	0.000	0.7768	0.7768	0.000	0.968500	0.968500	0.000
28.3828	0.9935	0.9935	0.000	0.7767	0.7767	0.000	0.968200	0.968190	0.001
28.4078	0.9935	0.9935	0.000	0.7767	0.7767	0.001	0.967870	0.967870	0.000
28.4328	0.9936	0.9936	0.001	0.7768	0.7768	0.000	0.967620	0.967620	0.000
28.4578	0.9936	0.9936	0.000	0.7769	0.7769	0.000	0.967280	0.967270	0.001
28.4828	0.9937	0.9937	0.000	0.7771	0.7771	0.000	0.966990	0.966990	0.000
28.5078	0.9938	0.9938	0.001	0.7774	0.7774	0.000	0.966720	0.966710	0.001
28.5328	0.9939	0.9939	0.001	0.7777	0.7777	0.000	0.966450	0.966450	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
28.5578	0.9940	0.9940	0.000	0.7780	0.7780	0.000	0.966200	0.966190	0.001
28.5828	0.9941	0.9941	0.000	0.7784	0.7784	0.000	0.965950	0.965940	0.001
28.6078	0.9942	0.9942	0.000	0.7789	0.7789	0.001	0.965710	0.965700	0.001
28.6328	0.9943	0.9943	0.000	0.7794	0.7794	0.000	0.965560	0.965560	0.000
28.6578	0.9944	0.9944	0.000	0.7799	0.7799	0.001	0.965340	0.965330	0.001
28.6828	0.9946	0.9946	0.000	0.7805	0.7805	0.000	0.965110	0.965100	0.001
28.7078	0.9947	0.9947	0.000	0.7811	0.7811	0.000	0.964880	0.964880	0.000
28.7328	0.9949	0.9949	0.000	0.7817	0.7818	0.001	0.964660	0.964660	0.000
28.7578	0.9950	0.9950	0.001	0.7825	0.7825	0.000	0.964430	0.964430	0.000
28.7828	0.9952	0.9952	0.000	0.7832	0.7832	0.000	0.964210	0.964200	0.001
28.8078	0.9953	0.9953	0.000	0.7840	0.7840	0.000	0.963980	0.963970	0.001
28.8328	0.9955	0.9955	0.000	0.7848	0.7848	0.000	0.963740	0.963730	0.001
28.8578	0.9957	0.9957	0.000	0.7857	0.7857	0.000	0.963500	0.963490	0.001
28.8828	0.9959	0.9959	0.000	0.7866	0.7866	0.000	0.963250	0.963240	0.001
28.9078	0.9961	0.9961	0.001	0.7875	0.7875	0.000	0.962990	0.962980	0.001
28.9328	0.9963	0.9963	0.000	0.7885	0.7885	0.000	0.962720	0.962710	0.001
28.9578	0.9965	0.9965	0.000	0.7895	0.7895	0.000	0.962440	0.962430	0.001
28.9828	0.9967	0.9967	0.000	0.7905	0.7905	0.000	0.962140	0.962140	0.000
29.0078	0.9969	0.9969	0.000	0.7916	0.7916	0.000	0.961830	0.961830	0.000
29.0328	0.9971	0.9971	0.000	0.7927	0.7927	0.000	0.961510	0.961500	0.001
29.0578	0.9973	0.9973	0.000	0.7938	0.7938	0.000	0.961170	0.961160	0.001
29.0828	0.9975	0.9975	0.000	0.7950	0.7950	0.000	0.960800	0.960800	0.000
29.1078	0.9978	0.9978	0.000	0.7962	0.7962	0.000	0.960420	0.960420	0.000
29.1328	0.9980	0.9980	0.000	0.7974	0.7974	0.000	0.960020	0.960010	0.001
29.1578	0.9982	0.9982	0.000	0.7986	0.7986	0.000	0.959590	0.959580	0.001
29.1828	0.9985	0.9985	0.000	0.7999	0.7999	0.000	0.959140	0.959130	0.001
29.2078	0.9987	0.9987	0.000	0.8012	0.8012	0.001	0.958660	0.958650	0.001
29.2328	0.9989	0.9989	0.000	0.8025	0.8025	0.000	0.958150	0.958140	0.001
29.2578	0.9992	0.9992	0.000	0.8038	0.8038	0.000	0.957610	0.957610	0.000
29.2828	0.9994	0.9994	0.000	0.8052	0.8052	0.000	0.957040	0.957040	0.000
29.3078	0.9996	0.9996	0.000	0.8066	0.8066	0.000	0.956440	0.956440	0.000
29.3328	0.9999	0.9999	0.001	0.8080	0.8080	0.000	0.955810	0.955810	0.000
29.3578	1.0001	1.0001	0.000	0.8094	0.8094	0.000	0.955140	0.955130	0.001
29.3828	1.0004	1.0004	0.000	0.8108	0.8108	0.000	0.954430	0.954430	0.000
29.4078	1.0006	1.0006	0.000	0.8123	0.8123	0.000	0.953680	0.953680	0.000
29.4328	1.0009	1.0009	0.000	0.8138	0.8138	0.001	0.952900	0.952890	0.001
29.4578	1.0011	1.0011	0.000	0.8153	0.8153	0.000	0.952060	0.952060	0.000
29.4828	1.0014	1.0014	0.000	0.8168	0.8168	0.000	0.951190	0.951180	0.001
29.5078	1.0016	1.0016	0.000	0.8183	0.8183	0.001	0.950260	0.950260	0.000
29.5328	1.0019	1.0019	0.000	0.8199	0.8199	0.000	0.949290	0.949280	0.001
29.5578	1.0021	1.0021	0.000	0.8215	0.8215	0.000	0.948260	0.948250	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU) *		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
29.5828	1.0024	1.0024	0.000	0.8230	0.8230	0.001	0.947170	0.947170	0.000
29.6078	1.0026	1.0026	0.000	0.8246	0.8246	0.000	0.946030	0.946030	0.000
29.6328	1.0029	1.0029	0.000	0.8263	0.8263	0.000	0.944830	0.944830	0.000
29.6578	1.0031	1.0031	0.000	0.8279	0.8279	0.000	0.943570	0.943560	0.001
29.6828	1.0034	1.0034	0.000	0.8296	0.8296	0.000	0.942240	0.942230	0.001
29.7078	1.0037	1.0037	0.000	0.8313	0.8313	0.000	0.940830	0.940830	0.000
29.7328	1.0039	1.0039	0.000	0.8330	0.8330	0.000	0.939360	0.939360	0.000
29.7578	1.0042	1.0042	0.000	0.8347	0.8347	0.000	0.937810	0.937800	0.001
29.7828	1.0045	1.0045	0.000	0.8365	0.8365	0.001	0.936170	0.936170	0.000
29.8078	1.0048	1.0048	0.000	0.8383	0.8383	0.000	0.934450	0.934450	0.000
29.8328	1.0050	1.0050	0.000	0.8401	0.8401	0.000	0.932640	0.932630	0.001
29.8578	1.0053	1.0053	0.000	0.8419	0.8419	0.001	0.930730	0.930730	0.000
29.8828	1.0056	1.0056	0.000	0.8438	0.8438	0.000	0.928720	0.928710	0.001
29.9078	1.0060	1.0060	0.000	0.8457	0.8457	0.001	0.926590	0.926590	0.000
29.9328	1.0063	1.0063	0.000	0.8476	0.8476	0.000	0.924350	0.924340	0.001
29.9578	1.0066	1.0066	0.000	0.8496	0.8496	0.000	0.921980	0.921970	0.001
29.9828	1.0069	1.0069	0.000	0.8516	0.8516	0.000	0.919480	0.919470	0.001
30.0078	1.0073	1.0073	0.000	0.8537	0.8537	0.001	0.916830	0.916820	0.001
30.0078	0.9058	0.9058	0.000	0.9790	0.9790	0.000	1.457700	1.457700	0.000
30.0328	0.8792	0.8792	0.000	0.9720	0.9720	0.000	1.387100	1.387100	0.000
30.0578	0.8667	0.8667	0.000	0.9471	0.9471	0.000	1.344400	1.344400	0.000
30.0828	0.8596	0.8596	0.000	0.9345	0.9345	0.000	1.319600	1.319600	0.000
30.1078	0.8559	0.8559	0.000	0.9293	0.9293	0.000	1.305500	1.305500	0.000
30.1328	0.8546	0.8546	0.001	0.9287	0.9287	0.001	1.298500	1.298500	0.000
30.1578	0.8550	0.8550	0.000	0.9310	0.9310	0.000	1.296100	1.296100	0.000
30.1828	0.8563	0.8563	0.000	0.9344	0.9344	0.000	1.296000	1.296000	0.000
30.2078	0.8581	0.8581	0.000	0.9383	0.9383	0.000	1.297000	1.297000	0.000
30.2328	0.8601	0.8601	0.000	0.9426	0.9426	0.000	1.298500	1.298500	0.000
30.2578	0.8623	0.8623	0.000	0.9469	0.9469	0.000	1.300200	1.300200	0.000
30.2828	0.8645	0.8645	0.000	0.9514	0.9514	0.001	1.301800	1.301800	0.000
30.3078	0.8669	0.8669	0.000	0.9558	0.9558	0.001	1.303300	1.303300	0.000
30.3328	0.8692	0.8692	0.000	0.9600	0.9600	0.001	1.304600	1.304600	0.000
30.3578	0.8716	0.8716	0.000	0.9644	0.9644	0.001	1.305700	1.305700	0.000
30.3828	0.8740	0.8740	0.000	0.9687	0.9687	0.000	1.306500	1.306500	0.000
30.4078	0.8765	0.8765	0.000	0.9731	0.9731	0.001	1.307000	1.307000	0.000
30.4328	0.8790	0.8790	0.000	0.9775	0.9775	0.000	1.307300	1.307300	0.000
30.4578	0.8815	0.8815	0.001	0.9820	0.9820	0.000	1.307200	1.307200	0.000
30.4828	0.8841	0.8841	0.000	0.9867	0.9867	0.000	1.306700	1.306700	0.000
30.5078	0.8868	0.8868	0.000	0.9917	0.9917	0.000	1.305900	1.305900	0.000
30.5328	0.8895	0.8895	0.000	0.9970	0.9970	0.000	1.304700	1.304700	0.000
30.5578	0.8924	0.8924	0.000	1.0027	1.0027	0.000	1.303100	1.303100	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
30.5828	0.8954	0.8954	0.001	1.0089	1.0089	0.000	1.301000	1.301000	0.000
30.6078	0.8986	0.8986	0.000	1.0159	1.0159	0.000	1.298500	1.298500	0.000
30.6328	0.9020	0.9020	0.000	1.0234	1.0234	0.000	1.295300	1.295300	0.000
30.6578	0.9056	0.9056	0.001	1.0315	1.0316	0.010	1.291300	1.291300	0.000
30.6828	0.9095	0.9095	0.000	1.0404	1.0405	0.010	1.286500	1.286400	0.008
30.7078	0.9138	0.9138	0.000	1.0502	1.0502	0.000	1.280500	1.280500	0.000
30.7328	0.9186	0.9186	0.000	1.0610	1.0610	0.000	1.273100	1.273100	0.000
30.7578	0.9240	0.9240	0.000	1.0730	1.0730	0.000	1.263800	1.263800	0.000
30.7828	0.9301	0.9301	0.001	1.0867	1.0867	0.000	1.252100	1.252100	0.000
30.8078	0.9374	0.9374	0.001	1.1026	1.1026	0.000	1.236800	1.236800	0.000
30.8328	0.9463	0.9463	0.000	1.1220	1.1220	0.000	1.216200	1.216100	0.008
30.8578	0.9578	0.9578	0.000	1.1476	1.1476	0.000	1.185700	1.185700	0.000
30.8828	0.9750	0.9750	0.001	1.1858	1.1858	0.000	1.132900	1.132900	0.000
30.9078	1.0095	1.0095	0.000	1.2464	1.2464	0.000	1.003300	1.003200	0.010
30.9328	1.0833	1.0834	0.009	1.1750	1.1749	0.009	0.708260	0.708190	0.010
30.9578	1.1227	1.1227	0.000	1.0361	1.0360	0.010	0.600360	0.600320	0.007
30.9827	1.1419	1.1419	0.000	0.9703	0.9702	0.003	0.554950	0.554920	0.005
31.0077	1.1543	1.1543	0.000	0.9232	0.9232	0.001	0.522040	0.522020	0.004
31.0327	1.1618	1.1618	0.000	0.8867	0.8867	0.003	0.499640	0.499620	0.004
31.0577	1.1654	1.1654	0.000	0.8609	0.8609	0.002	0.485510	0.485500	0.002
31.0827	1.1659	1.1659	0.000	0.8449	0.8449	0.000	0.476870	0.476860	0.002
31.1077	1.1640	1.1640	0.000	0.8369	0.8369	0.000	0.471420	0.471420	0.000
31.1327	1.1603	1.1603	0.000	0.8346	0.8346	0.000	0.467750	0.467740	0.002
31.1577	1.1554	1.1554	0.000	0.8362	0.8362	0.000	0.465030	0.465030	0.000
31.1827	1.1496	1.1496	0.000	0.8403	0.8403	0.001	0.462920	0.462910	0.002
31.2077	1.1436	1.1436	0.000	0.8451	0.8451	0.001	0.461110	0.461110	0.000
31.2327	1.1377	1.1377	0.000	0.8497	0.8497	0.000	0.459420	0.459420	0.000
31.2577	1.1321	1.1321	0.000	0.8535	0.8535	0.001	0.457740	0.457740	0.000
31.2827	1.1269	1.1269	0.000	0.8563	0.8563	0.000	0.456060	0.456050	0.002
31.3077	1.1223	1.1223	0.000	0.8581	0.8581	0.001	0.454370	0.454360	0.002
31.3327	1.1181	1.1181	0.000	0.8592	0.8592	0.000	0.452680	0.452670	0.002
31.3577	1.1141	1.1141	0.000	0.8601	0.8601	0.001	0.451050	0.451040	0.002
31.3827	1.1103	1.1103	0.000	0.8610	0.8610	0.001	0.449530	0.449530	0.000
31.4077	1.1065	1.1065	0.000	0.8621	0.8621	0.001	0.448130	0.448130	0.000
31.4327	1.1025	1.1025	0.000	0.8637	0.8637	0.000	0.446890	0.446880	0.002
31.4577	1.0984	1.0984	0.000	0.8659	0.8659	0.000	0.445760	0.445750	0.002
31.4827	1.0940	1.0940	0.000	0.8683	0.8683	0.001	0.444750	0.444740	0.002
31.5077	1.0895	1.0895	0.000	0.8710	0.8710	0.001	0.443790	0.443780	0.002
31.5327	1.0848	1.0848	0.000	0.8738	0.8738	0.002	0.442920	0.442920	0.000
31.5577	1.0802	1.0802	0.000	0.8761	0.8761	0.001	0.441950	0.441940	0.002
31.5827	1.0755	1.0755	0.000	0.8780	0.8780	0.000	0.440900	0.440890	0.002

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
31.6077	1.0710	1.0710	0.000	0.8792	0.8792	0.000	0.439700	0.439690	0.002
31.6327	1.0666	1.0666	0.000	0.8797	0.8797	0.001	0.438330	0.438330	0.000
31.6577	1.0623	1.0623	0.000	0.8794	0.8794	0.001	0.436800	0.436790	0.002
31.6827	1.0582	1.0582	0.000	0.8784	0.8784	0.000	0.435130	0.435120	0.002
31.7077	1.0543	1.0543	0.000	0.8770	0.8770	0.000	0.433330	0.433320	0.002
31.7327	1.0505	1.0505	0.000	0.8753	0.8753	0.000	0.431490	0.431490	0.000
31.7577	1.0468	1.0468	0.000	0.8734	0.8734	0.001	0.429680	0.429680	0.000
31.7827	1.0432	1.0432	0.000	0.8717	0.8717	0.001	0.427980	0.427970	0.002
31.8077	1.0397	1.0397	0.000	0.8702	0.8702	0.000	0.426420	0.426410	0.002
31.8327	1.0363	1.0363	0.000	0.8691	0.8691	0.000	0.425060	0.425050	0.002
31.8577	1.0330	1.0330	0.000	0.8684	0.8684	0.000	0.423880	0.423870	0.002
31.8827	1.0298	1.0298	0.000	0.8680	0.8679	0.001	0.422860	0.422850	0.002
31.9077	1.0267	1.0267	0.000	0.8678	0.8678	0.001	0.422000	0.421990	0.002
31.9327	1.0238	1.0238	0.000	0.8676	0.8676	0.002	0.421190	0.421180	0.002
31.9577	1.0210	1.0210	0.000	0.8674	0.8674	0.001	0.420400	0.420390	0.002
31.9827	1.0184	1.0184	0.000	0.8669	0.8669	0.000	0.419560	0.419560	0.000
32.0077	1.0159	1.0159	0.000	0.8660	0.8660	0.000	0.418630	0.418630	0.000
32.0327	1.0136	1.0136	0.000	0.8647	0.8647	0.001	0.417590	0.417580	0.002
32.0577	1.0114	1.0114	0.000	0.8629	0.8629	0.000	0.416400	0.416390	0.002
32.0827	1.0093	1.0093	0.000	0.8607	0.8607	0.000	0.415120	0.415110	0.002
32.1077	1.0073	1.0073	0.000	0.8582	0.8582	0.000	0.413720	0.413720	0.000
32.1327	1.0055	1.0055	0.000	0.8555	0.8555	0.001	0.412260	0.412250	0.002
32.1577	1.0037	1.0037	0.000	0.8526	0.8526	0.001	0.410810	0.410800	0.002
32.1827	1.0021	1.0021	0.000	0.8498	0.8497	0.001	0.409380	0.409380	0.000
32.2077	1.0005	1.0005	0.000	0.8470	0.8470	0.001	0.408030	0.408030	0.000
32.2327	0.9991	0.9991	0.000	0.8444	0.8444	0.001	0.406750	0.406750	0.000
32.2577	0.9977	0.9977	0.000	0.8419	0.8419	0.000	0.405590	0.405580	0.002
32.2827	0.9965	0.9965	0.000	0.8397	0.8397	0.000	0.404520	0.404510	0.002
32.3077	0.9954	0.9954	0.000	0.8376	0.8376	0.001	0.403540	0.403540	0.000
32.3327	0.9944	0.9944	0.000	0.8356	0.8356	0.000	0.402610	0.402610	0.000
32.3576	0.9935	0.9935	0.000	0.8336	0.8336	0.000	0.401710	0.401710	0.000
32.3826	0.9927	0.9927	0.000	0.8315	0.8315	0.001	0.400800	0.400790	0.002
32.4076	0.9920	0.9920	0.000	0.8293	0.8293	0.000	0.399860	0.399850	0.003
32.4326	0.9914	0.9914	0.000	0.8269	0.8269	0.000	0.398890	0.398880	0.003
32.4576	0.9909	0.9909	0.000	0.8243	0.8243	0.001	0.397850	0.397840	0.003
32.4826	0.9904	0.9904	0.000	0.8216	0.8216	0.000	0.396770	0.396760	0.003
32.5076	0.9900	0.9900	0.000	0.8186	0.8186	0.000	0.395650	0.395640	0.003
32.5326	0.9896	0.9896	0.000	0.8156	0.8156	0.000	0.394510	0.394500	0.003
32.5576	0.9893	0.9893	0.000	0.8125	0.8125	0.001	0.393370	0.393360	0.003
32.5826	0.9890	0.9890	0.000	0.8094	0.8094	0.000	0.392240	0.392240	0.000
32.6076	0.9888	0.9888	0.000	0.8063	0.8063	0.001	0.391160	0.391160	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
32.6326	0.9886	0.9886	0.000	0.8034	0.8034	0.001	0.390130	0.390120	0.003
32.6576	0.9885	0.9885	0.000	0.8004	0.8004	0.000	0.389130	0.389130	0.000
32.6826	0.9884	0.9884	0.001	0.7978	0.7978	0.001	0.388230	0.388220	0.003
32.7076	0.9884	0.9884	0.000	0.7952	0.7952	0.000	0.387380	0.387370	0.003
32.7326	0.9884	0.9884	0.000	0.7927	0.7927	0.000	0.386580	0.386570	0.003
32.7575	0.9884	0.9884	0.000	0.7903	0.7903	0.000	0.385810	0.385810	0.000
32.7825	0.9885	0.9885	0.001	0.7880	0.7880	0.001	0.385080	0.385070	0.003
32.8075	0.9886	0.9886	0.000	0.7856	0.7856	0.000	0.384350	0.384340	0.003
32.8325	0.9888	0.9888	0.000	0.7832	0.7832	0.001	0.383630	0.383620	0.003
32.8575	0.9890	0.9890	0.000	0.7808	0.7808	0.001	0.382900	0.382890	0.003
32.8825	0.9891	0.9891	0.001	0.7783	0.7783	0.000	0.382160	0.382150	0.003
32.9075	0.9893	0.9893	0.000	0.7758	0.7758	0.000	0.381420	0.381420	0.000
32.9325	0.9895	0.9895	0.000	0.7733	0.7733	0.001	0.380680	0.380680	0.000
32.9575	0.9897	0.9897	0.000	0.7707	0.7707	0.000	0.379950	0.379940	0.003
32.9825	0.9899	0.9899	0.000	0.7682	0.7682	0.001	0.379240	0.379230	0.003
33.0075	0.9902	0.9902	0.000	0.7658	0.7658	0.001	0.378570	0.378560	0.003
33.0325	0.9904	0.9904	0.000	0.7635	0.7635	0.000	0.377940	0.377930	0.003
33.0575	0.9906	0.9906	0.000	0.7613	0.7613	0.000	0.377340	0.377340	0.000
33.0825	0.9908	0.9908	0.000	0.7592	0.7592	0.001	0.376790	0.376790	0.000
33.1075	0.9911	0.9911	0.000	0.7572	0.7572	0.001	0.376280	0.376270	0.003
33.1325	0.9914	0.9914	0.000	0.7553	0.7553	0.001	0.375800	0.375790	0.003
33.1575	0.9916	0.9916	0.000	0.7535	0.7535	0.001	0.375360	0.375360	0.000
33.1824	0.9919	0.9919	0.000	0.7518	0.7518	0.001	0.374940	0.374940	0.000
33.2074	0.9922	0.9922	0.000	0.7501	0.7501	0.001	0.374540	0.374530	0.003
33.2324	0.9924	0.9924	0.000	0.7485	0.7485	0.000	0.374150	0.374150	0.000
33.2574	0.9927	0.9927	0.000	0.7469	0.7469	0.000	0.373780	0.373770	0.003
33.2824	0.9930	0.9930	0.000	0.7453	0.7454	0.001	0.373410	0.373400	0.003
33.3074	0.9933	0.9933	0.001	0.7438	0.7438	0.000	0.373050	0.373050	0.000
33.3324	0.9935	0.9935	0.000	0.7423	0.7423	0.000	0.372700	0.372690	0.003
33.3574	0.9938	0.9938	0.000	0.7408	0.7408	0.000	0.372360	0.372350	0.003
33.3824	0.9940	0.9940	0.000	0.7394	0.7394	0.001	0.372040	0.372030	0.003
33.4074	0.9943	0.9943	0.000	0.7380	0.7380	0.001	0.371740	0.371730	0.003
33.4324	0.9945	0.9945	0.000	0.7367	0.7367	0.000	0.371450	0.371450	0.000
33.4574	0.9947	0.9947	0.000	0.7355	0.7355	0.000	0.371200	0.371200	0.000
33.4824	0.9949	0.9949	0.000	0.7344	0.7344	0.000	0.370980	0.370970	0.003
33.5074	0.9952	0.9952	0.000	0.7334	0.7334	0.001	0.370780	0.370780	0.000
33.5324	0.9954	0.9954	0.000	0.7325	0.7325	0.000	0.370610	0.370610	0.000
33.5574	0.9956	0.9956	0.001	0.7317	0.7317	0.000	0.370460	0.370460	0.000
33.5823	0.9958	0.9958	0.001	0.7309	0.7309	0.000	0.370340	0.370330	0.003
33.6073	0.9961	0.9961	0.000	0.7302	0.7302	0.000	0.370230	0.370220	0.003
33.6323	0.9963	0.9963	0.000	0.7296	0.7296	0.001	0.370130	0.370130	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
33.6573	0.9965	0.9965	0.000	0.7291	0.7290	0.001	0.370050	0.370040	0.003
33.6823	0.9967	0.9967	0.000	0.7285	0.7285	0.001	0.369970	0.369970	0.000
33.7073	0.9969	0.9969	0.000	0.7280	0.7280	0.001	0.369930	0.369920	0.003
33.7323	0.9971	0.9971	0.000	0.7277	0.7277	0.000	0.369900	0.369890	0.003
33.7573	0.9972	0.9972	0.000	0.7272	0.7272	0.000	0.369830	0.369830	0.000
33.7823	0.9974	0.9974	0.000	0.7268	0.7268	0.001	0.369790	0.369790	0.000
33.8073	0.9976	0.9976	0.000	0.7264	0.7264	0.001	0.369760	0.369760	0.000
33.8323	0.9977	0.9977	0.000	0.7261	0.7261	0.000	0.369740	0.369730	0.003
33.8573	0.9979	0.9979	0.000	0.7259	0.7259	0.000	0.369740	0.369730	0.003
33.8823	0.9980	0.9980	0.000	0.7257	0.7257	0.000	0.369740	0.369740	0.000
33.9073	0.9982	0.9982	0.000	0.7258	0.7258	0.000	0.369790	0.369790	0.000
33.9323	0.9983	0.9983	0.000	0.7258	0.7258	0.000	0.369900	0.369890	0.003
33.9573	0.9985	0.9985	0.000	0.7259	0.7259	0.001	0.369980	0.369980	0.000
33.9823	0.9986	0.9986	0.000	0.7260	0.7260	0.000	0.370070	0.370070	0.000
34.0072	0.9987	0.9987	0.000	0.7262	0.7262	0.000	0.370170	0.370170	0.000
34.0322	0.9989	0.9989	0.000	0.7264	0.7264	0.000	0.370290	0.370280	0.003
34.0572	0.9990	0.9990	0.000	0.7267	0.7267	0.000	0.370410	0.370400	0.003
34.0822	0.9991	0.9991	0.000	0.7270	0.7270	0.000	0.370530	0.370530	0.000
34.1072	0.9992	0.9992	0.000	0.7273	0.7273	0.000	0.370670	0.370670	0.000
34.1322	0.9994	0.9994	0.000	0.7277	0.7277	0.000	0.370810	0.370810	0.000
34.1572	0.9995	0.9995	0.000	0.7280	0.7280	0.001	0.370960	0.370960	0.000
34.1822	0.9996	0.9996	0.000	0.7285	0.7285	0.000	0.371120	0.371110	0.003
34.2072	0.9997	0.9997	0.000	0.7289	0.7289	0.000	0.371280	0.371270	0.003
34.2322	0.9997	0.9997	0.000	0.7294	0.7294	0.001	0.371450	0.371440	0.003
34.2572	0.9998	0.9998	0.000	0.7298	0.7298	0.000	0.371620	0.371620	0.000
34.2822	0.9999	0.9999	0.001	0.7304	0.7304	0.001	0.371810	0.371800	0.003
34.3072	1.0000	1.0000	0.001	0.7310	0.7310	0.001	0.372000	0.372000	0.000
34.3322	1.0001	1.0001	0.000	0.7316	0.7316	0.000	0.372210	0.372210	0.000
34.3572	1.0001	1.0001	0.000	0.7323	0.7323	0.000	0.372430	0.372420	0.003
34.3822	1.0002	1.0002	0.000	0.7330	0.7330	0.000	0.372650	0.372640	0.003
34.4071	1.0003	1.0003	0.000	0.7337	0.7337	0.000	0.372880	0.372870	0.003
34.4321	1.0003	1.0003	0.000	0.7344	0.7344	0.000	0.373110	0.373110	0.000
34.4571	1.0004	1.0004	0.000	0.7352	0.7352	0.000	0.373350	0.373340	0.003
34.4821	1.0005	1.0005	0.000	0.7360	0.7360	0.000	0.373590	0.373580	0.003
34.5071	1.0005	1.0005	0.000	0.7367	0.7367	0.000	0.373830	0.373830	0.000
34.5321	1.0006	1.0006	0.000	0.7375	0.7375	0.000	0.374080	0.374070	0.003
34.5571	1.0006	1.0006	0.000	0.7384	0.7384	0.000	0.374320	0.374320	0.000
34.5821	1.0007	1.0007	0.000	0.7392	0.7392	0.000	0.374570	0.374570	0.000
34.6071	1.0007	1.0007	0.000	0.7400	0.7400	0.000	0.374820	0.374820	0.000
34.6321	1.0008	1.0008	0.000	0.7408	0.7408	0.000	0.375080	0.375070	0.003
34.6571	1.0008	1.0008	0.000	0.7417	0.7417	0.000	0.375330	0.375330	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
34.6821	1.0008	1.0008	0.000	0.7426	0.7426	0.000	0.375590	0.375580	0.003
34.7071	1.0009	1.0009	0.000	0.7434	0.7434	0.000	0.375850	0.375840	0.003
34.7321	1.0009	1.0009	0.000	0.7443	0.7443	0.000	0.376110	0.376110	0.000
34.7571	1.0009	1.0009	0.000	0.7452	0.7452	0.001	0.376380	0.376370	0.003
34.7821	1.0009	1.0009	0.000	0.7461	0.7461	0.001	0.376640	0.376640	0.000
34.807	1.0010	1.0010	0.000	0.7470	0.7470	0.000	0.376910	0.376900	0.003
34.832	1.0010	1.0010	0.000	0.7480	0.7480	0.000	0.377170	0.377170	0.000
34.857	1.0010	1.0010	0.000	0.7489	0.7489	0.000	0.377440	0.377440	0.000
34.882	1.0010	1.0010	0.000	0.7498	0.7498	0.001	0.377710	0.377700	0.003
34.907	1.0010	1.0010	0.000	0.7507	0.7507	0.000	0.377970	0.377960	0.003
34.932	1.0010	1.0010	0.000	0.7516	0.7516	0.001	0.378230	0.378220	0.003
34.957	1.0010	1.0010	0.000	0.7525	0.7525	0.001	0.378480	0.378480	0.000
34.982	1.0010	1.0010	0.000	0.7533	0.7534	0.001	0.378740	0.378730	0.003
35.007	1.0010	1.0011	0.010	0.7542	0.7542	0.000	0.378990	0.378980	0.003
35.032	1.0010	1.0010	0.000	0.7551	0.7551	0.000	0.379230	0.379230	0.000
35.057	1.0010	1.0010	0.000	0.7560	0.7560	0.000	0.379480	0.379480	0.000
35.082	1.0010	1.0010	0.000	0.7568	0.7568	0.000	0.379730	0.379720	0.003
35.107	1.0010	1.0010	0.000	0.7577	0.7577	0.000	0.379970	0.379960	0.003
35.132	1.0010	1.0010	0.000	0.7585	0.7585	0.000	0.380200	0.380200	0.000
35.157	1.0010	1.0010	0.000	0.7593	0.7593	0.000	0.380440	0.380440	0.000
35.182	1.0010	1.0010	0.000	0.7601	0.7601	0.001	0.380670	0.380660	0.003
35.207	1.0010	1.0010	0.000	0.7609	0.7609	0.000	0.380900	0.380890	0.003
35.2319	1.0010	1.0010	0.000	0.7617	0.7617	0.000	0.381120	0.381110	0.003
35.2569	1.0010	1.0010	0.000	0.7625	0.7625	0.000	0.381340	0.381330	0.003
35.2819	1.0009	1.0009	0.000	0.7633	0.7633	0.000	0.381550	0.381550	0.000
35.3069	1.0009	1.0009	0.000	0.7640	0.7640	0.000	0.381760	0.381750	0.003
35.3319	1.0009	1.0009	0.000	0.7647	0.7647	0.001	0.381950	0.381950	0.000
35.3569	1.0009	1.0009	0.000	0.7654	0.7654	0.000	0.382150	0.382150	0.000
35.3819	1.0008	1.0008	0.000	0.7662	0.7662	0.000	0.382350	0.382340	0.003
35.4069	1.0008	1.0008	0.000	0.7668	0.7668	0.000	0.382530	0.382530	0.000
35.4319	1.0008	1.0008	0.000	0.7675	0.7675	0.000	0.382710	0.382710	0.000
35.4569	1.0008	1.0008	0.000	0.7681	0.7681	0.000	0.382890	0.382880	0.003
35.4819	1.0007	1.0007	0.000	0.7688	0.7688	0.000	0.383050	0.383050	0.000
35.5069	1.0007	1.0007	0.000	0.7694	0.7694	0.000	0.383210	0.383210	0.000
35.5319	1.0007	1.0007	0.000	0.7699	0.7699	0.001	0.383370	0.383370	0.000
35.5569	1.0006	1.0006	0.000	0.7705	0.7705	0.000	0.383520	0.383520	0.000
35.5819	1.0006	1.0006	0.000	0.7710	0.7710	0.000	0.383660	0.383660	0.000
35.6069	1.0006	1.0006	0.000	0.7715	0.7715	0.000	0.383800	0.383790	0.003
35.6318	1.0005	1.0005	0.000	0.7721	0.7721	0.000	0.383930	0.383930	0.000
35.6568	1.0005	1.0005	0.000	0.7725	0.7725	0.000	0.384060	0.384050	0.003
35.6818	1.0005	1.0005	0.000	0.7730	0.7730	0.001	0.384180	0.384170	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
35.7068	1.0004	1.0004	0.000	0.7734	0.7734	0.000	0.384290	0.384290	0.000
35.7318	1.0004	1.0004	0.000	0.7738	0.7738	0.001	0.384400	0.384400	0.000
35.7568	1.0003	1.0003	0.000	0.7742	0.7742	0.000	0.384500	0.384490	0.003
35.7818	1.0003	1.0003	0.000	0.7746	0.7746	0.000	0.384600	0.384590	0.003
35.8068	1.0003	1.0003	0.000	0.7750	0.7750	0.000	0.384680	0.384680	0.000
35.8318	1.0002	1.0002	0.000	0.7753	0.7753	0.000	0.384760	0.384760	0.000
35.8568	1.0002	1.0002	0.000	0.7756	0.7756	0.000	0.384840	0.384830	0.003
35.8818	1.0002	1.0002	0.000	0.7759	0.7759	0.000	0.384890	0.384880	0.003
35.9068	1.0001	1.0001	0.000	0.7762	0.7762	0.001	0.384950	0.384950	0.000
35.9318	1.0001	1.0001	0.000	0.7763	0.7763	0.000	0.384980	0.384980	0.000
35.9568	1.0000	1.0000	0.000	0.7766	0.7766	0.000	0.385040	0.385040	0.000
35.9818	1.0000	1.0000	0.000	0.7768	0.7768	0.000	0.385090	0.385090	0.000
36.0068	1.0000	1.0000	0.000	0.7770	0.7770	0.000	0.385140	0.385140	0.000
36.0317	0.9999	0.9999	0.000	0.7771	0.7771	0.000	0.385170	0.385170	0.000
36.0567	0.9999	0.9999	0.000	0.7773	0.7773	0.000	0.385200	0.385200	0.000
36.0817	0.9998	0.9998	0.000	0.7775	0.7775	0.000	0.385230	0.385220	0.003
36.1067	0.9998	0.9998	0.000	0.7777	0.7777	0.000	0.385280	0.385280	0.000
36.1317	0.9998	0.9998	0.001	0.7778	0.7778	0.000	0.385270	0.385260	0.003
36.1567	0.9997	0.9997	0.000	0.7779	0.7779	0.000	0.385290	0.385290	0.000
36.1817	0.9997	0.9997	0.000	0.7780	0.7780	0.000	0.385290	0.385280	0.003
36.2067	0.9997	0.9997	0.000	0.7780	0.7780	0.000	0.385280	0.385270	0.003
36.2317	0.9996	0.9996	0.001	0.7781	0.7781	0.000	0.385270	0.385270	0.000
36.2567	0.9996	0.9996	0.000	0.7781	0.7781	0.000	0.385260	0.385250	0.003
36.2817	0.9996	0.9996	0.000	0.7780	0.7780	0.000	0.385230	0.385220	0.003
36.3067	0.9995	0.9995	0.000	0.7780	0.7780	0.000	0.385200	0.385190	0.003
36.3317	0.9995	0.9995	0.000	0.7780	0.7780	0.000	0.385170	0.385170	0.000
36.3567	0.9994	0.9994	0.000	0.7779	0.7779	0.000	0.385150	0.385140	0.003
36.3817	0.9994	0.9994	0.000	0.7777	0.7777	0.000	0.385080	0.385080	0.000
36.4067	0.9994	0.9994	0.000	0.7776	0.7776	0.001	0.385040	0.385030	0.003
36.4317	0.9993	0.9993	0.000	0.7775	0.7775	0.000	0.384990	0.384980	0.003
36.4566	0.9993	0.9993	0.000	0.7774	0.7774	0.000	0.384950	0.384950	0.000
36.4816	0.9993	0.9993	0.000	0.7773	0.7773	0.000	0.384900	0.384900	0.000
36.5066	0.9993	0.9993	0.000	0.7772	0.7772	0.000	0.384850	0.384840	0.003
36.5316	0.9992	0.9992	0.000	0.7770	0.7770	0.000	0.384790	0.384780	0.003
36.5566	0.9992	0.9992	0.000	0.7768	0.7768	0.000	0.384690	0.384680	0.003
36.5816	0.9992	0.9992	0.000	0.7766	0.7766	0.000	0.384620	0.384610	0.003
36.6066	0.9992	0.9992	0.000	0.7764	0.7764	0.000	0.384550	0.384540	0.003
36.6316	0.9991	0.9991	0.000	0.7762	0.7762	0.001	0.384470	0.384470	0.000
36.6566	0.9991	0.9991	0.000	0.7760	0.7760	0.000	0.384390	0.384390	0.000
36.6816	0.9991	0.9991	0.000	0.7758	0.7758	0.000	0.384310	0.384310	0.000
36.7066	0.9991	0.9991	0.000	0.7756	0.7756	0.000	0.384230	0.384230	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
36.7316	0.9991	0.9991	0.000	0.7753	0.7753	0.000	0.384150	0.384140	0.003
36.7566	0.9990	0.9990	0.000	0.7751	0.7751	0.000	0.384060	0.384060	0.000
36.7816	0.9990	0.9990	0.000	0.7748	0.7748	0.000	0.383980	0.383980	0.000
36.8066	0.9990	0.9990	0.000	0.7746	0.7746	0.000	0.383890	0.383890	0.000
36.8316	0.9990	0.9990	0.000	0.7743	0.7743	0.000	0.383810	0.383800	0.003
36.8565	0.9990	0.9990	0.000	0.7740	0.7740	0.000	0.383720	0.383710	0.003
36.8815	0.9990	0.9990	0.000	0.7738	0.7738	0.000	0.383630	0.383620	0.003
36.9065	0.9989	0.9989	0.000	0.7735	0.7735	0.000	0.383540	0.383530	0.003
36.9315	0.9989	0.9989	0.000	0.7732	0.7732	0.000	0.383440	0.383440	0.000
36.9565	0.9989	0.9989	0.000	0.7729	0.7729	0.000	0.383350	0.383340	0.003
36.9815	0.9989	0.9989	0.001	0.7726	0.7726	0.000	0.383250	0.383250	0.000
37.0065	0.9989	0.9989	0.001	0.7723	0.7723	0.000	0.383160	0.383150	0.003
37.0315	0.9989	0.9989	0.001	0.7720	0.7720	0.001	0.383060	0.383060	0.000
37.0565	0.9989	0.9989	0.000	0.7717	0.7717	0.000	0.382960	0.382960	0.000
37.0815	0.9989	0.9989	0.000	0.7714	0.7714	0.000	0.382870	0.382860	0.003
37.1065	0.9989	0.9989	0.000	0.7711	0.7711	0.000	0.382770	0.382770	0.000
37.1315	0.9989	0.9989	0.000	0.7708	0.7708	0.000	0.382670	0.382670	0.000
37.1565	0.9989	0.9989	0.000	0.7705	0.7705	0.000	0.382580	0.382570	0.003
37.1815	0.9988	0.9988	0.000	0.7702	0.7702	0.000	0.382480	0.382480	0.000
37.2065	0.9988	0.9988	0.000	0.7699	0.7699	0.000	0.382390	0.382380	0.003
37.2315	0.9988	0.9988	0.000	0.7695	0.7695	0.000	0.382290	0.382290	0.000
37.2565	0.9988	0.9988	0.000	0.7692	0.7692	0.000	0.382200	0.382200	0.000
37.2814	0.9988	0.9988	0.000	0.7689	0.7689	0.000	0.382110	0.382100	0.003
37.3064	0.9988	0.9988	0.000	0.7686	0.7686	0.000	0.382020	0.382010	0.003
37.3314	0.9988	0.9988	0.000	0.7683	0.7683	0.000	0.381920	0.381920	0.000
37.3564	0.9988	0.9988	0.001	0.7680	0.7680	0.000	0.381830	0.381830	0.000
37.3814	0.9988	0.9988	0.000	0.7677	0.7677	0.000	0.381750	0.381740	0.003
37.4064	0.9988	0.9988	0.000	0.7674	0.7674	0.000	0.381660	0.381650	0.003
37.4314	0.9988	0.9988	0.000	0.7672	0.7672	0.000	0.381580	0.381570	0.003
37.4564	0.9988	0.9988	0.000	0.7669	0.7669	0.001	0.381490	0.381490	0.000
37.4814	0.9988	0.9988	0.000	0.7666	0.7666	0.000	0.381410	0.381410	0.000
37.5064	0.9988	0.9988	0.000	0.7663	0.7663	0.000	0.381330	0.381320	0.003
37.5314	0.9988	0.9988	0.000	0.7660	0.7660	0.000	0.381250	0.381250	0.000
37.5564	0.9988	0.9988	0.000	0.7658	0.7658	0.000	0.381170	0.381170	0.000
37.5814	0.9989	0.9989	0.000	0.7655	0.7655	0.000	0.381100	0.381100	0.000
37.6064	0.9989	0.9989	0.000	0.7653	0.7653	0.000	0.381030	0.381020	0.003
37.6314	0.9989	0.9989	0.000	0.7650	0.7650	0.000	0.380950	0.380950	0.000
37.6564	0.9989	0.9989	0.001	0.7648	0.7648	0.000	0.380880	0.380880	0.000
37.6813	0.9989	0.9989	0.001	0.7645	0.7645	0.000	0.380840	0.380840	0.000
37.7063	0.9989	0.9989	0.000	0.7643	0.7643	0.000	0.380780	0.380770	0.003
37.7313	0.9989	0.9989	0.000	0.7640	0.7640	0.000	0.380710	0.380700	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU) *		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
37.7563	0.9989	0.9989	0.000	0.7638	0.7638	0.000	0.380640	0.380640	0.000
37.7813	0.9989	0.9989	0.000	0.7636	0.7636	0.000	0.380590	0.380580	0.003
37.8063	0.9989	0.9989	0.001	0.7634	0.7634	0.000	0.380510	0.380510	0.000
37.8313	0.9989	0.9989	0.000	0.7632	0.7632	0.000	0.380460	0.380460	0.000
37.8563	0.9989	0.9989	0.001	0.7630	0.7630	0.000	0.380410	0.380400	0.003
37.8813	0.9989	0.9989	0.001	0.7628	0.7628	0.000	0.380360	0.380350	0.003
37.9063	0.9989	0.9989	0.000	0.7627	0.7627	0.000	0.380330	0.380320	0.003
37.9313	0.9990	0.9990	0.000	0.7626	0.7626	0.000	0.380280	0.380280	0.000
37.9563	0.9990	0.9990	0.000	0.7624	0.7624	0.000	0.380240	0.380230	0.003
37.9813	0.9990	0.9990	0.000	0.7622	0.7622	0.000	0.380190	0.380190	0.000
38.0063	0.9990	0.9990	0.000	0.7620	0.7620	0.000	0.380150	0.380140	0.003
38.0313	0.9990	0.9990	0.000	0.7619	0.7619	0.000	0.380110	0.380100	0.003
38.0563	0.9990	0.9990	0.000	0.7617	0.7617	0.000	0.380070	0.380060	0.003
38.0812	0.9990	0.9990	0.000	0.7616	0.7616	0.000	0.380030	0.380030	0.000
38.1062	0.9990	0.9990	0.000	0.7615	0.7615	0.000	0.380000	0.380000	0.000
38.1312	0.9990	0.9990	0.000	0.7614	0.7613	0.001	0.379970	0.379960	0.003
38.1562	0.9991	0.9991	0.000	0.7612	0.7612	0.000	0.379940	0.379930	0.003
38.1812	0.9991	0.9991	0.000	0.7611	0.7611	0.000	0.379920	0.379910	0.003
38.2062	0.9991	0.9991	0.000	0.7610	0.7610	0.000	0.379890	0.379890	0.000
38.2312	0.9991	0.9991	0.000	0.7609	0.7609	0.001	0.379870	0.379860	0.003
38.2562	0.9991	0.9991	0.000	0.7608	0.7608	0.001	0.379850	0.379840	0.003
38.2812	0.9991	0.9991	0.001	0.7608	0.7608	0.000	0.379830	0.379830	0.000
38.3062	0.9991	0.9991	0.000	0.7607	0.7607	0.000	0.379810	0.379810	0.000
38.3312	0.9991	0.9991	0.000	0.7606	0.7606	0.001	0.379800	0.379800	0.000
38.3562	0.9991	0.9991	0.000	0.7605	0.7605	0.000	0.379790	0.379780	0.003
38.3812	0.9992	0.9992	0.000	0.7604	0.7604	0.000	0.379720	0.379710	0.003
38.4062	0.9992	0.9992	0.000	0.7604	0.7604	0.001	0.379720	0.379720	0.000
38.4312	0.9992	0.9992	0.000	0.7603	0.7603	0.000	0.379730	0.379730	0.000
38.4562	0.9992	0.9992	0.001	0.7602	0.7602	0.000	0.379690	0.379680	0.003
38.4812	0.9992	0.9992	0.000	0.7603	0.7603	0.000	0.379750	0.379740	0.003
38.5061	0.9992	0.9992	0.000	0.7602	0.7602	0.000	0.379760	0.379760	0.000
38.5311	0.9992	0.9992	0.000	0.7602	0.7602	0.000	0.379780	0.379770	0.003
38.5561	0.9992	0.9992	0.000	0.7602	0.7602	0.000	0.379750	0.379750	0.000
38.5811	0.9993	0.9993	0.000	0.7602	0.7602	0.000	0.379760	0.379760	0.000
38.6061	0.9993	0.9993	0.000	0.7602	0.7602	0.000	0.379770	0.379770	0.000
38.6311	0.9993	0.9993	0.000	0.7603	0.7603	0.000	0.379790	0.379780	0.003
38.6561	0.9993	0.9993	0.000	0.7603	0.7603	0.000	0.379790	0.379790	0.000
38.6811	0.9993	0.9993	0.000	0.7603	0.7603	0.000	0.379810	0.379800	0.003
38.7061	0.9993	0.9993	0.000	0.7603	0.7603	0.000	0.379820	0.379820	0.000
38.7311	0.9993	0.9993	0.000	0.7604	0.7604	0.000	0.379830	0.379830	0.000
38.7561	0.9993	0.9993	0.000	0.7604	0.7604	0.000	0.379850	0.379840	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU)*		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
38.7811	0.9993	0.9993	0.000	0.7604	0.7604	0.000	0.379860	0.379860	0.000
38.8061	0.9994	0.9994	0.000	0.7605	0.7605	0.000	0.379880	0.379880	0.000
38.8311	0.9994	0.9994	0.000	0.7605	0.7605	0.000	0.379900	0.379890	0.003
38.8561	0.9994	0.9994	0.001	0.7606	0.7606	0.000	0.379920	0.379920	0.000
38.8811	0.9994	0.9994	0.000	0.7607	0.7607	0.000	0.379950	0.379940	0.003
38.906	0.9994	0.9994	0.000	0.7607	0.7607	0.000	0.379970	0.379970	0.000
38.931	0.9994	0.9994	0.000	0.7608	0.7608	0.001	0.380000	0.379990	0.003
38.956	0.9994	0.9994	0.000	0.7609	0.7609	0.000	0.380020	0.380010	0.003
38.981	0.9994	0.9994	0.000	0.7609	0.7609	0.001	0.380040	0.380030	0.003
39.006	0.9994	0.9994	0.000	0.7610	0.7610	0.000	0.380060	0.380050	0.003
39.031	0.9994	0.9994	0.000	0.7610	0.7610	0.000	0.380080	0.380080	0.000
39.056	0.9994	0.9994	0.000	0.7611	0.7611	0.000	0.380110	0.380100	0.003
39.081	0.9994	0.9994	0.000	0.7612	0.7612	0.000	0.380130	0.380130	0.000
39.106	0.9994	0.9994	0.000	0.7613	0.7613	0.000	0.380160	0.380160	0.000
39.131	0.9994	0.9994	0.000	0.7614	0.7614	0.000	0.380190	0.380190	0.000
39.156	0.9995	0.9995	0.000	0.7614	0.7614	0.000	0.380220	0.380210	0.003
39.181	0.9995	0.9995	0.001	0.7615	0.7615	0.000	0.380240	0.380240	0.000
39.206	0.9995	0.9995	0.000	0.7616	0.7616	0.000	0.380280	0.380270	0.003
39.231	0.9995	0.9995	0.001	0.7617	0.7617	0.000	0.380310	0.380300	0.003
39.256	0.9995	0.9995	0.000	0.7618	0.7618	0.000	0.380340	0.380330	0.003
39.281	0.9995	0.9995	0.000	0.7619	0.7619	0.000	0.380370	0.380360	0.003
39.306	0.9995	0.9995	0.000	0.7620	0.7620	0.000	0.380400	0.380390	0.003
39.3309	0.9995	0.9995	0.000	0.7621	0.7621	0.000	0.380430	0.380420	0.003
39.3559	0.9995	0.9995	0.000	0.7622	0.7622	0.000	0.380460	0.380460	0.000
39.3809	0.9995	0.9995	0.000	0.7623	0.7623	0.000	0.380490	0.380490	0.000
39.4059	0.9995	0.9995	0.000	0.7624	0.7624	0.000	0.380520	0.380520	0.000
39.4309	0.9995	0.9995	0.000	0.7625	0.7625	0.000	0.380550	0.380550	0.000
39.4559	0.9995	0.9995	0.000	0.7626	0.7626	0.000	0.380590	0.380590	0.000
39.4809	0.9995	0.9995	0.000	0.7627	0.7627	0.000	0.380630	0.380620	0.003
39.5059	0.9995	0.9995	0.001	0.7629	0.7629	0.000	0.380660	0.380650	0.003
39.5309	0.9995	0.9995	0.000	0.7629	0.7629	0.000	0.380680	0.380680	0.000
39.5559	0.9995	0.9995	0.000	0.7631	0.7631	0.000	0.380720	0.380710	0.003
39.5809	0.9995	0.9995	0.000	0.7632	0.7632	0.000	0.380750	0.380740	0.003
39.6059	0.9995	0.9995	0.000	0.7633	0.7633	0.000	0.380780	0.380770	0.003
39.6309	0.9995	0.9995	0.000	0.7634	0.7634	0.000	0.380810	0.380800	0.003
39.6559	0.9995	0.9995	0.000	0.7635	0.7635	0.000	0.380830	0.380830	0.000
39.6809	0.9995	0.9995	0.000	0.7636	0.7636	0.000	0.380870	0.380860	0.003
39.7059	0.9995	0.9995	0.000	0.7637	0.7637	0.000	0.380900	0.380890	0.003
39.7308	0.9995	0.9995	0.000	0.7638	0.7638	0.000	0.380930	0.380920	0.003
39.7558	0.9995	0.9995	0.000	0.7639	0.7639	0.000	0.380960	0.380950	0.003
39.7808	0.9995	0.9995	0.000	0.7640	0.7640	0.000	0.380980	0.380980	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROLS
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SEQUENCE
PTI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR 16 1998 14:36
NOTE: * No var Load until 3 second (starting of SI Pump 21))

Time (second)	VOLT-DG21 (PU)			PELEC-DG21(PU)			QELEC-DG21(PU) *		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
39.8058	0.9995	0.9995	0.001	0.7641	0.7641	0.000	0.381010	0.381010	0.000
39.8308	0.9995	0.9995	0.000	0.7641	0.7641	0.001	0.381040	0.381030	0.003
39.8558	0.9995	0.9995	0.000	0.7642	0.7642	0.000	0.381070	0.381060	0.003
39.8808	0.9995	0.9995	0.000	0.7643	0.7643	0.003	0.381090	0.381080	0.003
39.9058	0.9995	0.9995	0.000	0.7644	0.7644	0.001	0.381120	0.381110	0.003
39.9308	0.9995	0.9995	0.001	0.7645	0.7645	0.000	0.381140	0.381130	0.003
39.9558	0.9995	0.9995	0.000	0.7646	0.7646	0.000	0.381160	0.381160	0.000
39.9808	0.9995	0.9995	0.000	0.7647	0.7647	0.000	0.381190	0.381190	0.000
40.0058	0.9995	0.9995	0.000	0.7648	0.7648	0.000	0.381210	0.381210	0.000

Max Delta
(%)

0.010

0.010

0.010

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
0	1.2957	1.2957	0.000			
0	1.2957	1.2957	0.000			
0.025	1.2962	1.2962	0.000	-0.000608	-0.000608	0.000
0.05	1.2984	1.2984	0.000	-0.001217	-0.001217	0.000
0.075	1.3024	1.3024	0.000	-0.001825	-0.001825	0.000
0.1	1.3075	1.3075	0.000	-0.002424	-0.002424	0.000
0.125	1.3129	1.3129	0.000	-0.003009	-0.003009	0.000
0.15	1.3182	1.3182	0.000	-0.003572	-0.003572	0.000
0.175	1.3233	1.3233	0.000	-0.004105	-0.004105	0.000
0.2	1.3282	1.3282	0.000	-0.004603	-0.004603	0.000
0.225	1.3330	1.3330	0.000	-0.005063	-0.005063	0.000
0.25	1.3376	1.3376	0.000	-0.005485	-0.005485	0.000
0.275	1.3422	1.3421	0.007	-0.005870	-0.005870	0.000
0.3	1.3466	1.3466	0.000	-0.006220	-0.006220	0.000
0.325	1.3510	1.3510	0.000	-0.006540	-0.006540	0.000
0.35	1.3551	1.3551	0.000	-0.006836	-0.006836	0.000
0.375	1.3590	1.3590	0.000	-0.007112	-0.007112	0.000
0.4	1.3624	1.3624	0.000	-0.007371	-0.007371	0.000
0.425	1.3653	1.3653	0.000	-0.007616	-0.007616	0.000
0.45	1.3678	1.3678	0.000	-0.007848	-0.007848	0.000
0.475	1.3697	1.3697	0.000	-0.008067	-0.008067	0.000
0.5	1.3711	1.3711	0.000	-0.008271	-0.008271	0.000
0.525	1.3720	1.3720	0.000	-0.008457	-0.008457	0.000
0.55	1.3725	1.3725	0.000	-0.008621	-0.008621	0.000
0.575	1.3726	1.3726	0.000	-0.008762	-0.008762	0.000
0.6	1.3725	1.3725	0.000	-0.008875	-0.008875	0.000
0.625	1.3720	1.3720	0.000	-0.008959	-0.008959	0.000
0.65	1.3714	1.3714	0.000	-0.009014	-0.009014	0.000
0.675	1.3705	1.3705	0.000	-0.009039	-0.009039	0.000
0.7	1.3693	1.3693	0.000	-0.009035	-0.009035	0.000
0.725	1.3679	1.3679	0.000	-0.009006	-0.009006	0.000
0.75	1.3663	1.3662	0.007	-0.008953	-0.008953	0.000
0.775	1.3643	1.3643	0.000	-0.008880	-0.008880	0.000
0.8	1.3620	1.3620	0.000	-0.008790	-0.008790	0.000
0.825	1.3594	1.3594	0.000	-0.008685	-0.008685	0.000
0.85	1.3565	1.3565	0.000	-0.008566	-0.008566	0.000
0.875	1.3534	1.3534	0.000	-0.008436	-0.008436	0.000
0.9	1.3500	1.3500	0.000	-0.008294	-0.008294	0.000
0.925	1.3465	1.3465	0.000	-0.008141	-0.008141	0.000
0.95	1.3429	1.3429	0.000	-0.007976	-0.007976	0.000
0.975	1.3392	1.3392	0.000	-0.007798	-0.007798	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
1	1.3355	1.3355	0.000	-0.007605	-0.007605	0.000
1.025	1.3318	1.3318	0.000	-0.007399	-0.007399	0.000
1.05	1.3281	1.3281	0.000	-0.007177	-0.007177	0.000
1.075	1.3245	1.3245	0.000	-0.006942	-0.006942	0.000
1.1	1.3210	1.3210	0.000	-0.006692	-0.006692	0.000
1.125	1.3175	1.3174	0.008	-0.006430	-0.006430	0.000
1.15	1.3140	1.3140	0.000	-0.006157	-0.006157	0.000
1.175	1.3105	1.3105	0.000	-0.005874	-0.005874	0.000
1.2	1.3070	1.3070	0.000	-0.005585	-0.005585	0.000
1.225	1.3034	1.3034	0.000	-0.005291	-0.005291	0.000
1.25	1.2999	1.2999	0.000	-0.004993	-0.004993	0.000
1.2749	1.2963	1.2963	0.000	-0.004693	-0.004693	0.000
1.2999	1.2928	1.2928	0.000	-0.004391	-0.004391	0.000
1.3249	1.2893	1.2893	0.000	-0.004090	-0.004090	0.002
1.3499	1.2858	1.2858	0.000	-0.003788	-0.003788	0.000
1.3749	1.2825	1.2825	0.000	-0.003486	-0.003486	0.000
1.3999	1.2792	1.2792	0.000	-0.003184	-0.003184	0.000
1.4249	1.2762	1.2761	0.008	-0.002882	-0.002882	0.000
1.4499	1.2732	1.2732	0.000	-0.002580	-0.002580	0.000
1.4749	1.2705	1.2705	0.000	-0.002278	-0.002278	0.000
1.4999	1.2679	1.2679	0.000	-0.001977	-0.001977	0.000
1.5249	1.2655	1.2655	0.000	-0.001677	-0.001677	0.000
1.5499	1.2633	1.2633	0.000	-0.001379	-0.001379	0.000
1.5749	1.2612	1.2612	0.000	-0.001084	-0.001084	0.000
1.5999	1.2593	1.2593	0.000	-0.000793	-0.000793	0.000
1.6249	1.2575	1.2575	0.000	-0.000507	-0.000507	0.000
1.6499	1.2558	1.2558	0.000	-0.000227	-0.000227	0.000
1.6749	1.2542	1.2542	0.000	0.000046	0.000046	0.002
1.6999	1.2528	1.2528	0.000	0.000311	0.000311	0.000
1.7249	1.2515	1.2515	0.000	0.000568	0.000568	0.000
1.7499	1.2503	1.2502	0.008	0.000816	0.000816	0.000
1.7749	1.2492	1.2492	0.000	0.001055	0.001055	0.000
1.7999	1.2482	1.2482	0.000	0.001286	0.001286	0.000
1.8249	1.2475	1.2475	0.000	0.001507	0.001507	0.000
1.8499	1.2468	1.2468	0.000	0.001719	0.001719	0.000
1.8749	1.2464	1.2464	0.000	0.001923	0.001923	0.000
1.8999	1.2461	1.2461	0.000	0.002118	0.002118	0.000
1.9249	1.2460	1.2460	0.000	0.002304	0.002304	0.000
1.9499	1.2460	1.2460	0.000	0.002480	0.002480	0.000
1.9749	1.2462	1.2462	0.000	0.002648	0.002648	0.000
1.9999	1.2465	1.2465	0.000	0.002806	0.002806	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
2.0249	1.2469	1.2469	0.000	0.002953	0.002953	0.000
2.0499	1.2475	1.2475	0.000	0.003091	0.003091	0.000
2.0749	1.2481	1.2481	0.000	0.003217	0.003217	0.000
2.0999	1.2489	1.2489	0.000	0.003333	0.003333	0.000
2.1249	1.2497	1.2497	0.000	0.003438	0.003438	0.000
2.1499	1.2507	1.2506	0.008	0.003532	0.003532	0.000
2.1749	1.2517	1.2517	0.000	0.003615	0.003615	0.000
2.1999	1.2528	1.2527	0.008	0.003687	0.003687	0.000
2.2249	1.2539	1.2539	0.000	0.003748	0.003748	0.000
2.2499	1.2552	1.2552	0.000	0.003799	0.003799	0.000
2.2749	1.2565	1.2565	0.000	0.003840	0.003840	0.000
2.2999	1.2579	1.2579	0.000	0.003872	0.003872	0.000
2.3249	1.2594	1.2594	0.000	0.003893	0.003893	0.000
2.3499	1.2610	1.2610	0.000	0.003906	0.003906	0.000
2.3749	1.2626	1.2626	0.000	0.003910	0.003910	0.000
2.3999	1.2643	1.2643	0.000	0.003905	0.003905	0.000
2.4249	1.2661	1.2661	0.000	0.003891	0.003891	0.000
2.4499	1.2678	1.2678	0.000	0.003869	0.003869	0.000
2.4749	1.2696	1.2696	0.000	0.003838	0.003838	0.000
2.4999	1.2715	1.2715	0.000	0.003800	0.003800	0.000
2.5249	1.2733	1.2733	0.000	0.003753	0.003753	0.000
2.5499	1.2751	1.2751	0.000	0.003698	0.003698	0.000
2.5749	1.2770	1.2770	0.000	0.003636	0.003636	0.000
2.5999	1.2789	1.2789	0.000	0.003567	0.003567	0.000
2.6249	1.2807	1.2807	0.000	0.003491	0.003491	0.000
2.6499	1.2826	1.2826	0.000	0.003409	0.003409	0.000
2.6749	1.2844	1.2844	0.000	0.003321	0.003321	0.000
2.6999	1.2863	1.2863	0.000	0.003227	0.003227	0.003
2.7249	1.2881	1.2881	0.000	0.003128	0.003128	0.000
2.7499	1.2899	1.2899	0.000	0.003025	0.003025	0.000
2.7749	1.2917	1.2917	0.000	0.002917	0.002917	0.000
2.7999	1.2935	1.2935	0.000	0.002805	0.002805	0.000
2.8249	1.2953	1.2952	0.008	0.002690	0.002690	0.004
2.8499	1.2970	1.2970	0.000	0.002572	0.002572	0.000
2.8749	1.2987	1.2987	0.000	0.002450	0.002450	0.000
2.8999	1.3003	1.3003	0.000	0.002326	0.002326	0.000
2.9249	1.3019	1.3019	0.000	0.002199	0.002199	0.000
2.9499	1.3035	1.3035	0.000	0.002071	0.002071	0.000
2.9749	1.3050	1.3050	0.000	0.001940	0.001940	0.000
2.9999	1.3064	1.3064	0.000	0.001808	0.001808	0.006
3.0082	1.3069	1.3069	0.000	0.001764	0.001764	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
3.0082	1.3069	1.3069	0.000	0.001764	0.001764	0.000
3.0332	1.4838	1.4838	0.000	-0.000180	-0.000180	0.000
3.0582	1.7093	1.7093	0.000	-0.002051	-0.002051	0.000
3.0832	1.9166	1.9166	0.000	-0.003873	-0.003873	0.000
3.1082	2.1088	2.1088	0.000	-0.005646	-0.005646	0.002
3.1332	2.2883	2.2883	0.000	-0.007356	-0.007356	0.001
3.1582	2.4566	2.4566	0.000	-0.008990	-0.008990	0.000
3.1832	2.6151	2.6151	0.000	-0.010534	-0.010534	0.000
3.2082	2.7648	2.7648	0.000	-0.011979	-0.011979	0.000
3.2332	2.9064	2.9064	0.000	-0.013320	-0.013320	0.000
3.2582	3.0407	3.0407	0.000	-0.014558	-0.014558	0.000
3.2832	3.1683	3.1683	0.000	-0.015701	-0.015701	0.000
3.3082	3.2898	3.2898	0.000	-0.016762	-0.016762	0.000
3.3332	3.4057	3.4057	0.000	-0.017755	-0.017755	0.000
3.3582	3.5164	3.5164	0.000	-0.018695	-0.018695	0.000
3.3832	3.6225	3.6225	0.000	-0.019597	-0.019597	0.000
3.4082	3.7241	3.7241	0.000	-0.020471	-0.020471	0.000
3.4332	3.8217	3.8217	0.000	-0.021324	-0.021324	0.000
3.4582	3.9085	3.9085	0.000	-0.022160	-0.022160	0.000
3.4832	3.9702	3.9702	0.000	-0.022975	-0.022975	0.000
3.5082	4.0000	4.0000	0.000	-0.023765	-0.023765	0.000
3.5332	3.9974	3.9974	0.000	-0.024521	-0.024521	0.000
3.5582	3.9672	3.9672	0.000	-0.025232	-0.025232	0.000
3.5832	3.9173	3.9173	0.000	-0.025889	-0.025889	0.000
3.6082	3.8576	3.8576	0.000	-0.026481	-0.026481	0.000
3.6332	3.7972	3.7972	0.000	-0.027002	-0.027002	0.000
3.6582	3.7435	3.7435	0.000	-0.027448	-0.027448	0.000
3.6832	3.7011	3.7011	0.000	-0.027817	-0.027818	0.004
3.7082	3.6716	3.6716	0.000	-0.028114	-0.028114	0.000
3.7332	3.6538	3.6538	0.000	-0.028342	-0.028342	0.000
3.7582	3.6447	3.6447	0.000	-0.028508	-0.028508	0.000
3.7832	3.6401	3.6401	0.000	-0.028622	-0.028622	0.000
3.8082	3.6359	3.6359	0.000	-0.028689	-0.028689	0.000
3.8332	3.6286	3.6286	0.000	-0.028718	-0.028719	0.003
3.8582	3.6158	3.6158	0.000	-0.028715	-0.028715	0.000
3.8832	3.5968	3.5968	0.000	-0.028681	-0.028681	0.000
3.9082	3.5718	3.5718	0.000	-0.028621	-0.028621	0.000
3.9332	3.5422	3.5422	0.000	-0.028533	-0.028533	0.000
3.9582	3.5098	3.5098	0.000	-0.028417	-0.028417	0.000
3.9832	3.4765	3.4765	0.000	-0.028274	-0.028274	0.000
4.0082	3.4441	3.4440	0.003	-0.028102	-0.028102	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
4.0332	3.4134	3.4134	0.000	-0.027904	-0.027904	0.000
4.0582	3.3850	3.3850	0.000	-0.027684	-0.027684	0.000
4.0832	3.3586	3.3586	0.000	-0.027450	-0.027450	0.000
4.1082	3.3333	3.3333	0.000	-0.027212	-0.027212	0.000
4.1332	3.3079	3.3079	0.000	-0.026990	-0.026990	0.000
4.1582	3.2809	3.2809	0.000	-0.026810	-0.026810	0.000
4.1832	3.2503	3.2503	0.000	-0.026715	-0.026716	0.004
4.2082	3.2132	3.2132	0.000	-0.026785	-0.026785	0.000
4.2332	3.1637	3.1637	0.000	-0.027194	-0.027194	0.000
4.2582	3.0815	3.0815	0.000	-0.028473	-0.028473	0.000
4.2832	2.8844	2.8843	0.003	-0.028314	-0.028314	0.000
4.3082	2.5595	2.5595	0.000	-0.026754	-0.026754	0.000
4.3332	2.2392	2.2392	0.000	-0.024955	-0.024955	0.000
4.3582	1.9311	1.9311	0.000	-0.023047	-0.023047	0.000
4.3832	1.6354	1.6353	0.006	-0.021078	-0.021078	0.000
4.4082	1.3518	1.3517	0.007	-0.019079	-0.019079	0.000
4.4332	1.0802	1.0802	0.000	-0.017079	-0.017079	0.000
4.4582	0.8313	0.8312	0.002	-0.015103	-0.015103	0.000
4.4832	0.6282	0.6282	0.002	-0.013175	-0.013175	0.000
4.5082	0.4835	0.4835	0.002	-0.011312	-0.011312	0.000
4.5332	0.4007	0.4007	0.002	-0.009524	-0.009524	0.001
4.5582	0.3756	0.3756	0.003	-0.007815	-0.007815	0.001
4.5832	0.3981	0.3981	0.003	-0.006181	-0.006181	0.002
4.6082	0.4546	0.4546	0.002	-0.004611	-0.004610	0.002
4.6332	0.5305	0.5305	0.000	-0.003092	-0.003091	0.003
4.6582	0.6120	0.6120	0.002	-0.001610	-0.001610	0.000
4.6832	0.6879	0.6879	0.001	-0.000153	-0.000153	0.000
4.7082	0.7504	0.7504	0.001	0.001288	0.001288	0.008
4.7332	0.7949	0.7949	0.001	0.002720	0.002720	0.004
4.7582	0.8202	0.8202	0.000	0.004144	0.004144	0.002
4.7832	0.8279	0.8279	0.001	0.005555	0.005555	0.000
4.8082	0.8212	0.8212	0.001	0.006944	0.006944	0.000
4.8332	0.8047	0.8047	0.001	0.008302	0.008302	0.000
4.8582	0.7833	0.7833	0.000	0.009614	0.009614	0.001
4.8831	0.7616	0.7616	0.001	0.010868	0.010868	0.000
4.91	0.7433	0.7433	0.001	0.012053	0.012053	0.000
4.93	0.7314	0.7314	0.001	0.013161	0.013161	0.000
4.9581	0.7275	0.7275	0.001	0.014187	0.014187	0.000
4.9831	0.7322	0.7322	0.001	0.015131	0.015131	0.000
5.0081	0.7450	0.7450	0.001	0.015995	0.015996	0.006
5.0331	0.7647	0.7647	0.001	0.016786	0.016786	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI:Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
5.0581	0.7898	0.7898	0.001	0.017508	0.017508	0.000
5.0831	0.8185	0.8185	0.001	0.018172	0.018172	0.000
5.1081	0.8489	0.8489	0.001	0.018783	0.018783	0.000
5.1331	0.8795	0.8795	0.001	0.019348	0.019348	0.000
5.1581	0.9092	0.9092	0.001	0.019870	0.019870	0.000
5.1831	0.9369	0.9369	0.001	0.020351	0.020351	0.000
5.2081	0.9624	0.9624	0.000	0.020790	0.020790	0.000
5.2331	0.9854	0.9854	0.001	0.021185	0.021185	0.000
5.2581	1.0061	1.0061	0.000	0.021531	0.021531	0.000
5.2831	1.0250	1.0250	0.000	0.021823	0.021823	0.000
5.3081	1.0425	1.0424	0.010	0.022059	0.022059	0.000
5.3331	1.0591	1.0591	0.000	0.022233	0.022233	0.000
5.3581	1.0754	1.0754	0.000	0.022345	0.022345	0.000
5.3831	1.0919	1.0919	0.000	0.022393	0.022393	0.000
5.4081	1.1088	1.1088	0.000	0.022380	0.022380	0.000
5.4331	1.1264	1.1264	0.000	0.022307	0.022307	0.000
5.4581	1.1447	1.1447	0.000	0.022180	0.022180	0.000
5.4831	1.1638	1.1638	0.000	0.022003	0.022003	0.000
5.5081	1.1834	1.1834	0.000	0.021781	0.021781	0.000
5.5331	1.2035	1.2035	0.000	0.021520	0.021520	0.000
5.5581	1.2237	1.2236	0.008	0.021223	0.021223	0.000
5.5831	1.2437	1.2437	0.000	0.020895	0.020895	0.000
5.6081	1.2635	1.2635	0.000	0.020537	0.020537	0.000
5.6331	1.2827	1.2826	0.008	0.020150	0.020150	0.000
5.6581	1.3011	1.3011	0.000	0.019735	0.019735	0.000
5.6831	1.3187	1.3187	0.000	0.019291	0.019291	0.000
5.7081	1.3354	1.3354	0.000	0.018818	0.018818	0.000
5.7331	1.3511	1.3511	0.000	0.018316	0.018316	0.000
5.7581	1.3660	1.3660	0.000	0.017783	0.017783	0.000
5.7831	1.3800	1.3800	0.000	0.017220	0.017220	0.000
5.8081	1.3933	1.3933	0.000	0.016629	0.016629	0.000
5.8331	1.4060	1.4060	0.000	0.016012	0.016012	0.000
5.8581	1.4181	1.4181	0.000	0.015371	0.015371	0.000
5.8831	1.4299	1.4299	0.000	0.014710	0.014710	0.000
5.9081	1.4413	1.4413	0.000	0.014031	0.014031	0.000
5.9331	1.4524	1.4524	0.000	0.013340	0.013340	0.000
5.9581	1.4632	1.4632	0.000	0.012638	0.012638	0.000
5.9831	1.4737	1.4737	0.000	0.011929	0.011929	0.000
6.0081	1.4839	1.4839	0.000	0.011216	0.011216	0.000
6.0331	1.4937	1.4937	0.000	0.010501	0.010501	0.000
6.0581	1.5031	1.5031	0.000	0.009785	0.009785	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
6.0831	1.5120	1.5120	0.000	0.009069	0.009069	0.001
6.1081	1.5204	1.5204	0.000	0.008353	0.008353	0.001
6.1331	1.5283	1.5282	0.007	0.007639	0.007639	0.001
6.1581	1.5355	1.5355	0.000	0.006926	0.006926	0.000
6.1831	1.5421	1.5421	0.000	0.006215	0.006215	0.000
6.2081	1.5481	1.5481	0.000	0.005507	0.005507	0.000
6.2331	1.5535	1.5535	0.000	0.004803	0.004803	0.000
6.2581	1.5584	1.5584	0.000	0.004103	0.004103	0.000
6.2831	1.5629	1.5629	0.000	0.003411	0.003411	0.000
6.3081	1.5668	1.5668	0.000	0.002728	0.002728	0.000
6.3331	1.5704	1.5704	0.000	0.002056	0.002056	0.005
6.3581	1.5736	1.5736	0.000	0.001397	0.001397	0.000
6.3831	1.5765	1.5765	0.000	0.000753	0.000753	0.004
6.4081	1.5791	1.5791	0.000	0.000126	0.000126	0.000
6.4331	1.5814	1.5814	0.000	-0.000483	-0.000483	0.006
6.4581	1.5833	1.5833	0.000	-0.001074	-0.001074	0.009
6.4831	1.5849	1.5849	0.000	-0.001645	-0.001645	0.000
6.5081	1.5862	1.5862	0.000	-0.002196	-0.002196	0.000
6.5331	1.5872	1.5872	0.000	-0.002727	-0.002727	0.004
6.5581	1.5878	1.5878	0.000	-0.003237	-0.003237	0.000
6.5831	1.5880	1.5880	0.000	-0.003727	-0.003727	0.000
6.6081	1.5878	1.5878	0.000	-0.004197	-0.004197	0.000
6.6331	1.5873	1.5873	0.000	-0.004646	-0.004646	0.000
6.6581	1.5865	1.5865	0.000	-0.005074	-0.005074	0.000
6.6831	1.5853	1.5853	0.000	-0.005481	-0.005481	0.000
6.7081	1.5839	1.5839	0.000	-0.005867	-0.005867	0.000
6.7331	1.5822	1.5822	0.000	-0.006231	-0.006231	0.000
6.7581	1.5802	1.5802	0.000	-0.006572	-0.006572	0.000
6.7831	1.5780	1.5780	0.000	-0.006890	-0.006890	0.000
6.8081	1.5757	1.5757	0.000	-0.007184	-0.007184	0.000
6.8331	1.5731	1.5731	0.000	-0.007453	-0.007453	0.000
6.8581	1.5704	1.5703	0.006	-0.007699	-0.007699	0.000
6.8831	1.5675	1.5674	0.006	-0.007920	-0.007920	0.000
6.9081	1.5644	1.5644	0.000	-0.008117	-0.008117	0.000
6.9331	1.5612	1.5612	0.000	-0.008291	-0.008291	0.000
6.9581	1.5578	1.5578	0.000	-0.008441	-0.008441	0.000
6.9831	1.5543	1.5543	0.000	-0.008569	-0.008569	0.000
7.0081	1.5506	1.5506	0.000	-0.008674	-0.008674	0.001
7.0331	1.5468	1.5468	0.000	-0.008758	-0.008758	0.000
7.0581	1.5428	1.5428	0.000	-0.008821	-0.008821	0.000
7.0831	1.5388	1.5388	0.000	-0.008864	-0.008864	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
7.1081	1.5346	1.5346	0.000	-0.008886	-0.008886	0.000
7.1331	1.5303	1.5303	0.000	-0.008889	-0.008889	0.000
7.1581	1.5260	1.5260	0.000	-0.008872	-0.008872	0.000
7.1831	1.5216	1.5216	0.000	-0.008837	-0.008837	0.000
7.2081	1.5172	1.5171	0.007	-0.008782	-0.008782	0.000
7.2331	1.5127	1.5127	0.000	-0.008710	-0.008710	0.000
7.2581	1.5082	1.5082	0.000	-0.008621	-0.008621	0.000
7.2831	1.5038	1.5037	0.007	-0.008514	-0.008514	0.000
7.3081	1.4993	1.4993	0.000	-0.008391	-0.008391	0.000
7.3331	1.4948	1.4948	0.000	-0.008252	-0.008252	0.000
7.3581	1.4904	1.4904	0.000	-0.008098	-0.008098	0.000
7.3831	1.4860	1.4860	0.000	-0.007931	-0.007931	0.000
7.4081	1.4816	1.4816	0.000	-0.007750	-0.007750	0.001
7.4331	1.4773	1.4773	0.000	-0.007557	-0.007557	0.000
7.4581	1.4730	1.4730	0.000	-0.007352	-0.007352	0.001
7.4831	1.4687	1.4687	0.000	-0.007137	-0.007137	0.000
7.5081	1.4645	1.4645	0.000	-0.006912	-0.006912	0.000
7.5331	1.4604	1.4604	0.000	-0.006678	-0.006678	0.000
7.5581	1.4563	1.4563	0.000	-0.006436	-0.006436	0.000
7.5831	1.4523	1.4523	0.000	-0.006186	-0.006186	0.002
7.6081	1.4484	1.4484	0.000	-0.005928	-0.005928	0.000
7.6331	1.4446	1.4446	0.000	-0.005665	-0.005665	0.000
7.6581	1.4410	1.4410	0.000	-0.005396	-0.005396	0.000
7.6831	1.4374	1.4374	0.000	-0.005122	-0.005122	0.000
7.7081	1.4340	1.4340	0.000	-0.004843	-0.004843	0.000
7.7331	1.4307	1.4307	0.000	-0.004561	-0.004561	0.000
7.7581	1.4275	1.4275	0.000	-0.004276	-0.004276	0.000
7.7831	1.4245	1.4245	0.000	-0.003989	-0.003989	0.000
7.8081	1.4215	1.4215	0.000	-0.003700	-0.003700	0.000
7.8331	1.4187	1.4187	0.000	-0.003410	-0.003410	0.000
7.8581	1.4161	1.4161	0.000	-0.003120	-0.003120	0.000
7.8831	1.4135	1.4135	0.000	-0.002831	-0.002831	0.000
7.9081	1.4112	1.4112	0.000	-0.002544	-0.002544	0.000
7.9331	1.4089	1.4089	0.000	-0.002259	-0.002259	0.000
7.9581	1.4068	1.4068	0.000	-0.001977	-0.001977	0.000
7.9831	1.4048	1.4048	0.000	-0.001697	-0.001697	0.000
8.0081	1.4030	1.4030	0.000	-0.001422	-0.001422	0.000
8.0331	1.4014	1.4014	0.000	-0.001150	-0.001150	0.000
8.0581	1.3998	1.3998	0.000	-0.000884	-0.000884	0.001
8.0831	1.3985	1.3984	0.007	-0.000622	-0.000622	0.000
8.1081	1.3972	1.3972	0.000	-0.000366	-0.000366	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
8.1331	1.3962	1.3961	0.007	-0.000116	-0.000116	0.009
8.1581	1.3952	1.3952	0.000	0.000128	0.000128	0.008
8.1831	1.3944	1.3944	0.000	0.000366	0.000366	0.000
8.2081	1.3938	1.3938	0.000	0.000597	0.000597	0.000
8.2331	1.3932	1.3932	0.000	0.000820	0.000820	0.000
8.2581	1.3928	1.3928	0.000	0.001035	0.001035	0.000
8.2831	1.3926	1.3926	0.000	0.001243	0.001243	0.000
8.3081	1.3925	1.3924	0.007	0.001442	0.001442	0.000
8.3331	1.3924	1.3924	0.000	0.001633	0.001633	0.000
8.3581	1.3926	1.3925	0.007	0.001815	0.001815	0.000
8.3831	1.3928	1.3928	0.000	0.001988	0.001988	0.000
8.4081	1.3931	1.3931	0.000	0.002152	0.002152	0.000
8.4331	1.3936	1.3936	0.000	0.002307	0.002307	0.000
8.4581	1.3941	1.3941	0.000	0.002453	0.002453	0.000
8.4831	1.3948	1.3948	0.000	0.002589	0.002589	0.000
8.5081	1.3955	1.3955	0.000	0.002716	0.002716	0.000
8.5331	1.3964	1.3964	0.000	0.002834	0.002834	0.000
8.5581	1.3973	1.3973	0.000	0.002943	0.002943	0.000
8.5831	1.3983	1.3983	0.000	0.003042	0.003042	0.000
8.6081	1.3994	1.3994	0.000	0.003132	0.003132	0.000
8.6331	1.4006	1.4006	0.000	0.003213	0.003213	0.000
8.6581	1.4018	1.4018	0.000	0.003285	0.003285	0.000
8.6831	1.4032	1.4031	0.007	0.003347	0.003347	0.000
8.7081	1.4045	1.4045	0.000	0.003401	0.003401	0.000
8.7331	1.4059	1.4059	0.000	0.003445	0.003445	0.000
8.7581	1.4074	1.4074	0.000	0.003481	0.003481	0.000
8.7831	1.4089	1.4089	0.000	0.003508	0.003508	0.000
8.8081	1.4105	1.4104	0.007	0.003527	0.003527	0.000
8.8331	1.4120	1.4120	0.000	0.003537	0.003537	0.000
8.8581	1.4137	1.4136	0.007	0.003539	0.003539	0.000
8.8831	1.4153	1.4153	0.000	0.003534	0.003534	0.000
8.9081	1.4170	1.4170	0.000	0.003521	0.003521	0.000
8.9331	1.4186	1.4186	0.000	0.003500	0.003500	0.000
8.9581	1.4203	1.4203	0.000	0.003472	0.003472	0.000
8.9831	1.4221	1.4221	0.000	0.003437	0.003437	0.000
9.0081	1.4238	1.4238	0.000	0.003396	0.003396	0.003
9.0331	1.4255	1.4255	0.000	0.003348	0.003348	0.000
9.0581	1.4272	1.4272	0.000	0.003295	0.003295	0.000
9.0831	1.4289	1.4289	0.000	0.003235	0.003235	0.000
9.1081	1.4306	1.4306	0.000	0.003170	0.003170	0.000
9.1331	1.4323	1.4323	0.000	0.003099	0.003099	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
9.1581	1.4340	1.4340	0.000	0.003024	0.003024	0.000
9.1831	1.4356	1.4356	0.000	0.002944	0.002944	0.000
9.2081	1.4373	1.4373	0.000	0.002859	0.002859	0.000
9.2331	1.4389	1.4389	0.000	0.002771	0.002771	0.000
9.2581	1.4404	1.4404	0.000	0.002678	0.002678	0.000
9.2831	1.4420	1.4420	0.000	0.002582	0.002582	0.000
9.3081	1.4435	1.4435	0.000	0.002483	0.002483	0.000
9.3331	1.4450	1.4449	0.007	0.002382	0.002382	0.000
9.3581	1.4464	1.4464	0.000	0.002277	0.002277	0.000
9.3831	1.4478	1.4478	0.000	0.002171	0.002171	0.000
9.4081	1.4491	1.4491	0.000	0.002062	0.002062	0.000
9.4331	1.4504	1.4504	0.000	0.001952	0.001952	0.000
9.4581	1.4517	1.4517	0.000	0.001840	0.001840	0.000
9.4831	1.4529	1.4529	0.000	0.001727	0.001727	0.006
9.5081	1.4541	1.4541	0.000	0.001614	0.001614	0.000
9.5331	1.4552	1.4552	0.000	0.001499	0.001499	0.000
9.5581	1.4563	1.4563	0.000	0.001385	0.001385	0.000
9.5831	1.4573	1.4573	0.000	0.001271	0.001271	0.000
9.6081	1.4582	1.4582	0.000	0.001156	0.001156	0.000
9.6331	1.4592	1.4591	0.007	0.001043	0.001042	0.010
9.6581	1.4600	1.4600	0.000	0.000929	0.000929	0.000
9.6831	1.4608	1.4608	0.000	0.000817	0.000817	0.001
9.7081	1.4615	1.4615	0.000	0.000706	0.000706	0.000
9.7331	1.4622	1.4622	0.000	0.000597	0.000597	0.000
9.7581	1.4629	1.4629	0.000	0.000489	0.000489	0.000
9.7831	1.4634	1.4634	0.000	0.000383	0.000383	0.000
9.8081	1.4640	1.4640	0.000	0.000279	0.000279	0.004
9.8331	1.4644	1.4644	0.000	0.000176	0.000176	0.000
9.8581	1.4648	1.4648	0.000	0.000077	0.000077	0.005
9.8831	1.4652	1.4652	0.000	-0.000021	-0.000021	0.010
9.9081	1.4655	1.4655	0.000	-0.000116	-0.000116	0.000
9.9331	1.4658	1.4658	0.000	-0.000208	-0.000208	0.000
9.9581	1.4660	1.4660	0.000	-0.000297	-0.000297	0.000
9.9831	1.4662	1.4662	0.000	-0.000383	-0.000383	0.000
10.0081	1.4663	1.4663	0.000	-0.000466	-0.000466	0.000
10.0331	1.4664	1.4664	0.000	-0.000546	-0.000546	0.000
10.0581	1.4664	1.4664	0.000	-0.000623	-0.000623	0.002
10.0831	1.4664	1.4664	0.000	-0.000696	-0.000696	0.000
10.1081	1.4663	1.4663	0.000	-0.000766	-0.000765	0.001
10.1331	1.4662	1.4662	0.000	-0.000832	-0.000832	0.001
10.1581	1.4660	1.4660	0.000	-0.000894	-0.000894	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
10.1831	1.4658	1.4658	0.000	-0.000953	-0.000953	0.002
10.2081	1.4655	1.4655	0.000	-0.001008	-0.001008	0.000
10.2331	1.4653	1.4652	0.007	-0.001060	-0.001060	0.009
10.2581	1.4649	1.4649	0.000	-0.001108	-0.001108	0.000
10.2831	1.4646	1.4646	0.000	-0.001152	-0.001152	0.000
10.3081	1.4642	1.4642	0.000	-0.001192	-0.001192	0.000
10.3331	1.4638	1.4638	0.000	-0.001229	-0.001229	0.000
10.3581	1.4633	1.4633	0.000	-0.001262	-0.001262	0.000
10.3831	1.4629	1.4628	0.007	-0.001292	-0.001292	0.000
10.4081	1.4624	1.4624	0.000	-0.001318	-0.001318	0.000
10.4331	1.4618	1.4618	0.000	-0.001340	-0.001340	0.000
10.4581	1.4613	1.4613	0.000	-0.001358	-0.001358	0.000
10.4831	1.4608	1.4607	0.007	-0.001374	-0.001374	0.000
10.5081	1.4602	1.4602	0.000	-0.001386	-0.001386	0.000
10.5331	1.4596	1.4596	0.000	-0.001394	-0.001394	0.000
10.5581	1.4590	1.4590	0.000	-0.001399	-0.001399	0.000
10.5831	1.4583	1.4583	0.000	-0.001401	-0.001401	0.000
10.6081	1.4577	1.4577	0.000	-0.001400	-0.001400	0.000
10.6331	1.4571	1.4570	0.007	-0.001395	-0.001395	0.007
10.6581	1.4564	1.4564	0.000	-0.001388	-0.001388	0.000
10.6831	1.4557	1.4557	0.000	-0.001378	-0.001378	0.000
10.7081	1.4551	1.4551	0.000	-0.001365	-0.001365	0.000
10.7331	1.4544	1.4544	0.000	-0.001350	-0.001350	0.000
10.7581	1.4537	1.4537	0.000	-0.001332	-0.001332	0.000
10.7831	1.4530	1.4530	0.000	-0.001311	-0.001311	0.000
10.8081	1.4524	1.4524	0.000	-0.001288	-0.001288	0.000
10.8331	1.4517	1.4517	0.000	-0.001263	-0.001263	0.000
10.8581	1.4510	1.4510	0.000	-0.001236	-0.001236	0.000
10.8831	1.4504	1.4504	0.000	-0.001206	-0.001206	0.000
10.9081	1.4497	1.4497	0.000	-0.001175	-0.001175	0.000
10.9331	1.4491	1.4491	0.000	-0.001142	-0.001142	0.000
10.9581	1.4484	1.4484	0.000	-0.001108	-0.001108	0.000
10.9831	1.4478	1.4478	0.000	-0.001072	-0.001072	0.000
11.0081	1.4472	1.4472	0.000	-0.001034	-0.001034	0.000
11.0331	1.4466	1.4466	0.000	-0.000995	-0.000995	0.000
11.0581	1.4460	1.4460	0.000	-0.000955	-0.000955	0.000
11.0831	1.4454	1.4454	0.000	-0.000914	-0.000914	0.000
11.1081	1.4449	1.4449	0.000	-0.000872	-0.000872	0.001
11.1331	1.4443	1.4443	0.000	-0.000830	-0.000830	0.001
11.1581	1.4438	1.4438	0.000	-0.000786	-0.000786	0.001
11.1831	1.4433	1.4433	0.000	-0.000742	-0.000742	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
11.2081	1.4428	1.4428	0.000	-0.000698	-0.000698	0.000
11.2331	1.4423	1.4423	0.000	-0.000653	-0.000653	0.000
11.2581	1.4419	1.4419	0.000	-0.000608	-0.000608	0.002
11.2831	1.4414	1.4414	0.000	-0.000563	-0.000563	0.002
11.3081	1.4410	1.4410	0.000	-0.000518	-0.000518	0.002
11.3331	1.4407	1.4407	0.000	-0.000472	-0.000472	0.002
11.3581	1.4403	1.4403	0.000	-0.000427	-0.000427	0.002
11.383	1.4400	1.4400	0.000	-0.000383	-0.000383	0.005
11.408	1.4396	1.4396	0.000	-0.000338	-0.000338	0.006
11.433	1.4393	1.4393	0.000	-0.000294	-0.000294	0.007
11.458	1.4391	1.4390	0.007	-0.000251	-0.000251	0.004
11.483	1.4388	1.4388	0.000	-0.000208	-0.000208	0.000
11.508	1.4385	1.4385	0.000	-0.000166	-0.000166	0.000
11.533	1.4383	1.4383	0.000	-0.000124	-0.000124	0.000
11.558	1.4381	1.4381	0.000	-0.000083	-0.000083	0.000
11.583	1.4379	1.4379	0.000	-0.000043	-0.000043	0.000
11.608	1.4378	1.4378	0.000	-0.000004	-0.000004	0.000
11.633	1.4376	1.4376	0.000	0.000034	0.000034	0.000
11.658	1.4375	1.4375	0.000	0.000071	0.000071	0.000
11.683	1.4374	1.4374	0.000	0.000106	0.000106	0.000
11.708	1.4374	1.4374	0.000	0.000141	0.000141	0.007
11.733	1.4373	1.4373	0.000	0.000174	0.000174	0.006
11.758	1.4373	1.4373	0.000	0.000206	0.000206	0.005
11.783	1.4373	1.4373	0.000	0.000237	0.000237	0.004
11.808	1.4373	1.4373	0.000	0.000266	0.000266	0.000
11.833	1.4373	1.4373	0.000	0.000294	0.000295	0.003
11.858	1.4373	1.4373	0.000	0.000321	0.000321	0.000
11.883	1.4374	1.4374	0.000	0.000346	0.000346	0.003
11.908	1.4375	1.4375	0.000	0.000370	0.000370	0.003
11.933	1.4376	1.4375	0.007	0.000393	0.000393	0.003
11.958	1.4377	1.4377	0.000	0.000414	0.000414	0.000
11.983	1.4378	1.4378	0.000	0.000433	0.000433	0.000
12.008	1.4379	1.4379	0.000	0.000451	0.000451	0.000
12.033	1.4381	1.4380	0.007	0.000468	0.000468	0.000
12.058	1.4382	1.4382	0.000	0.000483	0.000483	0.002
12.083	1.4384	1.4384	0.000	0.000497	0.000497	0.000
12.108	1.4386	1.4386	0.000	0.000509	0.000509	0.000
12.133	1.4388	1.4387	0.007	0.000520	0.000520	0.002
12.158	1.4390	1.4390	0.000	0.000529	0.000529	0.000
12.183	1.4392	1.4392	0.000	0.000537	0.000537	0.002
12.208	1.4394	1.4394	0.000	0.000544	0.000544	0.002

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
12.233	1.4396	1.4396	0.000	0.000549	0.000549	0.002
12.258	1.4399	1.4399	0.000	0.000553	0.000553	0.004
12.283	1.4401	1.4401	0.000	0.000556	0.000556	0.002
12.308	1.4403	1.4403	0.000	0.000557	0.000557	0.002
12.333	1.4406	1.4406	0.000	0.000557	0.000557	0.002
12.358	1.4409	1.4408	0.007	0.000556	0.000556	0.002
12.383	1.4411	1.4411	0.000	0.000553	0.000553	0.002
12.408	1.4414	1.4414	0.000	0.000550	0.000550	0.002
12.433	1.4416	1.4416	0.000	0.000545	0.000545	0.002
12.458	1.4419	1.4419	0.000	0.000539	0.000539	0.004
12.483	1.4422	1.4422	0.000	0.000532	0.000532	0.002
12.508	1.4424	1.4424	0.000	0.000524	0.000524	0.002
12.533	1.4427	1.4427	0.000	0.000515	0.000515	0.002
12.558	1.4430	1.4430	0.000	0.000506	0.000506	0.002
12.583	1.4432	1.4432	0.000	0.000495	0.000495	0.000
12.608	1.4435	1.4435	0.000	0.000484	0.000484	0.002
12.633	1.4438	1.4437	0.007	0.000471	0.000471	0.000
12.658	1.4440	1.4440	0.000	0.000459	0.000458	0.002
12.683	1.4443	1.4443	0.000	0.000445	0.000445	0.000
12.708	1.4445	1.4445	0.000	0.000431	0.000431	0.002
12.733	1.4448	1.4448	0.000	0.000416	0.000416	0.002
12.758	1.4450	1.4450	0.000	0.000401	0.000400	0.005
12.783	1.4453	1.4452	0.007	0.000385	0.000385	0.003
12.808	1.4455	1.4455	0.000	0.000369	0.000369	0.003
12.833	1.4457	1.4457	0.000	0.000352	0.000352	0.003
12.858	1.4459	1.4459	0.000	0.000335	0.000335	0.006
12.883	1.4461	1.4461	0.000	0.000318	0.000318	0.006
12.908	1.4464	1.4463	0.007	0.000301	0.000301	0.007
12.933	1.4466	1.4465	0.007	0.000283	0.000283	0.007
12.958	1.4467	1.4467	0.000	0.000265	0.000265	0.008
12.983	1.4469	1.4469	0.000	0.000247	0.000247	0.004
13.008	1.4471	1.4471	0.000	0.000229	0.000229	0.004
13.033	1.4473	1.4473	0.000	0.000211	0.000211	0.009
13.058	1.4474	1.4474	0.000	0.000193	0.000193	0.005
13.083	1.4476	1.4476	0.000	0.000175	0.000175	0.006
13.108	1.4477	1.4477	0.000	0.000157	0.000157	0.006
13.133	1.4479	1.4479	0.000	0.000139	0.000139	0.007
13.158	1.4480	1.4480	0.000	0.000122	0.000122	0.008
13.183	1.4481	1.4481	0.000	0.000104	0.000104	0.000
13.208	1.4482	1.4482	0.000	0.000087	0.000087	0.005
13.233	1.4483	1.4483	0.000	0.000070	0.000070	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI PUM)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
13.258	1.4484	1.4484	0.000	0.000053	0.000053	0.000
13.283	1.4485	1.4485	0.000	0.000037	0.000037	0.000
13.308	1.4485	1.4485	0.000	0.000021	0.000021	0.000
13.333	1.4486	1.4486	0.000	0.000005	0.000005	0.000
13.358	1.4487	1.4487	0.000	-0.000010	-0.000010	0.000
13.383	1.4487	1.4487	0.000	-0.000025	-0.000025	0.004
13.408	1.4488	1.4488	0.000	-0.000039	-0.000039	0.003
13.433	1.4488	1.4488	0.000	-0.000053	-0.000053	0.000
13.458	1.4488	1.4488	0.000	-0.000067	-0.000067	0.009
13.483	1.4488	1.4488	0.000	-0.000080	-0.000080	0.005
13.508	1.4488	1.4488	0.000	-0.000092	-0.000092	0.007
13.533	1.4488	1.4488	0.000	-0.000104	-0.000104	0.000
13.558	1.4488	1.4488	0.000	-0.000116	-0.000116	0.009
13.583	1.4488	1.4488	0.000	-0.000126	-0.000126	0.008
13.608	1.4488	1.4488	0.000	-0.000137	-0.000137	0.000
13.633	1.4488	1.4488	0.000	-0.000147	-0.000147	0.000
13.658	1.4487	1.4487	0.000	-0.000156	-0.000156	0.006
13.683	1.4487	1.4487	0.000	-0.000164	-0.000164	0.000
13.708	1.4487	1.4486	0.007	-0.000172	-0.000172	0.000
13.733	1.4486	1.4486	0.000	-0.000180	-0.000180	0.000
13.758	1.4485	1.4485	0.000	-0.000186	-0.000186	0.000
13.783	1.4485	1.4485	0.000	-0.000193	-0.000193	0.005
13.808	1.4484	1.4484	0.000	-0.000198	-0.000198	0.000
13.833	1.4484	1.4483	0.007	-0.000203	-0.000203	0.000
13.858	1.4483	1.4483	0.000	-0.000208	-0.000208	0.005
13.883	1.4482	1.4482	0.000	-0.000211	-0.000211	0.005
13.908	1.4481	1.4481	0.000	-0.000215	-0.000215	0.005
13.933	1.4480	1.4480	0.000	-0.000218	-0.000217	0.005
13.958	1.4479	1.4479	0.000	-0.000220	-0.000220	0.005
13.983	1.4478	1.4478	0.000	-0.000221	-0.000221	0.005
14.008	1.4477	1.4477	0.000	-0.000222	-0.000222	0.004
14.033	1.4477	1.4476	0.007	-0.000223	-0.000223	0.004
14.058	1.4476	1.4475	0.007	-0.000223	-0.000223	0.004
14.083	1.4475	1.4474	0.007	-0.000223	-0.000223	0.004
14.108	1.4473	1.4473	0.000	-0.000222	-0.000222	0.009
14.133	1.4472	1.4472	0.000	-0.000220	-0.000220	0.009
14.158	1.4471	1.4471	0.000	-0.000218	-0.000218	0.005
14.183	1.4470	1.4470	0.000	-0.000216	-0.000216	0.005
14.208	1.4469	1.4469	0.000	-0.000213	-0.000213	0.005
14.233	1.4468	1.4468	0.000	-0.000210	-0.000210	0.005
14.258	1.4467	1.4467	0.000	-0.000207	-0.000207	0.005

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
14.283	1.4466	1.4466	0.000	-0.000203	-0.000203	0.005
14.308	1.4465	1.4465	0.000	-0.000199	-0.000199	0.005
14.333	1.4464	1.4464	0.000	-0.000194	-0.000194	0.005
14.358	1.4463	1.4463	0.000	-0.000189	-0.000189	0.000
14.383	1.4462	1.4462	0.000	-0.000184	-0.000184	0.005
14.408	1.4461	1.4461	0.000	-0.000179	-0.000179	0.006
14.433	1.4460	1.4460	0.000	-0.000173	-0.000173	0.000
14.458	1.4459	1.4459	0.000	-0.000167	-0.000167	0.000
14.483	1.4458	1.4458	0.000	-0.000161	-0.000161	0.000
14.508	1.4457	1.4457	0.000	-0.000155	-0.000155	0.000
14.533	1.4456	1.4456	0.000	-0.000148	-0.000148	0.007
14.558	1.4455	1.4455	0.000	-0.000142	-0.000142	0.007
14.583	1.4454	1.4454	0.000	-0.000135	-0.000135	0.000
14.608	1.4453	1.4453	0.000	-0.000128	-0.000128	0.008
14.633	1.4452	1.4452	0.000	-0.000121	-0.000121	0.008
14.658	1.4451	1.4451	0.000	-0.000114	-0.000114	0.009
14.683	1.4451	1.4451	0.000	-0.000107	-0.000107	0.009
14.708	1.4450	1.4450	0.000	-0.000100	-0.000100	0.000
14.733	1.4449	1.4449	0.000	-0.000092	-0.000092	0.000
14.758	1.4449	1.4448	0.007	-0.000085	-0.000085	0.000
14.783	1.4448	1.4448	0.000	-0.000078	-0.000078	0.000
14.808	1.4447	1.4447	0.000	-0.000070	-0.000070	0.000
14.833	1.4447	1.4447	0.000	-0.000063	-0.000063	0.000
14.858	1.4446	1.4446	0.000	-0.000056	-0.000056	0.000
14.883	1.4446	1.4446	0.000	-0.000049	-0.000049	0.000
14.908	1.4445	1.4445	0.000	-0.000042	-0.000042	0.000
14.933	1.4445	1.4445	0.000	-0.000035	-0.000035	0.000
14.958	1.4444	1.4444	0.000	-0.000028	-0.000028	0.000
14.983	1.4444	1.4444	0.000	-0.000022	-0.000022	0.000
15.008	1.4444	1.4444	0.000	-0.000016	-0.000016	0.000
15.008	1.4444	1.4444	0.000	-0.000016	-0.000016	0.000
15.033	1.8285	1.8285	0.000	-0.002043	-0.002043	0.000
15.058	1.8664	1.8664	0.000	-0.003985	-0.003985	0.000
15.083	2.0858	2.0858	0.000	-0.005903	-0.005903	0.000
15.108	2.2896	2.2896	0.000	-0.007768	-0.007768	0.000
15.133	2.4800	2.4800	0.000	-0.009563	-0.009563	0.000
15.158	2.6586	2.6585	0.004	-0.011271	-0.011271	0.000
15.183	2.8266	2.8266	0.000	-0.012881	-0.012881	0.000
15.208	2.9853	2.9853	0.000	-0.014386	-0.014386	0.000
15.233	3.1355	3.1355	0.000	-0.015785	-0.015785	0.000
15.258	3.2778	3.2778	0.000	-0.017084	-0.017084	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
15.283	3.4131	3.4131	0.000	-0.018293	-0.018293	0.000
15.308	3.5419	3.5418	0.003	-0.019430	-0.019430	0.000
15.333	3.6646	3.6646	0.000	-0.020512	-0.020512	0.000
15.358	3.7817	3.7817	0.000	-0.021559	-0.021559	0.000
15.383	3.8937	3.8937	0.000	-0.022589	-0.022589	0.000
15.408	4.0009	4.0009	0.000	-0.023616	-0.023616	0.000
15.433	4.0919	4.0918	0.002	-0.024652	-0.024652	0.000
15.458	4.1514	4.1514	0.000	-0.025704	-0.025704	0.000
15.483	4.1731	4.1731	0.000	-0.026776	-0.026776	0.000
15.508	4.1579	4.1579	0.000	-0.027868	-0.027868	0.000
15.533	4.1122	4.1122	0.000	-0.028983	-0.028983	0.000
15.558	4.0456	4.0456	0.000	-0.030126	-0.030126	0.000
15.583	3.9683	3.9683	0.000	-0.031314	-0.031315	0.003
15.608	3.8878	3.8878	0.000	-0.032592	-0.032592	0.000
15.633	3.8056	3.8056	0.000	-0.034072	-0.034072	0.000
15.658	3.7057	3.7057	0.000	-0.036102	-0.036102	0.000
15.683	3.5029	3.5029	0.000	-0.036697	-0.036697	0.000
15.708	3.1660	3.1660	0.000	-0.035863	-0.035863	0.000
15.733	2.8084	2.8084	0.000	-0.034718	-0.034718	0.000
15.758	2.4669	2.4668	0.004	-0.033409	-0.033409	0.000
15.783	2.1389	2.1389	0.000	-0.032006	-0.032006	0.000
15.808	1.8254	1.8254	0.000	-0.030552	-0.030552	0.000
15.833	1.5483	1.5483	0.000	-0.029086	-0.029086	0.000
15.858	1.3298	1.3298	0.000	-0.027636	-0.027636	0.000
15.883	1.1806	1.1806	0.000	-0.026226	-0.026226	0.000
15.908	1.1010	1.1010	0.000	-0.024868	-0.024868	0.000
15.933	1.0826	1.0826	0.000	-0.023565	-0.023565	0.000
15.958	1.1113	1.1113	0.000	-0.022312	-0.022312	0.000
15.983	1.1699	1.1699	0.000	-0.021095	-0.021095	0.000
16.008	1.2416	1.2416	0.000	-0.019898	-0.019898	0.000
16.033	1.3113	1.3113	0.000	-0.018701	-0.018701	0.000
16.058	1.3679	1.3679	0.000	-0.017486	-0.017486	0.000
16.083	1.4043	1.4043	0.000	-0.016240	-0.016240	0.000
16.108	1.4179	1.4179	0.000	-0.014952	-0.014952	0.000
16.133	1.4093	1.4093	0.000	-0.013621	-0.013621	0.000
16.158	1.3823	1.3823	0.000	-0.012252	-0.012252	0.000
16.183	1.3421	1.3421	0.000	-0.010856	-0.010856	0.000
16.208	1.2948	1.2948	0.000	-0.009449	-0.009449	0.000
16.233	1.2462	1.2462	0.000	-0.008048	-0.008048	0.000
16.258	1.2014	1.2014	0.000	-0.006671	-0.006671	0.001
16.283	1.1640	1.1640	0.000	-0.005333	-0.005333	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
16.308	1.1364	1.1364	0.000	-0.004045	-0.004045	0.000
16.333	1.1193	1.1193	0.000	-0.002816	-0.002816	0.000
16.358	1.1123	1.1123	0.000	-0.001647	-0.001647	0.000
16.383	1.1139	1.1138	0.009	-0.000536	-0.000536	0.004
16.408	1.1221	1.1220	0.009	0.000522	0.000522	0.004
16.433	1.1346	1.1346	0.000	0.001535	0.001535	0.000
16.458	1.1494	1.1494	0.000	0.002513	0.002513	0.004
16.483	1.1646	1.1646	0.000	0.003463	0.003463	0.000
16.508	1.1787	1.1787	0.000	0.004394	0.004394	0.000
16.533	1.1910	1.1910	0.000	0.005309	0.005309	0.000
16.558	1.2010	1.2009	0.008	0.006208	0.006208	0.000
16.583	1.2087	1.2087	0.000	0.007089	0.007089	0.000
16.608	1.2146	1.2146	0.000	0.007948	0.007948	0.000
16.633	1.2192	1.2192	0.000	0.008777	0.008777	0.000
16.658	1.2232	1.2232	0.000	0.009570	0.009570	0.000
16.683	1.2272	1.2272	0.000	0.010318	0.010318	0.000
16.708	1.2318	1.2318	0.000	0.011015	0.011015	0.000
16.733	1.2374	1.2374	0.000	0.011658	0.011658	0.000
16.758	1.2444	1.2444	0.000	0.012242	0.012242	0.000
16.783	1.2528	1.2528	0.000	0.012768	0.012768	0.000
16.808	1.2627	1.2627	0.000	0.013239	0.013239	0.000
16.833	1.2739	1.2739	0.000	0.013657	0.013657	0.000
16.858	1.2863	1.2863	0.000	0.014028	0.014028	0.000
16.883	1.2996	1.2996	0.000	0.014357	0.014357	0.000
16.908	1.3135	1.3135	0.000	0.014648	0.014648	0.000
16.933	1.3278	1.3278	0.000	0.014907	0.014907	0.000
16.958	1.3421	1.3421	0.000	0.015135	0.015135	0.000
16.983	1.3563	1.3563	0.000	0.015334	0.015334	0.000
17.008	1.3702	1.3702	0.000	0.015504	0.015504	0.000
17.033	1.3837	1.3837	0.000	0.015644	0.015644	0.000
17.058	1.3967	1.3967	0.000	0.015751	0.015751	0.000
17.083	1.4093	1.4092	0.007	0.015824	0.015824	0.000
17.108	1.4213	1.4213	0.000	0.015860	0.015860	0.000
17.133	1.4329	1.4329	0.000	0.015857	0.015857	0.000
17.158	1.4443	1.4443	0.000	0.015814	0.015814	0.000
17.183	1.4554	1.4553	0.007	0.015731	0.015731	0.000
17.208	1.4663	1.4663	0.000	0.015610	0.015610	0.000
17.233	1.4772	1.4772	0.000	0.015452	0.015452	0.000
17.258	1.4881	1.4881	0.000	0.015260	0.015260	0.000
17.283	1.4991	1.4991	0.000	0.015039	0.015039	0.000
17.308	1.5101	1.5101	0.000	0.014790	0.014790	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
17.333	1.5211	1.5211	0.000	0.014519	0.014519	0.000
17.358	1.5320	1.5320	0.000	0.014226	0.014226	0.000
17.383	1.5429	1.5429	0.000	0.013916	0.013916	0.000
17.408	1.5536	1.5536	0.000	0.013590	0.013590	0.000
17.433	1.5640	1.5640	0.000	0.013247	0.013247	0.000
17.458	1.5740	1.5740	0.000	0.012890	0.012890	0.000
17.483	1.5836	1.5836	0.000	0.012517	0.012517	0.000
17.508	1.5928	1.5928	0.000	0.012129	0.012129	0.000
17.533	1.6015	1.6014	0.006	0.011725	0.011725	0.000
17.558	1.6096	1.6096	0.000	0.011306	0.011306	0.000
17.583	1.6174	1.6173	0.006	0.010871	0.010871	0.000
17.608	1.6247	1.6246	0.006	0.010421	0.010421	0.000
17.633	1.6316	1.6316	0.000	0.009959	0.009959	0.001
17.658	1.6382	1.6382	0.000	0.009486	0.009486	0.000
17.683	1.6445	1.6445	0.000	0.009003	0.009003	0.000
17.708	1.6506	1.6505	0.006	0.008513	0.008513	0.000
17.733	1.6564	1.6564	0.000	0.008019	0.008019	0.000
17.758	1.6621	1.6620	0.006	0.007522	0.007522	0.000
17.783	1.6675	1.6675	0.000	0.007024	0.007024	0.000
17.808	1.6727	1.6727	0.000	0.006528	0.006528	0.000
17.833	1.6777	1.6776	0.006	0.006034	0.006034	0.000
17.858	1.6823	1.6823	0.000	0.005543	0.005543	0.002
17.8829	1.6867	1.6867	0.000	0.005056	0.005056	0.000
17.9079	1.6907	1.6907	0.000	0.004572	0.004572	0.000
17.9329	1.6944	1.6944	0.000	0.004093	0.004093	0.000
17.9579	1.6977	1.6977	0.000	0.003618	0.003618	0.000
17.9829	1.7006	1.7006	0.000	0.003148	0.003148	0.000
18.0079	1.7032	1.7032	0.000	0.002683	0.002683	0.004
18.0329	1.7054	1.7054	0.000	0.002223	0.002223	0.000
18.0579	1.7073	1.7073	0.000	0.001770	0.001770	0.000
18.0829	1.7090	1.7090	0.000	0.001324	0.001324	0.000
18.1079	1.7103	1.7103	0.000	0.000887	0.000887	0.001
18.1329	1.7115	1.7115	0.000	0.000459	0.000460	0.002
18.1579	1.7124	1.7124	0.000	0.000044	0.000044	0.000
18.1829	1.7132	1.7132	0.000	-0.000360	-0.000360	0.003
18.2079	1.7138	1.7138	0.000	-0.000751	-0.000751	0.003
18.2329	1.7142	1.7142	0.000	-0.001127	-0.001127	0.000
18.2579	1.7144	1.7144	0.000	-0.001490	-0.001490	0.007
18.2829	1.7144	1.7144	0.000	-0.001837	-0.001837	0.005
18.3079	1.7143	1.7143	0.000	-0.002170	-0.002170	0.000
18.3329	1.7139	1.7139	0.000	-0.002489	-0.002489	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
18.3579	1.7133	1.7133	0.000	-0.002793	-0.002793	0.000
18.3829	1.7125	1.7125	0.000	-0.003083	-0.003083	0.000
18.4079	1.7114	1.7114	0.000	-0.003359	-0.003359	0.000
18.4329	1.7102	1.7101	0.006	-0.003621	-0.003621	0.000
18.4579	1.7087	1.7087	0.000	-0.003868	-0.003868	0.000
18.4829	1.7071	1.7071	0.000	-0.004102	-0.004102	0.000
18.5079	1.7053	1.7053	0.000	-0.004320	-0.004320	0.000
18.5329	1.7033	1.7033	0.000	-0.004524	-0.004523	0.002
18.5579	1.7013	1.7013	0.000	-0.004712	-0.004712	0.000
18.5829	1.6991	1.6991	0.000	-0.004884	-0.004884	0.002
18.6079	1.6969	1.6969	0.000	-0.005041	-0.005041	0.000
18.6329	1.6946	1.6946	0.000	-0.005183	-0.005183	0.000
18.6579	1.6922	1.6922	0.000	-0.005309	-0.005309	0.000
18.6829	1.6898	1.6898	0.000	-0.005419	-0.005419	0.002
18.7079	1.6873	1.6873	0.000	-0.005514	-0.005514	0.000
18.7329	1.6847	1.6847	0.000	-0.005594	-0.005594	0.002
18.7579	1.6820	1.6820	0.000	-0.005659	-0.005659	0.000
18.7829	1.6793	1.6793	0.000	-0.005709	-0.005709	0.000
18.8079	1.6764	1.6764	0.000	-0.005747	-0.005747	0.000
18.8329	1.6736	1.6736	0.000	-0.005771	-0.005771	0.000
18.8579	1.6706	1.6706	0.000	-0.005782	-0.005781	0.002
18.8829	1.6677	1.6677	0.000	-0.005780	-0.005780	0.000
18.9079	1.6646	1.6646	0.000	-0.005767	-0.005767	0.002
18.9329	1.6616	1.6616	0.000	-0.005742	-0.005742	0.002
18.9579	1.6585	1.6585	0.000	-0.005705	-0.005705	0.000
18.9829	1.6555	1.6555	0.000	-0.005657	-0.005657	0.002
19.0079	1.6524	1.6524	0.000	-0.005599	-0.005599	0.000
19.0329	1.6494	1.6494	0.000	-0.005530	-0.005530	0.000
19.0579	1.6464	1.6464	0.000	-0.005450	-0.005450	0.000
19.0829	1.6434	1.6434	0.000	-0.005362	-0.005362	0.000
19.1079	1.6404	1.6404	0.000	-0.005264	-0.005264	0.000
19.1329	1.6375	1.6375	0.000	-0.005158	-0.005158	0.000
19.1579	1.6346	1.6346	0.000	-0.005043	-0.005043	0.000
19.1829	1.6318	1.6318	0.000	-0.004920	-0.004920	0.000
19.2079	1.6290	1.6290	0.000	-0.004790	-0.004790	0.000
19.2329	1.6262	1.6262	0.000	-0.004654	-0.004654	0.000
19.2579	1.6235	1.6235	0.000	-0.004511	-0.004511	0.000
19.2829	1.6208	1.6208	0.000	-0.004363	-0.004363	0.000
19.3079	1.6183	1.6183	0.000	-0.004209	-0.004209	0.000
19.3329	1.6157	1.6157	0.000	-0.004051	-0.004051	0.000
19.3579	1.6133	1.6133	0.000	-0.003889	-0.003889	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
19.3829	1.6109	1.6109	0.000	-0.003723	-0.003723	0.000
19.4079	1.6086	1.6086	0.000	-0.003554	-0.003554	0.000
19.4329	1.6064	1.6064	0.000	-0.003381	-0.003381	0.000
19.4579	1.6043	1.6043	0.000	-0.003207	-0.003207	0.000
19.4829	1.6023	1.6023	0.000	-0.003030	-0.003030	0.000
19.5079	1.6003	1.6003	0.000	-0.002851	-0.002851	0.000
19.5329	1.5985	1.5985	0.000	-0.002671	-0.002671	0.000
19.5579	1.5967	1.5967	0.000	-0.002490	-0.002490	0.000
19.5829	1.5950	1.5950	0.000	-0.002308	-0.002308	0.000
19.6079	1.5934	1.5934	0.000	-0.002126	-0.002126	0.000
19.6329	1.5919	1.5919	0.000	-0.001945	-0.001945	0.000
19.6579	1.5905	1.5905	0.000	-0.001765	-0.001765	0.000
19.6829	1.5892	1.5892	0.000	-0.001586	-0.001586	0.000
19.7079	1.5880	1.5880	0.000	-0.001408	-0.001408	0.000
19.7329	1.5868	1.5868	0.000	-0.001233	-0.001233	0.000
19.7579	1.5858	1.5858	0.000	-0.001060	-0.001060	0.000
19.7829	1.5848	1.5848	0.000	-0.000890	-0.000890	0.001
19.8079	1.5840	1.5839	0.006	-0.000722	-0.000722	0.000
19.8329	1.5832	1.5832	0.000	-0.000558	-0.000558	0.002
19.8579	1.5825	1.5825	0.000	-0.000398	-0.000398	0.003
19.8829	1.5819	1.5819	0.000	-0.000241	-0.000241	0.000
19.9079	1.5814	1.5814	0.000	-0.000089	-0.000089	0.003
19.9329	1.5811	1.5810	0.006	0.000060	0.000060	0.007
19.9579	1.5807	1.5807	0.000	0.000204	0.000204	0.005
19.9829	1.5805	1.5805	0.000	0.000345	0.000345	0.003
20.0079	1.5804	1.5803	0.006	0.000480	0.000480	0.002
20.0079	1.5804	1.5803	0.006	0.000480	0.000480	0.002
20.0329	1.7676	1.7675	0.006	-0.001172	-0.001172	0.000
20.0579	2.0143	2.0143	0.000	-0.002773	-0.002773	0.000
20.0829	2.2421	2.2421	0.000	-0.004326	-0.004326	0.002
20.1079	2.4542	2.4542	0.000	-0.005830	-0.005830	0.000
20.1329	2.6529	2.6529	0.000	-0.007276	-0.007276	0.000
20.1579	2.8397	2.8397	0.000	-0.008655	-0.008655	0.001
20.1829	3.0159	3.0159	0.000	-0.009953	-0.009953	0.000
20.2079	3.1826	3.1826	0.000	-0.011166	-0.011166	0.000
20.2329	3.3405	3.3405	0.000	-0.012290	-0.012290	0.000
20.2579	3.4905	3.4905	0.000	-0.013329	-0.013329	0.000
20.2829	3.6331	3.6330	0.003	-0.014293	-0.014293	0.000
20.3079	3.7689	3.7688	0.003	-0.015194	-0.015194	0.000
20.3329	3.8984	3.8984	0.000	-0.016047	-0.016047	0.000
20.3579	4.0221	4.0221	0.000	-0.016866	-0.016866	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
20.3829	4.1404	4.1404	0.000	-0.017666	-0.017666	0.000
20.4079	4.2478	4.2478	0.000	-0.018457	-0.018457	0.000
20.4329	4.3248	4.3247	0.002	-0.019244	-0.019244	0.000
20.4579	4.3625	4.3625	0.000	-0.020030	-0.020030	0.000
20.4829	4.3605	4.3605	0.000	-0.020809	-0.020809	0.000
20.5079	4.3255	4.3255	0.000	-0.021576	-0.021576	0.000
20.5329	4.2689	4.2689	0.000	-0.022320	-0.022320	0.000
20.5579	4.2037	4.2037	0.000	-0.023029	-0.023029	0.000
20.5829	4.1416	4.1416	0.000	-0.023693	-0.023693	0.000
20.6079	4.0916	4.0916	0.000	-0.024302	-0.024302	0.000
20.6329	4.0581	4.0581	0.000	-0.024849	-0.024849	0.000
20.6579	4.0417	4.0417	0.000	-0.025332	-0.025332	0.000
20.6829	4.0390	4.0390	0.000	-0.025749	-0.025749	0.000
20.7079	4.0448	4.0448	0.000	-0.026104	-0.026104	0.000
20.7329	4.0531	4.0531	0.000	-0.026402	-0.026402	0.000
20.7579	4.0585	4.0585	0.000	-0.026650	-0.026650	0.000
20.7829	4.0571	4.0571	0.000	-0.026854	-0.026854	0.000
20.8079	4.0472	4.0472	0.000	-0.027019	-0.027019	0.000
20.8329	4.0289	4.0289	0.000	-0.027152	-0.027152	0.000
20.8579	4.0042	4.0042	0.000	-0.027253	-0.027253	0.000
20.8829	3.9756	3.9756	0.000	-0.027324	-0.027324	0.000
20.9079	3.9461	3.9461	0.000	-0.027362	-0.027362	0.000
20.9329	3.9183	3.9183	0.000	-0.027366	-0.027366	0.000
20.9579	3.8938	3.8938	0.000	-0.027330	-0.027330	0.000
20.9829	3.8734	3.8734	0.000	-0.027252	-0.027252	0.000
21.0079	3.8568	3.8568	0.000	-0.027126	-0.027126	0.000
21.0329	3.8431	3.8431	0.000	-0.026950	-0.026950	0.000
21.0579	3.8309	3.8309	0.000	-0.026724	-0.026724	0.000
21.0829	3.8190	3.8190	0.000	-0.026445	-0.026445	0.000
21.1079	3.8061	3.8061	0.000	-0.026118	-0.026118	0.000
21.1329	3.7915	3.7915	0.000	-0.025743	-0.025743	0.000
21.1579	3.7751	3.7751	0.000	-0.025326	-0.025326	0.000
21.1829	3.7569	3.7569	0.000	-0.024869	-0.024869	0.000
21.2079	3.7376	3.7375	0.003	-0.024379	-0.024379	0.000
21.2329	3.7176	3.7176	0.000	-0.023858	-0.023858	0.000
21.2579	3.6978	3.6978	0.000	-0.023310	-0.023310	0.000
21.2829	3.6786	3.6786	0.000	-0.022737	-0.022738	0.004
21.3079	3.6604	3.6604	0.000	-0.022142	-0.022142	0.000
21.3329	3.6433	3.6433	0.000	-0.021525	-0.021525	0.000
21.3579	3.6271	3.6271	0.000	-0.020885	-0.020885	0.000
21.3829	3.6118	3.6118	0.000	-0.020223	-0.020223	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
21.4079	3.5969	3.5969	0.000	-0.019538	-0.019538	0.000
21.4329	3.5823	3.5823	0.000	-0.018830	-0.018830	0.000
21.4579	3.5677	3.5677	0.000	-0.018099	-0.018099	0.000
21.4829	3.5531	3.5531	0.000	-0.017345	-0.017345	0.000
21.5079	3.5382	3.5382	0.000	-0.016570	-0.016570	0.000
21.5329	3.5233	3.5233	0.000	-0.015776	-0.015776	0.000
21.5579	3.5084	3.5084	0.000	-0.014966	-0.014966	0.000
21.5829	3.4935	3.4935	0.000	-0.014143	-0.014143	0.000
21.6079	3.4790	3.4790	0.000	-0.013310	-0.013310	0.000
21.6329	3.4649	3.4648	0.003	-0.012470	-0.012470	0.000
21.6579	3.4511	3.4511	0.000	-0.011626	-0.011626	0.000
21.6829	3.4377	3.4377	0.000	-0.010780	-0.010780	0.000
21.7079	3.4248	3.4248	0.000	-0.009935	-0.009935	0.001
21.7329	3.4122	3.4122	0.000	-0.009093	-0.009093	0.000
21.7579	3.4000	3.4000	0.000	-0.008253	-0.008253	0.000
21.7829	3.3882	3.3882	0.000	-0.007418	-0.007418	0.001
21.8079	3.3767	3.3767	0.000	-0.006588	-0.006588	0.000
21.8329	3.3656	3.3656	0.000	-0.005764	-0.005764	0.002
21.8579	3.3549	3.3548	0.003	-0.004946	-0.004946	0.000
21.8829	3.3445	3.3445	0.000	-0.004135	-0.004135	0.000
21.9079	3.3344	3.3344	0.000	-0.003331	-0.003331	0.000
21.9329	3.3247	3.3247	0.000	-0.002536	-0.002536	0.000
21.9579	3.3154	3.3154	0.000	-0.001751	-0.001751	0.006
21.9829	3.3065	3.3065	0.000	-0.000979	-0.000979	0.002
22.0079	3.2981	3.2980	0.003	-0.000222	-0.000222	0.009
22.0329	3.2900	3.2900	0.000	0.000519	0.000519	0.004
22.0579	3.2823	3.2823	0.000	0.001243	0.001243	0.000
22.0829	3.2749	3.2749	0.000	0.001947	0.001947	0.000
22.1079	3.2678	3.2678	0.000	0.002630	0.002630	0.000
22.1329	3.2612	3.2612	0.000	0.003290	0.003290	0.000
22.1579	3.2550	3.2549	0.003	0.003928	0.003928	0.000
22.1829	3.2491	3.2491	0.000	0.004543	0.004543	0.000
22.2079	3.2437	3.2437	0.000	0.005134	0.005134	0.000
22.2329	3.2387	3.2387	0.000	0.005701	0.005701	0.000
22.2579	3.2341	3.2340	0.003	0.006243	0.006243	0.000
22.2829	3.2298	3.2298	0.000	0.006762	0.006762	0.000
22.3079	3.2259	3.2259	0.000	0.007256	0.007256	0.000
22.3329	3.2223	3.2223	0.000	0.007726	0.007726	0.000
22.3579	3.2191	3.2191	0.000	0.008170	0.008170	0.000
22.3829	3.2162	3.2162	0.000	0.008589	0.008589	0.000
22.4079	3.2136	3.2136	0.000	0.008981	0.008981	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
22.4329	3.2114	3.2114	0.000	0.009346	0.009346	0.000
22.4579	3.2095	3.2095	0.000	0.009684	0.009684	0.000
22.4829	3.2079	3.2079	0.000	0.009995	0.009995	0.000
22.5079	3.2066	3.2066	0.000	0.010278	0.010278	0.000
22.5329	3.2057	3.2056	0.003	0.010532	0.010532	0.000
22.5579	3.2049	3.2049	0.000	0.010759	0.010759	0.000
22.5829	3.2045	3.2045	0.000	0.010957	0.010958	0.009
22.6079	3.2044	3.2043	0.003	0.011128	0.011128	0.000
22.6329	3.2045	3.2045	0.000	0.011272	0.011272	0.000
22.6579	3.2048	3.2048	0.000	0.011389	0.011389	0.000
22.6829	3.2055	3.2055	0.000	0.011479	0.011479	0.000
22.7079	3.2063	3.2063	0.000	0.011544	0.011544	0.000
22.7329	3.2074	3.2074	0.000	0.011583	0.011583	0.000
22.7579	3.2087	3.2087	0.000	0.011598	0.011598	0.000
22.7829	3.2102	3.2102	0.000	0.011589	0.011589	0.000
22.8079	3.2118	3.2118	0.000	0.011556	0.011556	0.000
22.8329	3.2137	3.2137	0.000	0.011499	0.011499	0.000
22.8579	3.2156	3.2156	0.000	0.011420	0.011420	0.000
22.8829	3.2177	3.2177	0.000	0.011318	0.011318	0.000
22.9079	3.2200	3.2200	0.000	0.011195	0.011195	0.000
22.9329	3.2223	3.2223	0.000	0.011050	0.011050	0.000
22.9579	3.2248	3.2248	0.000	0.010884	0.010884	0.000
22.9829	3.2274	3.2274	0.000	0.010698	0.010698	0.000
23.0079	3.2300	3.2300	0.000	0.010493	0.010493	0.000
23.0329	3.2328	3.2328	0.000	0.010270	0.010270	0.000
23.0579	3.2356	3.2356	0.000	0.010029	0.010029	0.000
23.0829	3.2385	3.2385	0.000	0.009771	0.009771	0.001
23.1079	3.2415	3.2415	0.000	0.009497	0.009497	0.001
23.1329	3.2445	3.2445	0.000	0.009209	0.009209	0.001
23.1579	3.2476	3.2476	0.000	0.008907	0.008907	0.000
23.1829	3.2507	3.2507	0.000	0.008591	0.008591	0.000
23.2079	3.2538	3.2537	0.003	0.008264	0.008264	0.001
23.2329	3.2568	3.2568	0.000	0.007924	0.007924	0.000
23.2579	3.2599	3.2599	0.000	0.007574	0.007574	0.000
23.2829	3.2630	3.2630	0.000	0.007215	0.007215	0.000
23.3079	3.2660	3.2660	0.000	0.006845	0.006845	0.000
23.3329	3.2690	3.2690	0.000	0.006467	0.006467	0.002
23.3579	3.2720	3.2720	0.000	0.006081	0.006081	0.000
23.3829	3.2750	3.2750	0.000	0.005689	0.005689	0.000
23.4079	3.2779	3.2779	0.000	0.005290	0.005290	0.000
23.4329	3.2807	3.2807	0.000	0.004887	0.004887	0.002

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, MOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
23.4579	3.2834	3.2834	0.000	0.004479	0.004479	0.000
23.4829	3.2860	3.2860	0.000	0.004068	0.004068	0.000
23.5079	3.2885	3.2885	0.000	0.003654	0.003654	0.000
23.5329	3.2909	3.2909	0.000	0.003238	0.003238	0.003
23.5579	3.2932	3.2932	0.000	0.002821	0.002821	0.000
23.5829	3.2954	3.2954	0.000	0.002404	0.002404	0.000
23.6079	3.2975	3.2975	0.000	0.001987	0.001987	0.000
23.6329	3.2995	3.2995	0.000	0.001571	0.001571	0.000
23.6579	3.3013	3.3013	0.000	0.001158	0.001158	0.000
23.6829	3.3030	3.3030	0.000	0.000747	0.000747	0.001
23.7079	3.3045	3.3045	0.000	0.000339	0.000339	0.000
23.7329	3.3060	3.3060	0.000	-0.000066	-0.000066	0.000
23.7579	3.3073	3.3073	0.000	-0.000467	-0.000467	0.002
23.7829	3.3085	3.3085	0.000	-0.000864	-0.000864	0.002
23.8079	3.3095	3.3095	0.000	-0.001257	-0.001257	0.000
23.8329	3.3104	3.3104	0.000	-0.001643	-0.001643	0.006
23.8579	3.3111	3.3111	0.000	-0.002024	-0.002024	0.000
23.8829	3.3116	3.3116	0.000	-0.002397	-0.002397	0.000
23.9079	3.3119	3.3119	0.000	-0.002764	-0.002764	0.000
23.9329	3.3120	3.3120	0.000	-0.003124	-0.003124	0.003
23.9579	3.3119	3.3119	0.000	-0.003477	-0.003477	0.003
23.9829	3.3116	3.3116	0.000	-0.003822	-0.003822	0.000
24.0079	3.3111	3.3111	0.000	-0.004159	-0.004159	0.002
24.0329	3.3104	3.3104	0.000	-0.004487	-0.004487	0.002
24.0579	3.3096	3.3096	0.000	-0.004808	-0.004808	0.000
24.0829	3.3086	3.3086	0.000	-0.005119	-0.005120	0.002
24.1079	3.3074	3.3074	0.000	-0.005423	-0.005423	0.000
24.1329	3.3060	3.3060	0.000	-0.005717	-0.005717	0.002
24.1579	3.3044	3.3044	0.000	-0.006003	-0.006003	0.000
24.1829	3.3026	3.3026	0.000	-0.006280	-0.006280	0.000
24.2079	3.3006	3.3006	0.000	-0.006548	-0.006548	0.000
24.2329	3.2984	3.2984	0.000	-0.006808	-0.006808	0.001
24.2579	3.2960	3.2960	0.000	-0.007060	-0.007060	0.000
24.2829	3.2934	3.2934	0.000	-0.007302	-0.007302	0.000
24.3079	3.2905	3.2905	0.000	-0.007537	-0.007537	0.001
24.3329	3.2873	3.2873	0.000	-0.007762	-0.007762	0.001
24.3579	3.2839	3.2839	0.000	-0.007980	-0.007980	0.001
24.3829	3.2802	3.2802	0.000	-0.008189	-0.008189	0.000
24.4079	3.2762	3.2762	0.000	-0.008391	-0.008392	0.001
24.4328	3.2720	3.2720	0.000	-0.008586	-0.008586	0.001
24.4578	3.2675	3.2675	0.000	-0.008774	-0.008774	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
24.4828	3.2627	3.2627	0.000	-0.008956	-0.008956	0.001
24.5078	3.2576	3.2576	0.000	-0.009131	-0.009131	0.001
24.5328	3.2522	3.2522	0.000	-0.009301	-0.009301	0.001
24.5578	3.2464	3.2464	0.000	-0.009466	-0.009467	0.001
24.5828	3.2403	3.2403	0.000	-0.009627	-0.009628	0.001
24.6078	3.2339	3.2339	0.000	-0.009785	-0.009785	0.001
24.6328	3.2270	3.2270	0.000	-0.009940	-0.009940	0.002
24.6578	3.2197	3.2197	0.000	-0.010092	-0.010092	0.000
24.6828	3.2119	3.2119	0.000	-0.010244	-0.010244	0.000
24.7078	3.2037	3.2036	0.003	-0.010395	-0.010395	0.000
24.7328	3.1948	3.1948	0.000	-0.010547	-0.010547	0.000
24.7578	3.1854	3.1854	0.000	-0.010701	-0.010701	0.000
24.7828	3.1754	3.1754	0.000	-0.010858	-0.010858	0.000
24.8078	3.1646	3.1646	0.000	-0.011019	-0.011019	0.000
24.8328	3.1530	3.1530	0.000	-0.011186	-0.011187	0.009
24.8578	3.1405	3.1405	0.000	-0.011361	-0.011361	0.000
24.8828	3.1270	3.1270	0.000	-0.011545	-0.011545	0.000
24.9078	3.1124	3.1123	0.003	-0.011740	-0.011740	0.000
24.9328	3.0964	3.0964	0.000	-0.011947	-0.011947	0.000
24.9578	3.0789	3.0789	0.000	-0.012170	-0.012171	0.008
24.9828	3.0597	3.0597	0.000	-0.012411	-0.012412	0.008
25.0078	3.0384	3.0384	0.000	-0.012673	-0.012673	0.000
25.0078	3.0384	3.0384	0.000	-0.012673	-0.012673	0.000
25.0328	3.2220	3.2220	0.000	-0.014736	-0.014736	0.000
25.0578	3.5069	3.5069	0.000	-0.016611	-0.016611	0.000
25.0828	3.7651	3.7651	0.000	-0.018359	-0.018359	0.000
25.1078	4.0050	4.0050	0.000	-0.020025	-0.020025	0.000
25.1328	4.2292	4.2292	0.000	-0.021631	-0.021631	0.000
25.1578	4.4394	4.4394	0.000	-0.023185	-0.023186	0.004
25.1828	4.5000	4.5000	0.000	-0.024693	-0.024693	0.000
25.2078	4.5000	4.5000	0.000	-0.026158	-0.026158	0.000
25.2328	4.5000	4.5000	0.000	-0.027583	-0.027583	0.000
25.2578	4.5000	4.5000	0.000	-0.028971	-0.028972	0.003
25.2828	4.5000	4.5000	0.000	-0.030329	-0.030330	0.003
25.3078	4.5000	4.5000	0.000	-0.031661	-0.031660	0.003
25.3328	4.5000	4.5000	0.000	-0.032964	-0.032964	0.000
25.3578	4.5000	4.5000	0.000	-0.034229	-0.034229	0.000
25.3828	4.5000	4.5000	0.000	-0.035432	-0.035432	0.000
25.4078	4.5000	4.5000	0.000	-0.036534	-0.036534	0.000
25.4328	4.5000	4.5000	0.000	-0.037483	-0.037483	0.000
25.4578	4.5000	4.5000	0.000	-0.038223	-0.038223	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
25.4828	4.5000	4.5000	0.000	-0.038704	-0.038703	0.003
25.5078	4.5000	4.5000	0.000	-0.038895	-0.038894	0.003
25.5328	4.4800	4.4799	0.002	-0.038791	-0.038790	0.003
25.5578	4.4030	4.4029	0.002	-0.038411	-0.038410	0.003
25.5828	4.2899	4.2898	0.002	-0.037790	-0.037789	0.003
25.6078	4.1643	4.1641	0.005	-0.036969	-0.036968	0.003
25.6328	4.0483	4.0482	0.002	-0.035993	-0.035992	0.003
25.6578	3.9580	3.9579	0.003	-0.034903	-0.034902	0.003
25.6828	3.9006	3.9006	0.000	-0.033735	-0.033734	0.003
25.7078	3.8752	3.8751	0.003	-0.032521	-0.032520	0.003
25.7328	3.8740	3.8740	0.000	-0.031281	-0.031280	0.003
25.7578	3.8859	3.8859	0.000	-0.030034	-0.030033	0.003
25.7828	3.8993	3.8993	0.000	-0.028788	-0.028787	0.003
25.8078	3.9048	3.9048	0.000	-0.027547	-0.027546	0.004
25.8328	3.8970	3.8970	0.000	-0.026310	-0.026309	0.004
25.8578	3.8746	3.8746	0.000	-0.025073	-0.025072	0.004
25.8828	3.8400	3.8400	0.000	-0.023830	-0.023829	0.004
25.9078	3.7978	3.7978	0.000	-0.022574	-0.022573	0.004
25.9328	3.7537	3.7536	0.003	-0.021300	-0.021299	0.005
25.9578	3.7126	3.7125	0.003	-0.020003	-0.020002	0.005
25.9828	3.6780	3.6780	0.000	-0.018684	-0.018683	0.005
26.0078	3.6515	3.6514	0.003	-0.017343	-0.017342	0.006
26.0328	3.6324	3.6324	0.000	-0.015986	-0.015985	0.006
26.0578	3.6190	3.6190	0.000	-0.014618	-0.014618	0.000
26.0828	3.6086	3.6086	0.000	-0.013249	-0.013248	0.008
26.1078	3.5986	3.5986	0.000	-0.011885	-0.011884	0.008
26.1328	3.5870	3.5870	0.000	-0.010534	-0.010533	0.009
26.1578	3.5727	3.5727	0.000	-0.009201	-0.009200	0.005
26.1828	3.5557	3.5556	0.003	-0.007890	-0.007889	0.005
26.2078	3.5364	3.5364	0.000	-0.006603	-0.006603	0.006
26.2328	3.5162	3.5162	0.000	-0.005342	-0.005341	0.007
26.2578	3.4963	3.4962	0.003	-0.004103	-0.004102	0.010
26.2828	3.4777	3.4777	0.000	-0.002885	-0.002884	0.010
26.3078	3.4612	3.4612	0.000	-0.001685	-0.001685	0.000
26.3328	3.4472	3.4472	0.000	-0.000501	-0.000501	0.000
26.3578	3.4354	3.4354	0.000	0.000668	0.000668	0.000
26.3828	3.4254	3.4254	0.000	0.001823	0.001823	0.005
26.4078	3.4165	3.4165	0.000	0.002963	0.002963	0.007
26.4328	3.4081	3.4081	0.000	0.004086	0.004086	0.002
26.4578	3.3998	3.3998	0.000	0.005189	0.005189	0.002
26.4828	3.3911	3.3911	0.000	0.006267	0.006268	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
26.5078	3.3821	3.3821	0.000	0.007319	0.007319	0.001
26.5328	3.3728	3.3728	0.000	0.008339	0.008339	0.001
26.5578	3.3635	3.3635	0.000	0.009324	0.009324	0.000
26.5828	3.3546	3.3546	0.000	0.010272	0.010272	0.000
26.6078	3.3463	3.3463	0.000	0.011182	0.011182	0.000
26.6328	3.3389	3.3388	0.003	0.012052	0.012052	0.000
26.6578	3.3324	3.3324	0.000	0.012883	0.012883	0.000
26.6828	3.3268	3.3268	0.000	0.013675	0.013675	0.000
26.7078	3.3220	3.3220	0.000	0.014431	0.014431	0.000
26.7328	3.3180	3.3180	0.000	0.015150	0.015150	0.000
26.7578	3.3144	3.3144	0.000	0.015835	0.015835	0.000
26.7828	3.3112	3.3112	0.000	0.016486	0.016486	0.000
26.8078	3.3082	3.3083	0.003	0.017104	0.017104	0.000
26.8328	3.3055	3.3055	0.000	0.017688	0.017687	0.006
26.8578	3.3031	3.3031	0.000	0.018237	0.018237	0.000
26.8828	3.3008	3.3008	0.000	0.018752	0.018751	0.005
26.9078	3.2988	3.2988	0.000	0.019229	0.019229	0.000
26.9328	3.2972	3.2972	0.000	0.019669	0.019669	0.000
26.9578	3.2959	3.2959	0.000	0.020070	0.020070	0.000
26.9828	3.2950	3.2950	0.000	0.020431	0.020431	0.000
27.0078	3.2944	3.2944	0.000	0.020751	0.020751	0.000
27.0328	3.2942	3.2942	0.000	0.021031	0.021031	0.000
27.0578	3.2943	3.2943	0.000	0.021271	0.021271	0.000
27.0828	3.2948	3.2948	0.000	0.021472	0.021472	0.000
27.1078	3.2955	3.2955	0.000	0.021635	0.021634	0.005
27.1328	3.2965	3.2966	0.003	0.021760	0.021760	0.000
27.1578	3.2978	3.2978	0.000	0.021850	0.021850	0.000
27.1828	3.2994	3.2994	0.000	0.021906	0.021906	0.000
27.2078	3.3011	3.3011	0.000	0.021929	0.021929	0.000
27.2328	3.3031	3.3031	0.000	0.021920	0.021919	0.005
27.2578	3.3053	3.3053	0.000	0.021879	0.021878	0.005
27.2828	3.3077	3.3077	0.000	0.021807	0.021806	0.005
27.3078	3.3103	3.3103	0.000	0.021704	0.021704	0.000
27.3328	3.3130	3.3130	0.000	0.021571	0.021570	0.005
27.3578	3.3158	3.3158	0.000	0.021407	0.021406	0.005
27.3828	3.3188	3.3188	0.000	0.021213	0.021212	0.005
27.4078	3.3218	3.3218	0.000	0.020989	0.020989	0.000
27.4328	3.3250	3.3250	0.000	0.020736	0.020736	0.000
27.4578	3.3283	3.3283	0.000	0.020455	0.020455	0.000
27.4828	3.3318	3.3318	0.000	0.020147	0.020146	0.005
27.5078	3.3353	3.3353	0.000	0.019812	0.019812	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
27.5328	3.3390	3.3389	0.003	0.019453	0.019453	0.000
27.5578	3.3427	3.3427	0.000	0.019071	0.019070	0.005
27.5828	3.3466	3.3466	0.000	0.018667	0.018666	0.005
27.6078	3.3505	3.3505	0.000	0.018242	0.018242	0.000
27.6328	3.3545	3.3545	0.000	0.017798	0.017798	0.000
27.6578	3.3586	3.3586	0.000	0.017337	0.017336	0.006
27.6828	3.3626	3.3626	0.000	0.016858	0.016857	0.006
27.7078	3.3667	3.3667	0.000	0.016363	0.016362	0.006
27.7328	3.3709	3.3709	0.000	0.015853	0.015852	0.006
27.7578	3.3750	3.3749	0.003	0.015328	0.015328	0.000
27.7828	3.3790	3.3790	0.000	0.014790	0.014789	0.007
27.8078	3.3831	3.3831	0.000	0.014238	0.014238	0.000
27.8328	3.3871	3.3871	0.000	0.013675	0.013675	0.000
27.8578	3.3911	3.3911	0.000	0.013101	0.013100	0.008
27.8828	3.3951	3.3951	0.000	0.012516	0.012516	0.000
27.9078	3.3990	3.3990	0.000	0.011923	0.011923	0.000
27.9328	3.4030	3.4030	0.000	0.011322	0.011322	0.000
27.9578	3.4069	3.4069	0.000	0.010715	0.010714	0.009
27.9828	3.4107	3.4107	0.000	0.010102	0.010102	0.000
28.0078	3.4145	3.4145	0.000	0.009486	0.009485	0.005
28.0328	3.4182	3.4182	0.000	0.008866	0.008865	0.005
28.0578	3.4219	3.4219	0.000	0.008244	0.008244	0.005
28.0828	3.4255	3.4255	0.000	0.007622	0.007621	0.005
28.1078	3.4290	3.4290	0.000	0.006999	0.006999	0.006
28.1328	3.4324	3.4324	0.000	0.006378	0.006377	0.006
28.1578	3.4357	3.4357	0.000	0.005758	0.005757	0.007
28.1828	3.4388	3.4388	0.000	0.005140	0.005140	0.008
28.2078	3.4419	3.4419	0.000	0.004525	0.004525	0.009
28.2328	3.4449	3.4449	0.000	0.003915	0.003915	0.008
28.2578	3.4478	3.4478	0.000	0.003309	0.003308	0.009
28.2828	3.4506	3.4506	0.000	0.002708	0.002708	0.000
28.3078	3.4532	3.4532	0.000	0.002113	0.002113	0.000
28.3328	3.4557	3.4557	0.000	0.001525	0.001525	0.000
28.3578	3.4580	3.4579	0.003	0.000944	0.000944	0.000
28.3828	3.4601	3.4601	0.000	0.000372	0.000372	0.000
28.4078	3.4620	3.4620	0.000	-0.000191	-0.000191	0.000
28.4328	3.4638	3.4638	0.000	-0.000744	-0.000744	0.000
28.4578	3.4656	3.4656	0.000	-0.001286	-0.001286	0.000
28.4828	3.4672	3.4672	0.000	-0.001817	-0.001817	0.000
28.5078	3.4687	3.4687	0.000	-0.002337	-0.002337	0.009
28.5328	3.4700	3.4700	0.000	-0.002844	-0.002844	0.007

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
28.5578	3.4711	3.4711	0.000	-0.003339	-0.003339	0.003
28.5828	3.4721	3.4721	0.000	-0.003821	-0.003821	0.003
28.6078	3.4730	3.4729	0.003	-0.004290	-0.004290	0.002
28.6328	3.4736	3.4736	0.000	-0.004745	-0.004745	0.000
28.6578	3.4741	3.4741	0.000	-0.005185	-0.005185	0.000
28.6828	3.4745	3.4745	0.000	-0.005612	-0.005612	0.002
28.7078	3.4747	3.4747	0.000	-0.006024	-0.006024	0.000
28.7328	3.4749	3.4748	0.003	-0.006421	-0.006421	0.000
28.7578	3.4748	3.4748	0.000	-0.006803	-0.006803	0.000
28.7828	3.4746	3.4746	0.000	-0.007169	-0.007169	0.001
28.8078	3.4741	3.4741	0.000	-0.007520	-0.007520	0.000
28.8328	3.4735	3.4735	0.000	-0.007855	-0.007855	0.000
28.8578	3.4727	3.4727	0.000	-0.008174	-0.008174	0.000
28.8828	3.4717	3.4717	0.000	-0.008477	-0.008477	0.001
28.9078	3.4706	3.4706	0.000	-0.008763	-0.008763	0.000
28.9328	3.4693	3.4692	0.003	-0.009034	-0.009033	0.001
28.9578	3.4678	3.4678	0.000	-0.009287	-0.009287	0.001
28.9828	3.4661	3.4661	0.000	-0.009525	-0.009525	0.001
29.0078	3.4644	3.4643	0.003	-0.009747	-0.009747	0.001
29.0328	3.4624	3.4624	0.000	-0.009952	-0.009952	0.002
29.0578	3.4603	3.4603	0.000	-0.010142	-0.010141	0.010
29.0828	3.4580	3.4580	0.000	-0.010315	-0.010315	0.000
29.1078	3.4556	3.4556	0.000	-0.010473	-0.010473	0.000
29.1328	3.4530	3.4530	0.000	-0.010616	-0.010616	0.000
29.1578	3.4502	3.4502	0.000	-0.010743	-0.010743	0.000
29.1828	3.4473	3.4473	0.000	-0.010855	-0.010855	0.000
29.2078	3.4442	3.4442	0.000	-0.010953	-0.010953	0.000
29.2328	3.4410	3.4410	0.000	-0.011035	-0.011035	0.000
29.2578	3.4376	3.4376	0.000	-0.011104	-0.011103	0.009
29.2828	3.4340	3.4340	0.000	-0.011158	-0.011158	0.000
29.3078	3.4303	3.4303	0.000	-0.011198	-0.011198	0.000
29.3328	3.4265	3.4265	0.000	-0.011225	-0.011225	0.000
29.3578	3.4225	3.4225	0.000	-0.011239	-0.011238	0.009
29.3828	3.4183	3.4183	0.000	-0.011240	-0.011239	0.009
29.4078	3.4140	3.4140	0.000	-0.011228	-0.011228	0.000
29.4328	3.4096	3.4096	0.000	-0.011205	-0.011205	0.000
29.4578	3.4050	3.4050	0.000	-0.011170	-0.011170	0.000
29.4828	3.4002	3.4002	0.000	-0.011125	-0.011125	0.000
29.5078	3.3953	3.3953	0.000	-0.011069	-0.011068	0.009
29.5328	3.3903	3.3903	0.000	-0.011002	-0.011002	0.000
29.5578	3.3851	3.3851	0.000	-0.010927	-0.010926	0.009

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
29.5828	3.3797	3.3797	0.000	-0.010842	-0.010842	0.000
29.6078	3.3742	3.3742	0.000	-0.010748	-0.010748	0.000
29.6328	3.3685	3.3685	0.000	-0.010647	-0.010647	0.000
29.6578	3.3627	3.3627	0.000	-0.010538	-0.010538	0.000
29.6828	3.3567	3.3566	0.003	-0.010422	-0.010422	0.000
29.7078	3.3505	3.3505	0.000	-0.010300	-0.010300	0.000
29.7328	3.3441	3.3441	0.000	-0.010172	-0.010172	0.000
29.7578	3.3376	3.3376	0.000	-0.010039	-0.010039	0.000
29.7828	3.3309	3.3308	0.003	-0.009901	-0.009901	0.002
29.8078	3.3239	3.3239	0.000	-0.009759	-0.009759	0.002
29.8328	3.3168	3.3168	0.000	-0.009614	-0.009614	0.002
29.8578	3.3094	3.3094	0.000	-0.009467	-0.009466	0.002
29.8828	3.3019	3.3018	0.003	-0.009317	-0.009317	0.002
29.9078	3.2940	3.2940	0.000	-0.009166	-0.009166	0.002
29.9328	3.2859	3.2859	0.000	-0.009014	-0.009014	0.002
29.9578	3.2775	3.2775	0.000	-0.008862	-0.008862	0.001
29.9828	3.2688	3.2688	0.000	-0.008712	-0.008711	0.001
30.0078	3.2598	3.2598	0.000	-0.008562	-0.008562	0.002
30.0328	3.2598	3.2598	0.000	-0.008562	-0.008562	0.002
30.0578	3.2598	3.2598	0.000	-0.008562	-0.008562	0.002
30.0828	3.2598	3.2598	0.000	-0.008562	-0.008562	0.002
30.1078	3.4730	3.4730	0.000	-0.009674	-0.009674	0.002
30.1328	3.7607	3.7607	0.000	-0.010585	-0.010584	0.009
30.1578	4.0255	4.0255	0.000	-0.011311	-0.011311	0.000
30.1828	4.2720	4.2720	0.000	-0.011934	-0.011934	0.000
30.2078	4.5000	4.5000	0.000	-0.012495	-0.012495	0.000
30.2328	4.5000	4.5000	0.000	-0.013018	-0.013018	0.000
30.2578	4.5000	4.5000	0.000	-0.013512	-0.013512	0.000
30.2828	4.5000	4.5000	0.000	-0.013978	-0.013978	0.000
30.3078	4.5000	4.5000	0.000	-0.014419	-0.014419	0.000
30.3328	4.5000	4.5000	0.000	-0.014840	-0.014840	0.000
30.3578	4.5000	4.5000	0.000	-0.015246	-0.015246	0.000
30.3828	4.5000	4.5000	0.000	-0.015643	-0.015643	0.000
30.4078	4.5000	4.5000	0.000	-0.016037	-0.016037	0.000
30.4328	4.5000	4.5000	0.000	-0.016435	-0.016435	0.000
30.4578	4.5000	4.5000	0.000	-0.016842	-0.016842	0.000
30.4828	4.5000	4.5000	0.000	-0.017260	-0.017260	0.000
30.5078	4.5000	4.5000	0.000	-0.017690	-0.017690	0.000
30.5328	4.5000	4.5000	0.000	-0.018128	-0.018128	0.000
30.5578	4.5000	4.5000	0.000	-0.018574	-0.018574	0.000
	4.5000	4.5000	0.000	-0.019023	-0.019023	0.000
	4.5000	4.5000	0.000	-0.019472	-0.019472	0.000
	4.5000	4.5000	0.000	-0.019919	-0.019919	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
30.5828	4.5000	4.5000	0.000	-0.020363	-0.020363	0.000
30.6078	4.5000	4.5000	0.000	-0.020806	-0.020806	0.000
30.6328	4.5000	4.5000	0.000	-0.021252	-0.021252	0.000
30.6578	4.5000	4.5000	0.000	-0.021705	-0.021705	0.000
30.6828	4.5000	4.5000	0.000	-0.022172	-0.022173	0.005
30.7078	4.5000	4.5000	0.000	-0.022664	-0.022664	0.000
30.7328	4.5000	4.5000	0.000	-0.023189	-0.023190	0.004
30.7578	4.5000	4.5000	0.000	-0.023762	-0.023762	0.000
30.7828	4.5000	4.5000	0.000	-0.024396	-0.024397	0.004
30.8078	4.5000	4.5000	0.000	-0.025111	-0.025111	0.000
30.8328	4.5000	4.5000	0.000	-0.025941	-0.025942	0.004
30.8578	4.5000	4.5000	0.000	-0.026987	-0.026987	0.000
30.8828	4.5000	4.5000	0.000	-0.028329	-0.028330	0.004
30.9078	4.5000	4.5000	0.000	-0.030144	-0.030145	0.003
30.9328	4.4849	4.4848	0.002	-0.032287	-0.032288	0.003
30.9578	4.2202	4.2201	0.002	-0.032890	-0.032890	0.000
30.9827	3.7414	3.7413	0.003	-0.032587	-0.032587	0.000
31.0077	3.2720	3.2718	0.006	-0.031767	-0.031767	0.000
31.0327	2.8288	2.8287	0.004	-0.030543	-0.030543	0.000
31.0577	2.4088	2.4086	0.008	-0.029013	-0.029013	0.000
31.0827	2.0128	2.0127	0.005	-0.027276	-0.027275	0.004
31.1077	1.6819	1.6818	0.006	-0.025416	-0.025415	0.004
31.1327	1.4500	1.4499	0.007	-0.023499	-0.023498	0.004
31.1577	1.3282	1.3282	0.000	-0.021570	-0.021569	0.005
31.1827	1.3081	1.3081	0.000	-0.019671	-0.019670	0.005
31.2077	1.3660	1.3660	0.000	-0.017857	-0.017856	0.006
31.2327	1.4701	1.4700	0.007	-0.016148	-0.016147	0.006
31.2577	1.5874	1.5874	0.000	-0.014541	-0.014540	0.007
31.2827	1.6902	1.6901	0.006	-0.013020	-0.013019	0.008
31.3077	1.7595	1.7595	0.000	-0.011559	-0.011558	0.009
31.3327	1.7869	1.7869	0.000	-0.010131	-0.010131	0.000
31.3577	1.7737	1.7736	0.006	-0.008711	-0.008711	0.008
31.3827	1.7281	1.7280	0.006	-0.007280	-0.007280	0.004
31.4077	1.6628	1.6628	0.000	-0.005824	-0.005824	0.005
31.4327	1.5917	1.5917	0.000	-0.004342	-0.004342	0.009
31.4577	1.5272	1.5271	0.007	-0.002840	-0.002840	0.000
31.4827	1.4782	1.4782	0.000	-0.001330	-0.001330	0.008
31.5077	1.4498	1.4498	0.000	0.000172	0.000172	0.000
31.5327	1.4426	1.4426	0.000	0.001643	0.001643	0.000
31.5577	1.4538	1.4538	0.000	0.003067	0.003067	0.000
31.5827	1.4785	1.4785	0.000	0.004431	0.004431	0.005

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: *No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
31.6077	1.5105	1.5105	0.000	0.005723	0.005723	0.002
31.6327	1.5442	1.5442	0.000	0.006940	0.006941	0.009
31.6577	1.5749	1.5749	0.000	0.008084	0.008085	0.006
31.6827	1.6000	1.5999	0.006	0.009162	0.009162	0.005
31.7077	1.6184	1.6184	0.000	0.010184	0.010184	0.000
31.7327	1.6310	1.6310	0.000	0.011161	0.011161	0.000
31.7577	1.6394	1.6394	0.000	0.012105	0.012105	0.000
31.7827	1.6460	1.6460	0.000	0.013026	0.013026	0.000
31.8077	1.6530	1.6530	0.000	0.013930	0.013930	0.000
31.8327	1.6622	1.6622	0.000	0.014819	0.014819	0.000
31.8577	1.6749	1.6749	0.000	0.015691	0.015691	0.000
31.8827	1.6914	1.6914	0.000	0.016543	0.016543	0.000
31.9077	1.7112	1.7112	0.000	0.017366	0.017366	0.000
31.9327	1.7337	1.7337	0.000	0.018151	0.018151	0.000
31.9577	1.7575	1.7575	0.000	0.018891	0.018891	0.000
31.9827	1.7817	1.7817	0.000	0.019578	0.019578	0.000
32.0077	1.8051	1.8051	0.000	0.020207	0.020207	0.000
32.0327	1.8271	1.8271	0.000	0.020776	0.020776	0.000
32.0577	1.8474	1.8474	0.000	0.021285	0.021285	0.000
32.0827	1.8660	1.8660	0.000	0.021737	0.021737	0.000
32.1077	1.8832	1.8832	0.000	0.022138	0.022138	0.000
32.1327	1.8995	1.8995	0.000	0.022493	0.022493	0.000
32.1577	1.9154	1.9154	0.000	0.022809	0.022809	0.000
32.1827	1.9312	1.9312	0.000	0.023092	0.023092	0.000
32.2077	1.9474	1.9474	0.000	0.023347	0.023347	0.000
32.2327	1.9639	1.9639	0.000	0.023576	0.023576	0.000
32.2577	1.9808	1.9808	0.000	0.023781	0.023781	0.000
32.2827	1.9979	1.9979	0.000	0.023961	0.023961	0.000
32.3077	2.0148	2.0148	0.000	0.024113	0.024113	0.000
32.3327	2.0312	2.0312	0.000	0.024235	0.024235	0.000
32.3576	2.0469	2.0469	0.000	0.024324	0.024324	0.000
32.3826	2.0616	2.0616	0.000	0.024375	0.024375	0.000
32.4076	2.0751	2.0752	0.005	0.024388	0.024388	0.000
32.4326	2.0876	2.0876	0.000	0.024361	0.024361	0.000
32.4576	2.0989	2.0989	0.000	0.024293	0.024293	0.000
32.4826	2.1094	2.1094	0.000	0.024187	0.024187	0.000
32.5076	2.1192	2.1192	0.000	0.024046	0.024046	0.000
32.5326	2.1284	2.1284	0.000	0.023872	0.023872	0.000
32.5576	2.1373	2.1373	0.000	0.023670	0.023669	0.004
32.5826	2.1460	2.1460	0.000	0.023442	0.023442	0.000
32.6076	2.1546	2.1546	0.000	0.023194	0.023194	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
32.6326	2.1631	2.1631	0.000	0.022926	0.022926	0.000
32.6576	2.1715	2.1714	0.005	0.022642	0.022642	0.000
32.6826	2.1795	2.1795	0.000	0.022342	0.022341	0.004
32.7076	2.1872	2.1872	0.000	0.022025	0.022025	0.000
32.7326	2.1944	2.1944	0.000	0.021691	0.021691	0.000
32.7575	2.2010	2.2010	0.000	0.021340	0.021339	0.005
32.7825	2.2070	2.2070	0.000	0.020969	0.020969	0.000
32.8075	2.2123	2.2123	0.000	0.020578	0.020578	0.000
32.8325	2.2170	2.2170	0.000	0.020167	0.020167	0.000
32.8575	2.2211	2.2211	0.000	0.019736	0.019736	0.000
32.8825	2.2247	2.2247	0.000	0.019286	0.019286	0.000
32.9075	2.2279	2.2279	0.000	0.018819	0.018819	0.000
32.9325	2.2309	2.2309	0.000	0.018336	0.018336	0.000
32.9575	2.2336	2.2336	0.000	0.017840	0.017840	0.000
32.9825	2.2363	2.2363	0.000	0.017333	0.017332	0.006
33.0075	2.2389	2.2389	0.000	0.016817	0.016816	0.006
33.0325	2.2415	2.2415	0.000	0.016294	0.016293	0.006
33.0575	2.2440	2.2440	0.000	0.015765	0.015764	0.006
33.0825	2.2464	2.2464	0.000	0.015231	0.015231	0.000
33.1075	2.2486	2.2486	0.000	0.014693	0.014693	0.000
33.1325	2.2506	2.2506	0.000	0.014151	0.014151	0.000
33.1575	2.2524	2.2524	0.000	0.013606	0.013605	0.007
33.1824	2.2538	2.2538	0.000	0.013056	0.013056	0.000
33.2074	2.2549	2.2549	0.000	0.012503	0.012502	0.008
33.2324	2.2558	2.2558	0.000	0.011945	0.011945	0.000
33.2574	2.2563	2.2563	0.000	0.011384	0.011383	0.009
33.2824	2.2566	2.2566	0.000	0.010819	0.010819	0.000
33.3074	2.2567	2.2567	0.000	0.010253	0.010252	0.010
33.3324	2.2567	2.2567	0.000	0.009685	0.009685	0.003
33.3574	2.2566	2.2566	0.000	0.009117	0.009117	0.004
33.3824	2.2565	2.2565	0.000	0.008551	0.008551	0.004
33.4074	2.2564	2.2564	0.000	0.007988	0.007987	0.005
33.4324	2.2564	2.2564	0.000	0.007428	0.007428	0.004
33.4574	2.2563	2.2563	0.000	0.006874	0.006874	0.006
33.4824	2.2562	2.2562	0.000	0.006325	0.006325	0.005
33.5074	2.2560	2.2560	0.000	0.005783	0.005783	0.005
33.5324	2.2558	2.2558	0.000	0.005247	0.005247	0.006
33.5574	2.2555	2.2555	0.000	0.004718	0.004717	0.008
33.5823	2.2551	2.2551	0.000	0.004195	0.004195	0.007
33.6073	2.2545	2.2545	0.000	0.003680	0.003679	0.008
33.6323	2.2537	2.2537	0.000	0.003171	0.003171	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
33.6573	2.2529	2.2529	0.000	0.002669	0.002669	0.000
33.6823	2.2519	2.2519	0.000	0.002175	0.002174	0.009
33.7073	2.2508	2.2508	0.000	0.001688	0.001688	0.006
33.7323	2.2497	2.2497	0.000	0.001210	0.001210	0.008
33.7573	2.2486	2.2485	0.004	0.000740	0.000740	0.000
33.7823	2.2474	2.2474	0.000	0.000279	0.000279	0.000
33.8073	2.2463	2.2463	0.000	-0.000170	-0.000170	0.000
33.8323	2.2452	2.2452	0.000	-0.000607	-0.000607	0.000
33.8573	2.2441	2.2441	0.000	-0.001033	-0.001033	0.000
33.8823	2.2430	2.2430	0.000	-0.001447	-0.001447	0.000
33.9073	2.2420	2.2420	0.000	-0.001849	-0.001849	0.005
33.9323	2.2409	2.2409	0.000	-0.002239	-0.002239	0.009
33.9573	2.2398	2.2398	0.000	-0.002617	-0.002617	0.004
33.9823	2.2386	2.2386	0.000	-0.002983	-0.002983	0.007
34.0072	2.2374	2.2374	0.000	-0.003337	-0.003337	0.003
34.0322	2.2361	2.2361	0.000	-0.003678	-0.003678	0.003
34.0572	2.2348	2.2348	0.000	-0.004008	-0.004008	0.002
34.0822	2.2334	2.2334	0.000	-0.004325	-0.004325	0.002
34.1072	2.2320	2.2320	0.000	-0.004629	-0.004630	0.002
34.1322	2.2305	2.2305	0.000	-0.004922	-0.004922	0.002
34.1572	2.2290	2.2290	0.000	-0.005201	-0.005201	0.002
34.1822	2.2276	2.2276	0.000	-0.005468	-0.005468	0.002
34.2072	2.2262	2.2262	0.000	-0.005721	-0.005721	0.000
34.2322	2.2248	2.2248	0.000	-0.005962	-0.005962	0.000
34.2572	2.2234	2.2234	0.000	-0.006188	-0.006188	0.002
34.2822	2.2221	2.2221	0.000	-0.006401	-0.006401	0.000
34.3072	2.2207	2.2207	0.000	-0.006600	-0.006601	0.002
34.3322	2.2194	2.2194	0.000	-0.006787	-0.006787	0.000
34.3572	2.2181	2.2181	0.000	-0.006960	-0.006960	0.000
34.3822	2.2168	2.2168	0.000	-0.007120	-0.007120	0.000
34.4071	2.2154	2.2154	0.000	-0.007267	-0.007267	0.000
34.4321	2.2140	2.2140	0.000	-0.007402	-0.007402	0.000
34.4571	2.2126	2.2126	0.000	-0.007525	-0.007525	0.000
34.4821	2.2112	2.2112	0.000	-0.007635	-0.007635	0.000
34.5071	2.2098	2.2098	0.000	-0.007733	-0.007733	0.000
34.5321	2.2084	2.2084	0.000	-0.007820	-0.007820	0.000
34.5571	2.2070	2.2069	0.005	-0.007894	-0.007894	0.000
34.5821	2.2056	2.2055	0.005	-0.007957	-0.007957	0.000
34.6071	2.2042	2.2042	0.000	-0.008009	-0.008009	0.000
34.6321	2.2029	2.2028	0.005	-0.008049	-0.008049	0.001
34.6571	2.2015	2.2015	0.000	-0.008078	-0.008077	0.001

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
34.6821	2.2003	2.2003	0.000	-0.008095	-0.008095	0.000
34.7071	2.1990	2.1990	0.000	-0.008102	-0.008102	0.001
34.7321	2.1978	2.1978	0.000	-0.008098	-0.008098	0.000
34.7571	2.1966	2.1966	0.000	-0.008084	-0.008084	0.000
34.7821	2.1954	2.1954	0.000	-0.008060	-0.008060	0.000
34.807	2.1942	2.1942	0.000	-0.008027	-0.008027	0.000
34.832	2.1930	2.1930	0.000	-0.007983	-0.007983	0.000
34.857	2.1919	2.1919	0.000	-0.007931	-0.007931	0.000
34.882	2.1907	2.1907	0.000	-0.007870	-0.007870	0.001
34.907	2.1896	2.1896	0.000	-0.007801	-0.007801	0.000
34.932	2.1885	2.1885	0.000	-0.007723	-0.007723	0.001
34.957	2.1874	2.1874	0.000	-0.007638	-0.007638	0.000
34.982	2.1864	2.1864	0.000	-0.007545	-0.007545	0.001
35.007	2.1853	2.1853	0.000	-0.007444	-0.007444	0.001
35.032	2.1844	2.1844	0.000	-0.007337	-0.007337	0.000
35.057	2.1834	2.1834	0.000	-0.007222	-0.007222	0.001
35.082	2.1825	2.1825	0.000	-0.007101	-0.007101	0.001
35.107	2.1816	2.1816	0.000	-0.006974	-0.006974	0.000
35.132	2.1808	2.1808	0.000	-0.006840	-0.006840	0.000
35.157	2.1799	2.1799	0.000	-0.006701	-0.006701	0.001
35.182	2.1792	2.1792	0.000	-0.006557	-0.006557	0.002
35.207	2.1784	2.1784	0.000	-0.006408	-0.006408	0.000
35.2319	2.1777	2.1777	0.000	-0.006254	-0.006254	0.000
35.2569	2.1770	2.1769	0.005	-0.006095	-0.006095	0.002
35.2819	2.1763	2.1763	0.000	-0.005933	-0.005933	0.002
35.3069	2.1756	2.1756	0.000	-0.005767	-0.005767	0.002
35.3319	2.1750	2.1750	0.000	-0.005597	-0.005597	0.002
35.3569	2.1744	2.1744	0.000	-0.005424	-0.005424	0.002
35.3819	2.1738	2.1738	0.000	-0.005249	-0.005249	0.002
35.4069	2.1733	2.1733	0.000	-0.005071	-0.005071	0.004
35.4319	2.1728	2.1728	0.000	-0.004891	-0.004891	0.002
35.4569	2.1723	2.1723	0.000	-0.004709	-0.004709	0.002
35.4819	2.1719	2.1719	0.000	-0.004525	-0.004525	0.002
35.5069	2.1715	2.1715	0.000	-0.004339	-0.004339	0.005
35.5319	2.1711	2.1711	0.000	-0.004153	-0.004152	0.002
35.5569	2.1708	2.1708	0.000	-0.003965	-0.003965	0.005
35.5819	2.1705	2.1705	0.000	-0.003776	-0.003776	0.003
35.6069	2.1703	2.1702	0.005	-0.003587	-0.003587	0.003
35.6318	2.1700	2.1700	0.000	-0.003398	-0.003398	0.003
35.6568	2.1698	2.1698	0.000	-0.003209	-0.003208	0.003
35.6818	2.1696	2.1696	0.000	-0.003020	-0.003020	0.003

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET
TI INTERACTIVE PLOTTING PROGRAM--PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
35.7068	2.1695	2.1695	0.000	-0.002831	-0.002831	0.004
35.7318	2.1693	2.1693	0.000	-0.002644	-0.002643	0.004
35.7568	2.1692	2.1692	0.000	-0.002457	-0.002457	0.004
35.7818	2.1691	2.1691	0.000	-0.002271	-0.002271	0.000
35.8068	2.1691	2.1691	0.000	-0.002087	-0.002087	0.005
35.8318	2.1691	2.1691	0.000	-0.001905	-0.001905	0.005
35.8568	2.1691	2.1691	0.000	-0.001724	-0.001724	0.006
35.8818	2.1691	2.1691	0.000	-0.001546	-0.001546	0.006
35.9068	2.1691	2.1691	0.000	-0.001369	-0.001369	0.007
35.9318	2.1691	2.1691	0.000	-0.001195	-0.001195	0.000
35.9568	2.1692	2.1692	0.000	-0.001023	-0.001023	0.010
35.9818	2.1693	2.1693	0.000	-0.000853	-0.000853	0.005
36.0068	2.1694	2.1694	0.000	-0.000686	-0.000686	0.004
36.0317	2.1695	2.1695	0.000	-0.000523	-0.000523	0.004
36.0567	2.1697	2.1697	0.000	-0.000362	-0.000362	0.003
36.0817	2.1699	2.1699	0.000	-0.000206	-0.000206	0.000
36.1067	2.1701	2.1701	0.000	-0.000053	-0.000053	0.006
36.1317	2.1703	2.1703	0.000	0.000096	0.000096	0.003
36.1567	2.1706	2.1706	0.000	0.000242	0.000242	0.000
36.1817	2.1708	2.1708	0.000	0.000383	0.000383	0.000
36.2067	2.1710	2.1710	0.000	0.000520	0.000520	0.002
36.2317	2.1713	2.1713	0.000	0.000653	0.000653	0.002
36.2567	2.1716	2.1715	0.005	0.000782	0.000782	0.001
36.2817	2.1718	2.1718	0.000	0.000908	0.000908	0.001
36.3067	2.1722	2.1721	0.005	0.001029	0.001029	0.000
36.3317	2.1725	2.1725	0.000	0.001147	0.001147	0.000
36.3567	2.1729	2.1729	0.000	0.001260	0.001260	0.000
36.3817	2.1732	2.1732	0.000	0.001369	0.001369	0.000
36.4067	2.1736	2.1736	0.000	0.001475	0.001475	0.000
36.4317	2.1740	2.1740	0.000	0.001577	0.001577	0.000
36.4566	2.1745	2.1745	0.000	0.001674	0.001674	0.000
36.4816	2.1749	2.1749	0.000	0.001766	0.001766	0.000
36.5066	2.1753	2.1753	0.000	0.001855	0.001854	0.005
36.5316	2.1757	2.1757	0.000	0.001938	0.001938	0.000
36.5566	2.1761	2.1761	0.000	0.002017	0.002017	0.000
36.5816	2.1765	2.1765	0.000	0.002092	0.002092	0.005
36.6066	2.1769	2.1769	0.000	0.002163	0.002163	0.005
36.6316	2.1773	2.1772	0.005	0.002229	0.002229	0.004
36.6566	2.1776	2.1776	0.000	0.002291	0.002291	0.000
36.6816	2.1779	2.1779	0.000	0.002348	0.002348	0.000
36.7066	2.1783	2.1783	0.000	0.002401	0.002401	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
36.7316	2.1787	2.1787	0.000	0.002450	0.002450	0.004
36.7566	2.1791	2.1791	0.000	0.002495	0.002495	0.004
36.7816	2.1795	2.1795	0.000	0.002536	0.002536	0.004
36.8066	2.1799	2.1799	0.000	0.002572	0.002572	0.000
36.8316	2.1803	2.1803	0.000	0.002604	0.002604	0.000
36.8565	2.1807	2.1807	0.000	0.002633	0.002633	0.004
36.8815	2.1812	2.1812	0.000	0.002657	0.002657	0.004
36.9065	2.1816	2.1816	0.000	0.002677	0.002677	0.004
36.9315	2.1820	2.1820	0.000	0.002693	0.002693	0.004
36.9565	2.1824	2.1823	0.005	0.002706	0.002706	0.004
36.9815	2.1827	2.1827	0.000	0.002715	0.002715	0.000
37.0065	2.1831	2.1831	0.000	0.002720	0.002720	0.004
37.0315	2.1835	2.1835	0.000	0.002721	0.002721	0.000
37.0565	2.1838	2.1838	0.000	0.002720	0.002719	0.004
37.0815	2.1842	2.1842	0.000	0.002714	0.002714	0.000
37.1065	2.1846	2.1845	0.005	0.002706	0.002706	0.004
37.1315	2.1849	2.1849	0.000	0.002694	0.002694	0.000
37.1565	2.1853	2.1853	0.000	0.002679	0.002679	0.000
37.1815	2.1856	2.1856	0.000	0.002661	0.002661	0.004
37.2065	2.1860	2.1859	0.005	0.002640	0.002640	0.000
37.2315	2.1863	2.1863	0.000	0.002617	0.002617	0.000
37.2565	2.1866	2.1866	0.000	0.002591	0.002591	0.000
37.2814	2.1869	2.1869	0.000	0.002562	0.002562	0.000
37.3064	2.1872	2.1872	0.000	0.002530	0.002530	0.000
37.3314	2.1875	2.1875	0.000	0.002496	0.002496	0.004
37.3564	2.1878	2.1878	0.000	0.002460	0.002460	0.000
37.3814	2.1881	2.1881	0.000	0.002421	0.002421	0.000
37.4064	2.1884	2.1884	0.000	0.002380	0.002380	0.000
37.4314	2.1886	2.1886	0.000	0.002338	0.002338	0.004
37.4564	2.1889	2.1889	0.000	0.002293	0.002293	0.004
37.4814	2.1891	2.1891	0.000	0.002246	0.002246	0.000
37.5064	2.1894	2.1894	0.000	0.002197	0.002197	0.005
37.5314	2.1896	2.1896	0.000	0.002147	0.002147	0.000
37.5564	2.1898	2.1898	0.000	0.002096	0.002096	0.005
37.5814	2.1901	2.1901	0.000	0.002043	0.002042	0.005
37.6064	2.1903	2.1903	0.000	0.001988	0.001988	0.005
37.6314	2.1905	2.1905	0.000	0.001932	0.001932	0.000
37.6564	2.1907	2.1907	0.000	0.001876	0.001875	0.005
37.6813	2.1908	2.1908	0.000	0.001818	0.001818	0.000
37.7063	2.1910	2.1910	0.000	0.001759	0.001759	0.000
37.7313	2.1912	2.1912	0.000	0.001699	0.001699	0.006

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
37.7563	2.1914	2.1914	0.000	0.001639	0.001639	0.000
37.7813	2.1916	2.1916	0.000	0.001578	0.001578	0.006
37.8063	2.1917	2.1917	0.000	0.001516	0.001516	0.000
37.8313	2.1919	2.1918	0.005	0.001454	0.001454	0.000
37.8563	2.1920	2.1920	0.000	0.001392	0.001392	0.000
37.8813	2.1921	2.1920	0.005	0.001329	0.001329	0.008
37.9063	2.1921	2.1921	0.000	0.001266	0.001266	0.000
37.9313	2.1922	2.1922	0.000	0.001202	0.001202	0.000
37.9563	2.1923	2.1923	0.000	0.001137	0.001137	0.000
37.9813	2.1923	2.1923	0.000	0.001073	0.001073	0.000
38.0063	2.1924	2.1924	0.000	0.001009	0.001009	0.000
38.0313	2.1924	2.1924	0.000	0.000946	0.000946	0.001
38.0563	2.1925	2.1924	0.005	0.000882	0.000882	0.000
38.0812	2.1925	2.1925	0.000	0.000820	0.000820	0.001
38.1062	2.1925	2.1925	0.000	0.000757	0.000757	0.000
38.1312	2.1926	2.1926	0.000	0.000695	0.000695	0.000
38.1562	2.1926	2.1926	0.000	0.000634	0.000634	0.006
38.1812	2.1927	2.1927	0.000	0.000574	0.000574	0.000
38.2062	2.1927	2.1927	0.000	0.000514	0.000514	0.000
38.2312	2.1927	2.1927	0.000	0.000455	0.000455	0.007
38.2562	2.1927	2.1927	0.000	0.000396	0.000396	0.000
38.2812	2.1927	2.1927	0.000	0.000339	0.000339	0.000
38.3062	2.1926	2.1926	0.000	0.000283	0.000283	0.000
38.3312	2.1926	2.1926	0.000	0.000228	0.000228	0.000
38.3562	2.1926	2.1926	0.000	0.000174	0.000174	0.000
38.3812	2.1925	2.1925	0.000	0.000121	0.000121	0.000
38.4062	2.1924	2.1924	0.000	0.000070	0.000070	0.000
38.4312	2.1923	2.1923	0.000	0.000020	0.000020	0.000
38.4562	2.1922	2.1922	0.000	-0.000028	-0.000028	0.000
38.4812	2.1922	2.1921	0.005	-0.000076	-0.000076	0.000
38.5061	2.1921	2.1921	0.000	-0.000122	-0.000122	0.000
38.5311	2.1920	2.1920	0.000	-0.000168	-0.000168	0.000
38.5561	2.1920	2.1920	0.000	-0.000212	-0.000212	0.000
38.5811	2.1919	2.1919	0.000	-0.000255	-0.000254	0.004
38.6061	2.1919	2.1918	0.005	-0.000296	-0.000296	0.007
38.6311	2.1918	2.1917	0.005	-0.000336	-0.000336	0.000
38.6561	2.1916	2.1916	0.000	-0.000375	-0.000375	0.000
38.6811	2.1915	2.1915	0.000	-0.000413	-0.000413	0.000
38.7061	2.1913	2.1913	0.000	-0.000449	-0.000449	0.000
38.7311	2.1912	2.1912	0.000	-0.000484	-0.000484	0.000
38.7561	2.1910	2.1910	0.000	-0.000518	-0.000518	0.000

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USING
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNAMIC LOAD SET)
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pump)

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
38.7811	2.1909	2.1909	0.000	-0.000550	-0.000550	0.000
38.8061	2.1907	2.1907	0.000	-0.000580	-0.000580	0.003
38.8311	2.1906	2.1906	0.000	-0.000609	-0.000609	0.002
38.8561	2.1905	2.1905	0.000	-0.000636	-0.000636	0.003
38.8811	2.1904	2.1904	0.000	-0.000662	-0.000662	0.003
38.906	2.1903	2.1902	0.005	-0.000687	-0.000687	0.003
38.931	2.1901	2.1901	0.000	-0.000711	-0.000711	0.003
38.956	2.1900	2.1900	0.000	-0.000733	-0.000733	0.004
38.981	2.1899	2.1899	0.000	-0.000754	-0.000754	0.004
39.006	2.1897	2.1897	0.000	-0.000773	-0.000773	0.005
39.031	2.1896	2.1896	0.000	-0.000790	-0.000790	0.005
39.056	2.1894	2.1894	0.000	-0.000806	-0.000806	0.005
39.081	2.1893	2.1893	0.000	-0.000821	-0.000821	0.006
39.106	2.1892	2.1891	0.005	-0.000834	-0.000834	0.006
39.131	2.1890	2.1890	0.000	-0.000846	-0.000846	0.006
39.156	2.1889	2.1889	0.000	-0.000857	-0.000857	0.005
39.181	2.1888	2.1887	0.005	-0.000866	-0.000866	0.002
39.206	2.1886	2.1886	0.000	-0.000874	-0.000874	0.002
39.231	2.1885	2.1885	0.000	-0.000880	-0.000880	0.002
39.256	2.1884	2.1884	0.000	-0.000886	-0.000886	0.002
39.281	2.1882	2.1882	0.000	-0.000890	-0.000890	0.002
39.306	2.1881	2.1881	0.000	-0.000893	-0.000893	0.002
39.3309	2.1880	2.1880	0.000	-0.000895	-0.000895	0.002
39.3559	2.1878	2.1878	0.000	-0.000896	-0.000896	0.002
39.3809	2.1877	2.1877	0.000	-0.000895	-0.000895	0.001
39.4059	2.1876	2.1876	0.000	-0.000894	-0.000894	0.000
39.4309	2.1874	2.1874	0.000	-0.000891	-0.000891	0.001
39.4559	2.1873	2.1873	0.000	-0.000888	-0.000888	0.000
39.4809	2.1872	2.1872	0.000	-0.000883	-0.000883	0.000
39.5059	2.1871	2.1871	0.000	-0.000878	-0.000878	0.000
39.5309	2.1870	2.1870	0.000	-0.000871	-0.000871	0.000
39.5559	2.1869	2.1869	0.000	-0.000864	-0.000864	0.000
39.5809	2.1868	2.1868	0.000	-0.000856	-0.000856	0.001
39.6059	2.1867	2.1867	0.000	-0.000846	-0.000846	0.002
39.6309	2.1866	2.1866	0.000	-0.000836	-0.000836	0.001
39.6559	2.1865	2.1865	0.000	-0.000825	-0.000825	0.002
39.6809	2.1864	2.1864	0.000	-0.000814	-0.000814	0.004
39.7059	2.1863	2.1863	0.000	-0.000801	-0.000801	0.004
39.7308	2.1862	2.1862	0.000	-0.000788	-0.000788	0.004
39.7558	2.1861	2.1861	0.000	-0.000775	-0.000775	0.004
39.7808	2.1861	2.1861	0.000	-0.000760	-0.000760	0.005

TABLE III (Cont'd)
VALIDATION RESULTS FOR SAFEGARD TEST USIN
GENERATOR, CMOTOR & ASSOCIATED CONTROL
FOR PSS/E VERSION 21 VS 24

(IP2 DIESEL GENERATOR 21 NORMAL DYNMAIC LOAD SE
TI INTERACTIVE PLOTTING PROGRAM-PSSPLT MON, MAR
NOTE: * No var Load until 3 second (starting of SI Pum

Time (second)	EFD-DG21(PU)			SPDN-DG21 (PU)		
	Version 21	Version 24	Delta (%)	Version 21	Version 24	Delta (%)
39.8058	2.1860	2.1860	0.000	-0.000746	-0.000746	0.005
39.8308	2.1859	2.1859	0.000	-0.000730	-0.000730	0.008
39.8558	2.1858	2.1858	0.000	-0.000714	-0.000714	0.007
39.8808	2.1858	2.1858	0.000	-0.000697	-0.000697	0.007
39.9058	2.1857	2.1857	0.000	-0.000680	-0.000680	0.001
39.9308	2.1857	2.1857	0.000	-0.000663	-0.000663	0.000
39.9558	2.1856	2.1856	0.000	-0.000645	-0.000645	0.000
39.9808	2.1856	2.1856	0.000	-0.000627	-0.000627	0.000
40.0058	2.1855	2.1855	0.000	-0.000608	-0.000608	0.002

Max Delta
(%)

0.010

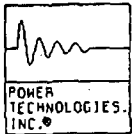
SVR-PSS/E-24

REVISION 0
AUGUST 1998

APPENDIX A

IMD PROGRAM FOR INDUCTION MOTOR EQUIVALENT CIRCUIT PARAMETERS VALIDATION FOR PSS/E VERSION 21 AND VERSION 24

IP2DGSVR.DOC



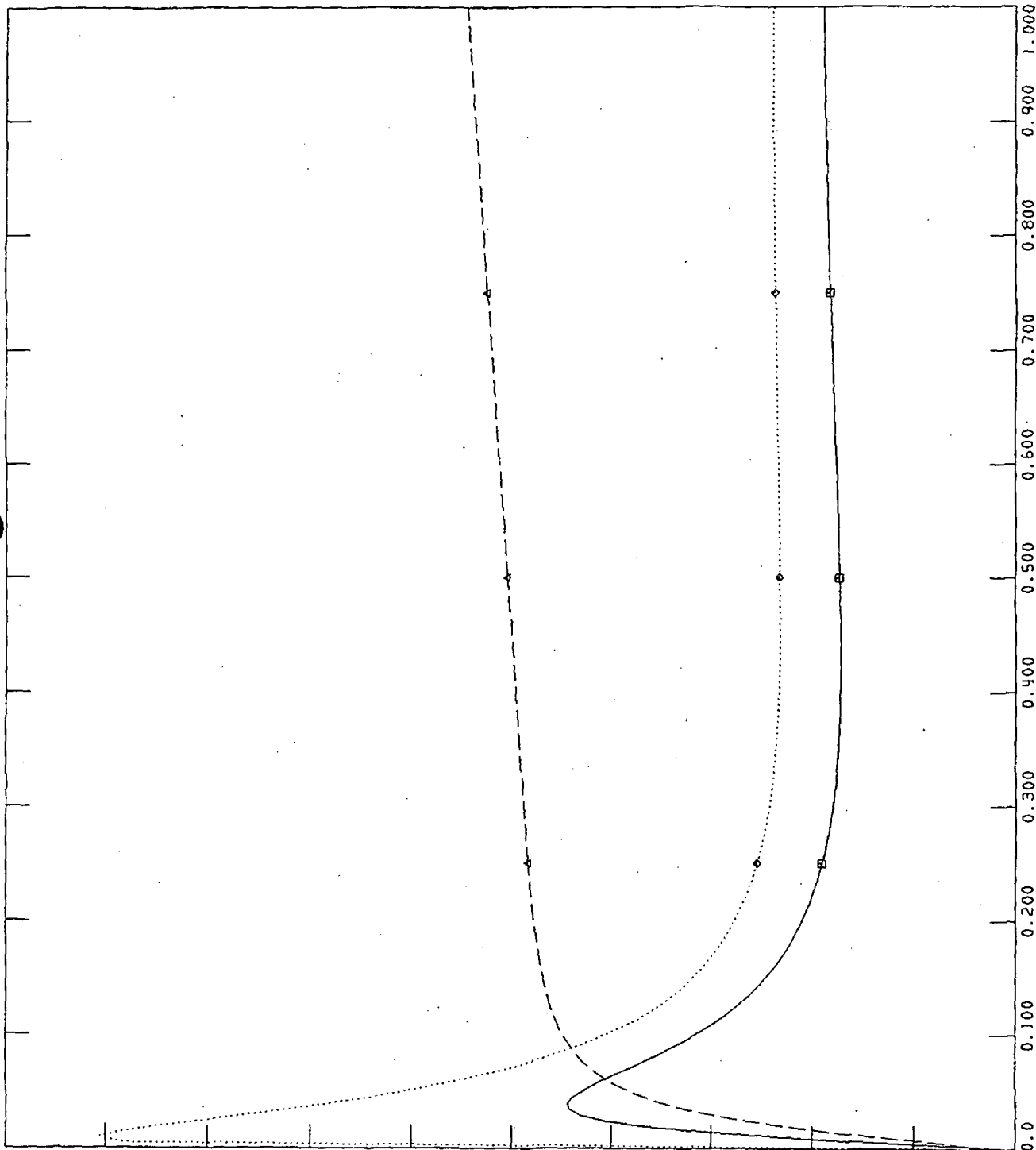
INDUCTION MOTOR CURVES FROM V=4

ETERM	TYPE	RA	LA	LM	RJ	LJ	R2	L2
1.0000	2	.0120	.0750	4.0000	.0600	.0800	.0090	.0680

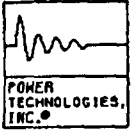
1.000 POWER FACTOR 0.0

10.00 CURRENT 0.0

5.000 TORQUE 0.0

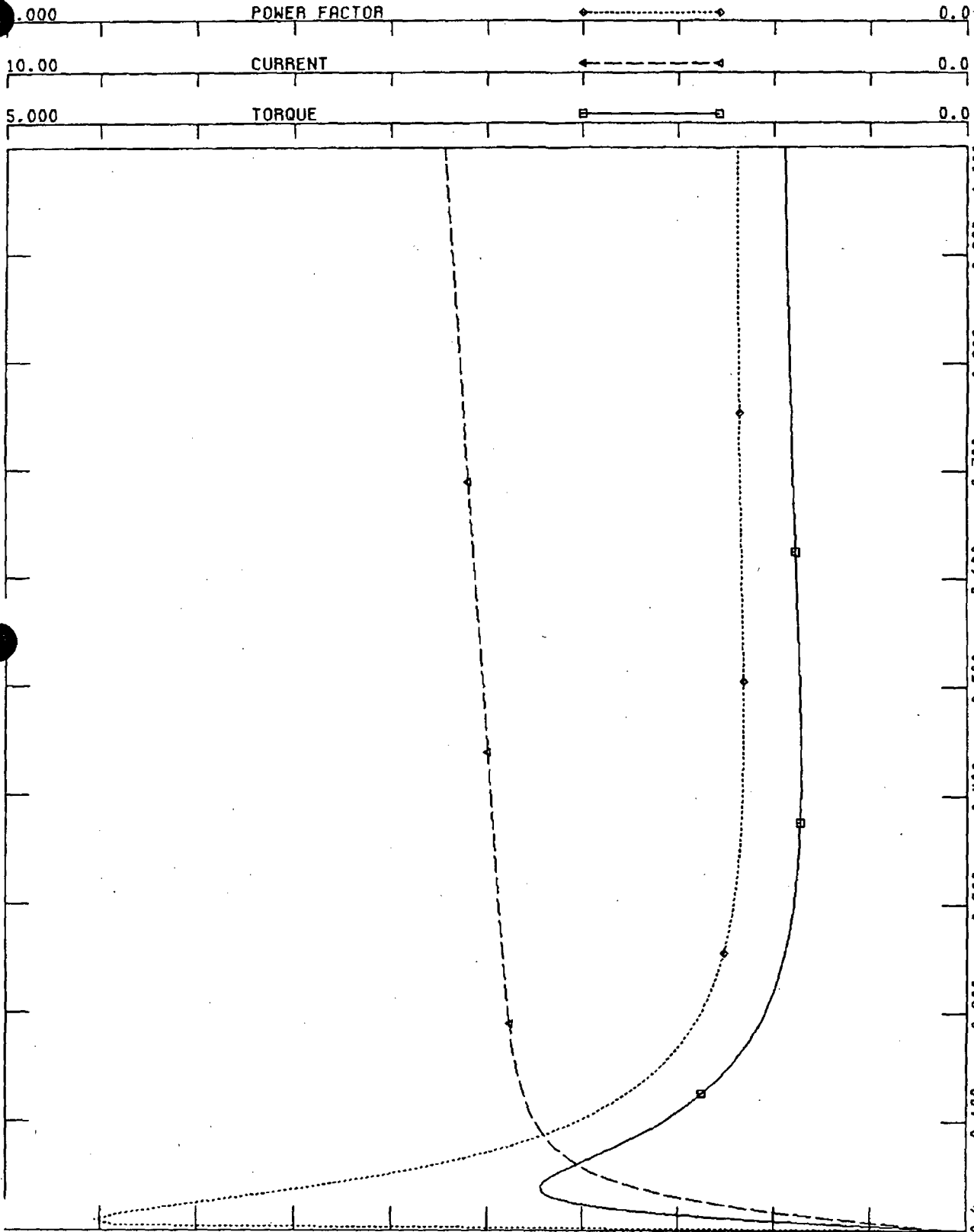


M, M-S 16 1998 16:15



INDUCTION MOTOR CURVES FROM USER

ETERM	TYPE	RA	LA	LM	R1	L1	R2	L2
1.0000	2	0.0120	0.0750	4.0000	0.0500	0.0800	0.0090	0.0580



MON, MAR 16 1998 13:02

TORQUE SPEED CURVE FROM VE

Calculation No. FEX-00083-00 Rev. 0

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ETERM TYPE	RA	LA	LM	R1	L1			
1.000	2	.0120	.0750	4.0000	.0600	.0800	.0000	.0080
SPEED	SLIP	CURRENT	TORQUE	PWR FACT	Y - MOTOR	Y - SYSTEM		
.0000	1.0000	5.4377	.9409	.2383	1.2957	-5.2811	1.1392	-.53
.0200	.9800	5.4226	.9395	.2383	1.2924	-5.2664	1.1392	-.53
.0450	.9550	5.4036	.9375	.2383	1.2879	-5.2478	1.1392	-.53
.0700	.9300	5.3843	.9352	.2383	1.2831	-5.2292	1.1392	-.53
.0950	.9050	5.3648	.9326	.2382	1.2780	-5.2104	1.1392	-.53
.1200	.8800	5.3451	.9296	.2381	1.2725	-5.1914	1.1392	-.53
.1450	.8550	5.3252	.9263	.2379	1.2666	-5.1724	1.1392	-.53
.1700	.8300	5.3052	.9227	.2376	1.2605	-5.1533	1.1392	-.53
.1950	.8050	5.2851	.9188	.2373	1.2540	-5.1342	1.1392	-.53
.2200	.7800	5.2649	.9146	.2369	1.2472	-5.1150	1.1392	-.53
.2450	.7550	5.2445	.9102	.2365	1.2402	-5.0958	1.1392	-.53
.2700	.7300	5.2241	.9055	.2360	1.2330	-5.0765	1.1392	-.53
.2950	.7050	5.2037	.9006	.2355	1.2255	-5.0573	1.1392	-.53
.3200	.6800	5.1832	.8955	.2350	1.2179	-5.0381	1.1392	-.53
.3450	.6550	5.1628	.8904	.2344	1.2102	-5.0190	1.1392	-.53
.3700	.6300	5.1424	.8852	.2338	1.2025	-4.9999	1.1392	-.53
.3950	.6050	5.1221	.8800	.2333	1.1949	-4.9808	1.1392	-.53
.4200	.5800	5.1019	.8750	.2327	1.1874	-4.9618	1.1392	-.53
.4450	.5550	5.0818	.8703	.2322	1.1802	-4.9429	1.1392	-.53
.4700	.5300	5.0619	.8660	.2318	1.1735	-4.9240	1.1392	-.53
.4950	.5050	5.0421	.8623	.2315	1.1673	-4.9051	1.1392	-.53
.5200	.4800	5.0225	.8593	.2314	1.1620	-4.8862	1.1392	-.53
.5450	.4550	5.0030	.8575	.2314	1.1578	-4.8672	1.1392	-.53
.5700	.4300	4.9837	.8570	.2318	1.1550	-4.8480	1.1392	-.53
.5950	.4050	4.9644	.8583	.2325	1.1540	-4.8284	1.1392	-.53
.6200	.3800	4.9452	.8618	.2336	1.1553	-4.8084	1.1392	-.53
.6450	.3550	4.9259	.8683	.2354	1.1594	-4.7875	1.1392	-.53
.6700	.3300	4.9064	.8784	.2379	1.1673	-4.7655	1.1392	-.53
.6950	.3050	4.8863	.8933	.2414	1.1798	-4.7417	1.1392	-.53
.7200	.2800	4.8652	.9142	.2463	1.1983	-4.7153	1.1392	-.53
.7450	.2550	4.8426	.9431	.2529	1.2245	-4.6852	1.1392	-.53
.7700	.2300	4.8174	.9825	.2617	1.2609	-4.6495	1.1392	-.53
.7950	.2050	4.7881	1.0358	.2738	1.3109	-4.6051	1.1392	-.53
.8200	.1800	4.7518	1.1081	.2902	1.3791	-4.5473	1.1392	-.53
.8450	.1550	4.7039	1.2069	.3130	1.4724	-4.4675	1.1392	-.53
.8700	.1300	4.6351	1.3431	.3454	1.6009	-4.3499	1.1392	-.53
.8950	.1050	4.5262	1.5323	.3929	1.7781	-4.1623	1.1392	-.53
.9200	.0800	4.3324	1.7913	.4654	2.0165	-3.8345	1.1392	-.53
.9450	.0550	3.9330	2.1011	.5814	2.2867	-3.1999	1.1392	-.53
.9700	.0300	2.9689	2.1593	.7629	2.2650	-1.9193	1.1392	-.53
.9950	.0050	.6817	.5964	.8830	.6020	-.3200	1.1392	-.53
1.0000	.0000	.2454	.0000	.0029	.0007	-.2454	1.1392	-.53

TORQUE SPEED CURVE FROM VERSION

Calculation No. FEX-00083-00 Rev. 0
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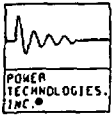
ETERM TYPE	RA	LA	LM	R1	L1	R2	L2
1.000 2	0.0120	0.0750	4.0000	0.0600	0.0800	0.0090	0.0680
SPEED	SLIP	CURRENT	TORQUE	PWR FACT	Y - MOTOR		
0.0000	1.0000	5.4377	0.9409	0.2383	1.2957	-5.2811	
0.0200	0.9800	5.4226	0.9395	0.2383	1.2924	-5.2664	
0.0450	0.9550	5.4036	0.9375	0.2383	1.2879	-5.2478	
0.0700	0.9300	5.3843	0.9352	0.2383	1.2831	-5.2292	
0.0950	0.9050	5.3648	0.9326	0.2382	1.2780	-5.2104	
0.1200	0.8800	5.3451	0.9296	0.2381	1.2725	-5.1914	
0.1450	0.8550	5.3252	0.9263	0.2379	1.2666	-5.1724	
0.1700	0.8300	5.3052	0.9227	0.2376	1.2605	-5.1533	
0.1950	0.8050	5.2851	0.9188	0.2373	1.2540	-5.1342	
0.2200	0.7800	5.2649	0.9146	0.2369	1.2472	-5.1150	
0.2450	0.7550	5.2445	0.9102	0.2365	1.2402	-5.0958	
0.2700	0.7300	5.2241	0.9055	0.2360	1.2330	-5.0765	
0.2950	0.7050	5.2037	0.9006	0.2355	1.2255	-5.0573	
0.3200	0.6800	5.1832	0.8955	0.2350	1.2179	-5.0381	
0.3450	0.6550	5.1628	0.8904	0.2344	1.2102	-5.0190	
0.3700	0.6300	5.1424	0.8852	0.2338	1.2025	-4.9999	
0.3950	0.6050	5.1221	0.8800	0.2333	1.1949	-4.9808	
0.4200	0.5800	5.1019	0.8750	0.2327	1.1874	-4.9618	
0.4450	0.5550	5.0818	0.8703	0.2322	1.1802	-4.9429	
0.4700	0.5300	5.0619	0.8660	0.2318	1.1735	-4.9240	
0.4950	0.5050	5.0421	0.8623	0.2315	1.1673	-4.9051	
0.5200	0.4800	5.0225	0.8593	0.2314	1.1620	-4.8862	
0.5450	0.4550	5.0030	0.8575	0.2314	1.1578	-4.8672	
0.5700	0.4300	4.9837	0.8570	0.2318	1.1550	-4.8480	
0.5950	0.4050	4.9644	0.8583	0.2325	1.1540	-4.8284	
0.6200	0.3800	4.9452	0.8618	0.2336	1.1553	-4.8084	
0.6450	0.3550	4.9259	0.8683	0.2354	1.1594	-4.7875	
0.6700	0.3300	4.9064	0.8784	0.2379	1.1673	-4.7655	
0.6950	0.3050	4.8863	0.8933	0.2414	1.1798	-4.7417	
0.7200	0.2800	4.8652	0.9142	0.2463	1.1983	-4.7153	
0.7450	0.2550	4.8426	0.9431	0.2529	1.2245	-4.6852	
0.7700	0.2300	4.8174	0.9825	0.2617	1.2609	-4.6495	
0.7950	0.2050	4.7881	1.0358	0.2738	1.3109	-4.6051	
0.8200	0.1800	4.7518	1.1081	0.2902	1.3791	-4.5473	
0.8450	0.1550	4.7039	1.2069	0.3130	1.4724	-4.4675	
0.8700	0.1300	4.6351	1.3431	0.3454	1.6009	-4.3499	
0.8950	0.1050	4.5262	1.5323	0.3929	1.7781	-4.1623	
0.9200	0.0800	4.3324	1.7913	0.4654	2.0165	-3.8345	
0.9450	0.0550	3.9330	2.1011	0.5814	2.2867	-3.1999	
0.9700	0.0300	2.9689	2.1593	0.7629	2.2650	-1.9193	
0.9950	0.0050	0.6817	0.5964	0.8830	0.6020	-0.3200	
1.0000	0.0000	0.2454	0.0000	0.0029	0.0007	-0.2454	

SVR-PSS/E-24

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AUGUST 1998

APPENDIX B

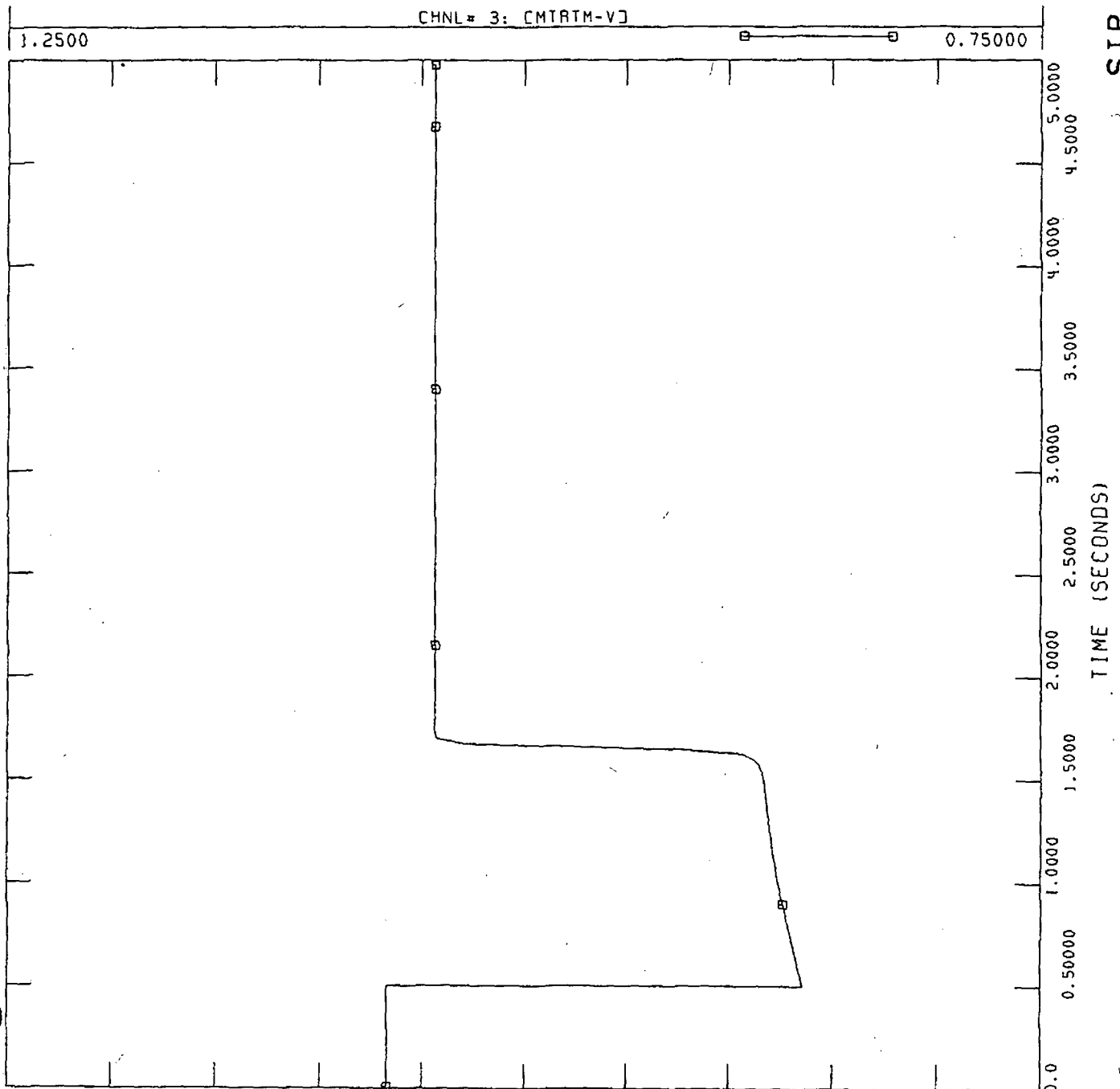
ION M OR MODEL AND MOTOR START SIMULATION VALIDATION FOR PSS/E VERSION 21 AND VERSION 24



INDIAN POINT SWP 34 STARTUP SIMULATION ILF
STARTUP OF SWP 34 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

FILE: C:\PSSE24W\VNV\sip21.out

Thu. Apr 09 1998 10:52
SIP 21 VOLTAGE (V24)



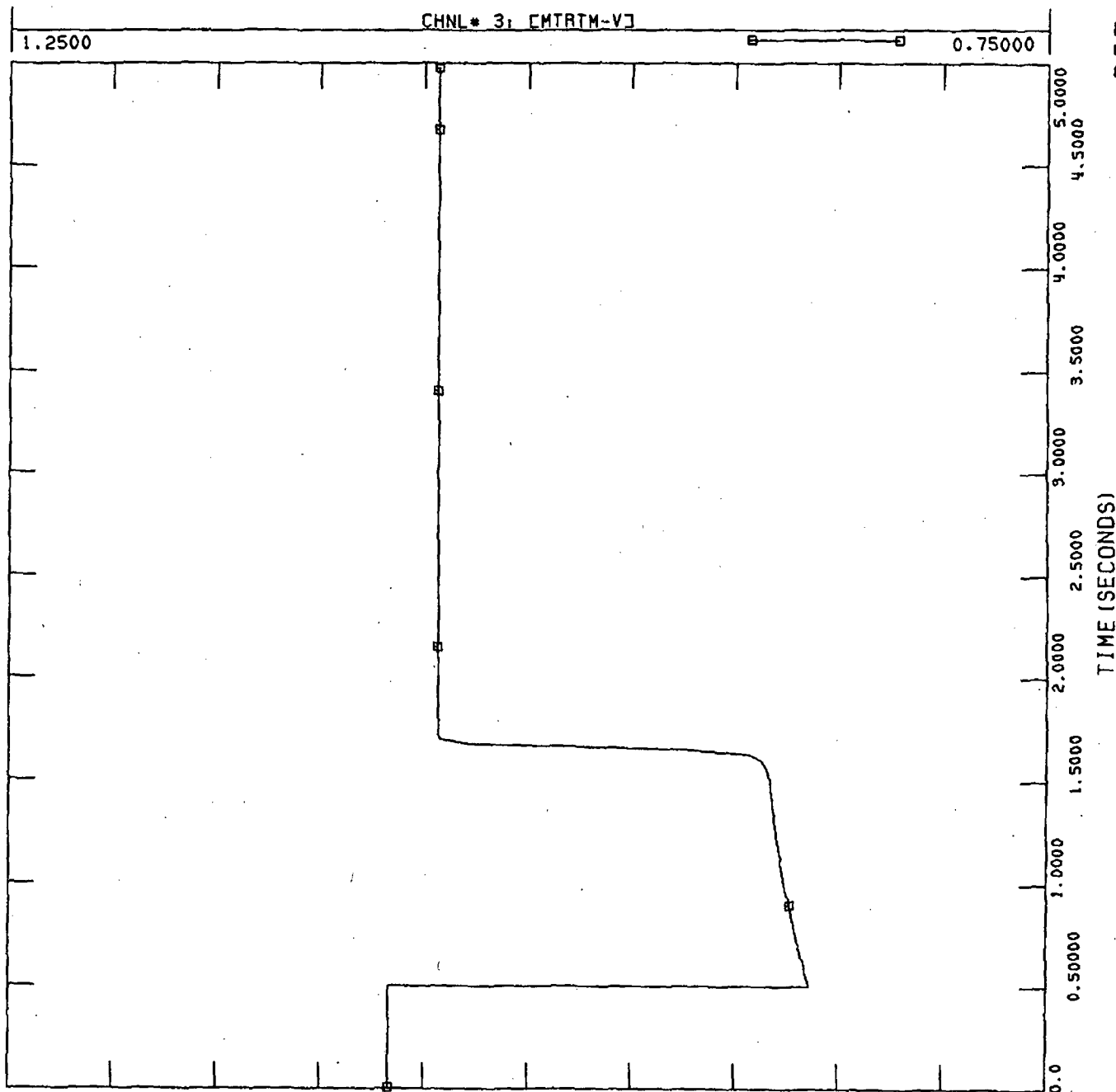


INDIAN POINT SWP 34 STARTUP SIMULATION (LF3)
STARTUP OF SWP 34 FROM BUS 5A WITH INFINITE

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 103 of 136
Appendix B, Page 3 of 19

FILE: SIP21.0UT

THU, APR 09 1998 10:11
SIP 21 VOLTAGE (V21)



SIP 21 STARTUP CASE OUTPUT FROM VERSION 24

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 104 of 136
Appendix B, Page 4 of 19

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT Thu, Apr 09 1998 10:55
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

CHANNEL #: 00001: S-VOLT
CHANNEL #: 00002: MBUS-VLT
CHANNEL #: 00003: MTRTM-V
CHANNEL #: 00004: MTR-DW
CHANNEL #: 00005: MTR-P

TIME	00001	00002	00003	00004	00005
.0083	.97819	.97825	1.0674	-1.0000	.00000
.0333	.97819	.97825	1.0674	-1.0000	.00000
.0583	.97819	.97825	1.0674	-1.0000	.00000
.0833	.97819	.97825	1.0674	-1.0000	.00000
.1083	.97819	.97825	1.0674	-1.0000	.00000
.1333	.97819	.97825	1.0674	-1.0000	.00000
.1583	.97819	.97825	1.0674	-1.0000	.00000
.1833	.97819	.97825	1.0674	-1.0000	.00000
.2083	.97819	.97825	1.0674	-1.0000	.00000
.2333	.97819	.97825	1.0674	-1.0000	.00000
.2583	.97819	.97825	1.0674	-1.0000	.00000
.2833	.97819	.97825	1.0674	-1.0000	.00000
.3083	.97819	.97825	1.0674	-1.0000	.00000
.3333	.97819	.97825	1.0674	-1.0000	.00000
.3583	.97819	.97825	1.0674	-1.0000	.00000
.3833	.97819	.97825	1.0674	-1.0000	.00000
.4083	.97819	.97825	1.0674	-1.0000	.00000
.4333	.97819	.97825	1.0674	-1.0000	.00000
.4583	.97819	.97825	1.0674	-1.0000	.00000
.4833	.97819	.97825	1.0674	-1.0000	.00000
.5000	.97819	.97825	1.0674	-1.0000	.00000
.5000	.97662	.92167	.86409	-.99152	.30925
.5250	.97662	.92183	.86467	-.96611	.30862
.5500	.97663	.92199	.86526	-.94076	.30791
.5750	.97663	.92216	.86586	-.91551	.30712
.6000	.97664	.92232	.86647	-.89039	.30626
.6250	.97664	.92249	.86708	-.86543	.30533
.6500	.97665	.92266	.86770	-.84066	.30432
.6750	.97665	.92282	.86832	-.81612	.30326
.7000	.97666	.92299	.86893	-.79183	.30213
.7250	.97666	.92315	.86955	-.76782	.30096
.7500	.97666	.92332	.87016	-.74413	.29974
.7750	.97667	.92348	.87077	-.72076	.29850
.8000	.97667	.92364	.87137	-.69775	.29723
.8250	.97668	.92379	.87196	-.67511	.29595
.8500	.97668	.92395	.87254	-.65287	.29468
.8750	.97668	.92410	.87311	-.63102	.29342
.9000	.97669	.92425	.87367	-.60959	.29220
.9250	.97669	.92439	.87422	-.58859	.29102
.9500	.97670	.92453	.87475	-.56801	.28990
.9750	.97670	.92467	.87527	-.54787	.28885
1.0000	.97670	.92481	.87578	-.52816	.28789
1.0250	.97671	.92494	.87626	-.50888	.28705
1.0500	.97671	.92506	.87673	-.49002	.28632
1.0750	.97671	.92519	.87719	-.47158	.28574
1.1000	.97672	.92531	.87762	-.45354	.28532
1.1250	.97672	.92543	.87805	-.43589	.28508
1.1500	.97672	.92555	.87845	-.41861	.28504
1.1750	.97673	.92566	.87884	-.40169	.28522
1.2000	.97673	.92578	.87921	-.38510	.28566

1.2250	.97673	.92589	.87957	-.36881	.28637
1.2500	.97674	.92600	.87992	-.35279	.28740
1.2750	.97674	.92612	.88025	-.33701	.28878
1.3000	.97674	.92623	.88058	-.32143	.29056
1.3250	.97675	.92635	.88089	-.30600	.29280
1.3500	.97675	.92647	.88120	-.29067	.29558
1.3750	.97676	.92660	.88150	-.27538	.29900
1.4000	.97676	.92673	.88180	-.26006	.30319
1.4250	.97677	.92688	.88211	-.24462	.30832
1.4500	.97677	.92705	.88243	-.22893	.31466
1.4750	.97678	.92724	.88278	-.21286	.32256
1.5000	.97679	.92747	.88318	-.19620	.33259
1.5250	.97680	.92777	.88367	-.17867	.34566
1.5500	.97682	.92817	.88434	-.15985	.36335
1.5750	.97684	.92876	.88540	-.13904	.38873
1.6000	.97688	.92980	.88745	-.11493	.42866
1.6250	.97697	.93222	.89306	-.84632E-01	.50220
1.6500	.97733	.94336	.92653	-.40615E-01	.64956
1.6750	.97802	.96977	1.0282	-.81229E-02	.32064
1.7000	.97807	.97274	1.0426	-.44759E-02	.18827
1.7250	.97808	.97291	1.0435	-.42318E-02	.17861
1.7500	.97808	.97292	1.0436	-.42162E-02	.17797
1.7750	.97808	.97293	1.0436	-.42150E-02	.17794
1.8000	.97808	.97293	1.0436	-.42149E-02	.17793
1.8250	.97808	.97293	1.0436	-.42148E-02	.17793
1.8500	.97808	.97293	1.0436	-.42148E-02	.17793
1.8750	.97808	.97293	1.0436	-.42148E-02	.17793
1.9000	.97808	.97293	1.0436	-.42148E-02	.17793
1.9250	.97808	.97293	1.0436	-.42148E-02	.17793
1.9500	.97808	.97293	1.0436	-.42148E-02	.17793
1.9750	.97808	.97293	1.0436	-.42148E-02	.17793
2.0000	.97808	.97293	1.0436	-.42148E-02	.17793
2.0250	.97808	.97293	1.0436	-.42148E-02	.17793
2.0500	.97808	.97293	1.0436	-.42148E-02	.17793
2.0750	.97808	.97293	1.0436	-.42148E-02	.17793
2.1000	.97808	.97293	1.0436	-.42148E-02	.17793
2.1250	.97808	.97293	1.0436	-.42148E-02	.17793
2.1500	.97808	.97293	1.0436	-.42148E-02	.17793
2.1750	.97808	.97293	1.0436	-.42148E-02	.17793
2.2000	.97808	.97293	1.0436	-.42148E-02	.17793
2.2250	.97808	.97293	1.0436	-.42148E-02	.17793
2.2500	.97808	.97293	1.0436	-.42148E-02	.17793
2.2750	.97808	.97293	1.0436	-.42148E-02	.17793
2.3000	.97808	.97293	1.0436	-.42148E-02	.17793
2.3250	.97808	.97293	1.0436	-.42148E-02	.17793
2.3500	.97808	.97293	1.0436	-.42148E-02	.17793
2.3750	.97808	.97293	1.0436	-.42148E-02	.17793
2.4000	.97808	.97293	1.0436	-.42148E-02	.17793
2.4250	.97808	.97293	1.0436	-.42148E-02	.17793
2.4500	.97808	.97293	1.0436	-.42148E-02	.17793
2.4750	.97808	.97293	1.0436	-.42148E-02	.17793
2.5000	.97808	.97293	1.0436	-.42148E-02	.17793
2.5250	.97808	.97293	1.0436	-.42148E-02	.17793
2.5500	.97808	.97293	1.0436	-.42148E-02	.17793
2.5750	.97808	.97293	1.0436	-.42148E-02	.17793
2.6000	.97808	.97293	1.0436	-.42148E-02	.17793
2.6250	.97808	.97293	1.0436	-.42148E-02	.17793
2.6500	.97808	.97293	1.0436	-.42148E-02	.17793
2.6750	.97808	.97293	1.0436	-.42148E-02	.17793
2.7000	.97808	.97293	1.0436	-.42148E-02	.17793

2.7250	.97808	.97293	1.0436	-.42148E-02	.17793
2.7500	.97808	.97293	1.0436	-.42148E-02	.17793
2.7750	.97808	.97293	1.0436	-.42148E-02	.17793
2.8000	.97808	.97293	1.0436	-.42148E-02	.17793
2.8250	.97808	.97293	1.0436	-.42148E-02	.17793
2.8500	.97808	.97293	1.0436	-.42148E-02	.17793
2.8750	.97808	.97293	1.0436	-.42148E-02	.17793
2.9000	.97808	.97293	1.0436	-.42148E-02	.17793
2.9250	.97808	.97293	1.0436	-.42148E-02	.17793
2.9500	.97808	.97293	1.0436	-.42148E-02	.17793
2.9750	.97808	.97293	1.0436	-.42148E-02	.17793
3.0000	.97808	.97293	1.0436	-.42148E-02	.17793
3.0250	.97808	.97293	1.0436	-.42148E-02	.17793
3.0500	.97808	.97293	1.0436	-.42148E-02	.17793
3.0750	.97808	.97293	1.0436	-.42148E-02	.17793
3.1000	.97808	.97293	1.0436	-.42148E-02	.17793
3.1250	.97808	.97293	1.0436	-.42148E-02	.17793
3.1500	.97808	.97293	1.0436	-.42148E-02	.17793
3.1750	.97808	.97293	1.0436	-.42148E-02	.17793
3.2000	.97808	.97293	1.0436	-.42148E-02	.17793
3.2250	.97808	.97293	1.0436	-.42148E-02	.17793
3.2500	.97808	.97293	1.0436	-.42148E-02	.17793
3.2750	.97808	.97293	1.0436	-.42148E-02	.17793
3.3000	.97808	.97293	1.0436	-.42148E-02	.17793
3.3250	.97808	.97293	1.0436	-.42148E-02	.17793
3.3500	.97808	.97293	1.0436	-.42148E-02	.17793
3.3750	.97808	.97293	1.0436	-.42148E-02	.17793
3.4000	.97808	.97293	1.0436	-.42148E-02	.17793
3.4250	.97808	.97293	1.0436	-.42148E-02	.17793
3.4500	.97808	.97293	1.0436	-.42148E-02	.17793
3.4750	.97808	.97293	1.0436	-.42148E-02	.17793
3.5000	.97808	.97293	1.0436	-.42148E-02	.17793
3.5250	.97808	.97293	1.0436	-.42148E-02	.17793
3.5500	.97808	.97293	1.0436	-.42148E-02	.17793
3.5750	.97808	.97293	1.0436	-.42148E-02	.17793
3.6000	.97808	.97293	1.0436	-.42148E-02	.17793
3.6250	.97808	.97293	1.0436	-.42148E-02	.17793
3.6500	.97808	.97293	1.0436	-.42148E-02	.17793
3.6750	.97808	.97293	1.0436	-.42148E-02	.17793
3.7000	.97808	.97293	1.0436	-.42148E-02	.17793
3.7250	.97808	.97293	1.0436	-.42148E-02	.17793
3.7500	.97808	.97293	1.0436	-.42148E-02	.17793
3.7750	.97808	.97293	1.0436	-.42148E-02	.17793
3.8000	.97808	.97293	1.0436	-.42148E-02	.17793
3.8250	.97808	.97293	1.0436	-.42148E-02	.17793
3.8500	.97808	.97293	1.0436	-.42148E-02	.17793
3.8750	.97808	.97293	1.0436	-.42148E-02	.17793
3.9000	.97808	.97293	1.0436	-.42148E-02	.17793
3.9250	.97808	.97293	1.0436	-.42148E-02	.17793
3.9500	.97808	.97293	1.0436	-.42148E-02	.17793
3.9750	.97808	.97293	1.0436	-.42148E-02	.17793
4.0000	.97808	.97293	1.0436	-.42148E-02	.17793
4.0250	.97808	.97293	1.0436	-.42148E-02	.17793
4.0500	.97808	.97293	1.0436	-.42148E-02	.17793
4.0750	.97808	.97293	1.0436	-.42148E-02	.17793
4.1000	.97808	.97293	1.0436	-.42148E-02	.17793
4.1250	.97808	.97293	1.0436	-.42148E-02	.17793
4.1500	.97808	.97293	1.0436	-.42148E-02	.17793
4.1750	.97808	.97293	1.0436	-.42148E-02	.17793
4.2000	.97808	.97293	1.0436	-.42148E-02	.17793

4.2250	.97808	.97293	1.0436	-.42148E-02	.17793
4.2500	.97808	.97293	1.0436	-.42148E-02	.17793
4.2750	.97808	.97293	1.0436	-.42148E-02	.17793
4.3000	.97808	.97293	1.0436	-.42148E-02	.17793
4.3250	.97808	.97293	1.0436	-.42148E-02	.17793
4.3500	.97808	.97293	1.0436	-.42148E-02	.17793
4.3750	.97808	.97293	1.0436	-.42148E-02	.17793
4.4000	.97808	.97293	1.0436	-.42148E-02	.17793
4.4250	.97808	.97293	1.0436	-.42148E-02	.17793
4.4500	.97808	.97293	1.0436	-.42148E-02	.17793
4.4750	.97808	.97293	1.0436	-.42148E-02	.17793
4.5000	.97808	.97293	1.0436	-.42148E-02	.17793
4.5250	.97808	.97293	1.0436	-.42148E-02	.17793
4.5500	.97808	.97293	1.0436	-.42148E-02	.17793
4.5750	.97808	.97293	1.0436	-.42148E-02	.17793
4.6000	.97808	.97293	1.0436	-.42148E-02	.17793
4.6250	.97808	.97293	1.0436	-.42148E-02	.17793
4.6500	.97808	.97293	1.0436	-.42148E-02	.17793
4.6750	.97808	.97293	1.0436	-.42148E-02	.17793
4.7000	.97808	.97293	1.0436	-.42148E-02	.17793
4.7250	.97808	.97293	1.0436	-.42148E-02	.17793
4.7500	.97808	.97293	1.0436	-.42148E-02	.17793
4.7750	.97808	.97293	1.0436	-.42148E-02	.17793
4.8000	.97808	.97293	1.0436	-.42148E-02	.17793
4.8250	.97808	.97293	1.0436	-.42148E-02	.17793
4.8500	.97808	.97293	1.0436	-.42148E-02	.17793
4.8750	.97808	.97293	1.0436	-.42148E-02	.17793
4.9000	.97808	.97293	1.0436	-.42148E-02	.17793
4.9250	.97808	.97293	1.0436	-.42148E-02	.17793
4.9500	.97808	.97293	1.0436	-.42148E-02	.17793
4.9750	.97808	.97293	1.0436	-.42148E-02	.17793

PT1 INTERACTIVE PLOTTING PROGRAM--PSSPLT Thu, Apr 09 1998 10:55
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

CHANNEL #: 00006: MTR-Q

TIME	00006
.0083	.00000
.0333	.00000
.0583	.00000
.0833	.00000
.1083	.00000
.1333	.00000
.1583	.00000
.1833	.00000
.2083	.00000
.2333	.00000
.2583	.00000
.2833	.00000
.3083	.00000
.3333	.00000
.3583	.00000
.3833	.00000
.4083	.00000
.4333	.00000
.4583	.00000
.4833	.00000
.5000	.00000
.5000	1.2603
.5250	1.2575
.5500	1.2547
.5750	1.2519
.6000	1.2491
.6250	1.2463
.6500	1.2436
.6750	1.2408
.7000	1.2381
.7250	1.2353
.7500	1.2327
.7750	1.2300
.8000	1.2274
.8250	1.2249
.8500	1.2224
.8750	1.2199
.9000	1.2175
.9250	1.2151
.9500	1.2127
.9750	1.2104
1.0000	1.2082
1.0250	1.2059
1.0500	1.2037
1.0750	1.2015
1.1000	1.1993
1.1250	1.1972
1.1500	1.1950
1.1750	1.1927
1.2000	1.1905
1.2250	1.1881
1.2500	1.1857
1.2750	1.1832
1.3000	1.1805

1.3250	1.1777
1.3500	1.1746
1.3750	1.1712
1.4000	1.1674
1.4250	1.1631
1.4500	1.1581
1.4750	1.1522
1.5000	1.1448
1.5250	1.1354
1.5500	1.1225
1.5750	1.1033
1.6000	1.0707
1.6250	.99826
1.6500	.70508
1.6750	.14840
1.7000	.10615
1.7250	.10410
1.7500	.10397
1.7750	.10397
1.8000	.10397
1.8250	.10397
1.8500	.10397
1.8750	.10397
1.9000	.10397
1.9250	.10397
1.9500	.10397
1.9750	.10397
2.0000	.10397
2.0250	.10397
2.0500	.10397
2.0750	.10397
2.1000	.10397
2.1250	.10397
2.1500	.10397
2.1750	.10397
2.2000	.10397
2.2250	.10397
2.2500	.10397
2.2750	.10397
2.3000	.10397
2.3250	.10397
2.3500	.10397
2.3750	.10397
2.4000	.10397
2.4250	.10397
2.4500	.10397
2.4750	.10397
2.5000	.10397
2.5250	.10397
2.5500	.10397
2.5750	.10397
2.6000	.10397
2.6250	.10397
2.6500	.10397
2.6750	.10397
2.7000	.10397
2.7250	.10397
2.7500	.10397
2.7750	.10397
2.8000	.10397

2.8250	.10397
2.8500	.10397
2.8750	.10397
2.9000	.10397
2.9250	.10397
2.9500	.10397
2.9750	.10397
3.0000	.10397
3.0250	.10397
3.0500	.10397
3.0750	.10397
3.1000	.10397
3.1250	.10397
3.1500	.10397
3.1750	.10397
3.2000	.10397
3.2250	.10397
3.2500	.10397
3.2750	.10397
3.3000	.10397
3.3250	.10397
3.3500	.10397
3.3750	.10397
3.4000	.10397
3.4250	.10397
3.4500	.10397
3.4750	.10397
3.5000	.10397
3.5250	.10397
3.5500	.10397
3.5750	.10397
3.6000	.10397
3.6250	.10397
3.6500	.10397
3.6750	.10397
3.7000	.10397
3.7250	.10397
3.7500	.10397
3.7750	.10397
3.8000	.10397
3.8250	.10397
3.8500	.10397
3.8750	.10397
3.9000	.10397
3.9250	.10397
3.9500	.10397
3.9750	.10397
4.0000	.10397
4.0250	.10397
4.0500	.10397
4.0750	.10397
4.1000	.10397
4.1250	.10397
4.1500	.10397
4.1750	.10397
4.2000	.10397
4.2250	.10397
4.2500	.10397
4.2750	.10397
4.3000	.10397

4.3250	.10397
4.3500	.10397
4.3750	.10397
4.4000	.10397
4.4250	.10397
4.4500	.10397
4.4750	.10397
4.5000	.10397
4.5250	.10397
4.5500	.10397
4.5750	.10397
4.6000	.10397
4.6250	.10397
4.6500	.10397
4.6750	.10397
4.7000	.10397
4.7250	.10397
4.7500	.10397
4.7750	.10397
4.8000	.10397
4.8250	.10397
4.8500	.10397
4.8750	.10397
4.9000	.10397
4.9250	.10397
4.9500	.10397
4.9750	.10397

E

SIP 21 STARTUP CASE OUTPUT FROM VERSION 21

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

CHANNEL	00001	00002	00003	00004
TIME	S-VOLT	MBUS-VLT	MTRTM-V	MTR-DW
0.0083	0.97819	0.97825	1.0674	-1.0000
0.0333	0.97819	0.97825	1.0674	-1.0000
0.0583	0.97819	0.97825	1.0674	-1.0000
0.0833	0.97819	0.97825	1.0674	-1.0000
0.1083	0.97819	0.97825	1.0674	-1.0000
0.1333	0.97819	0.97825	1.0674	-1.0000
0.1583	0.97819	0.97825	1.0674	-1.0000
0.1833	0.97819	0.97825	1.0674	-1.0000
0.2083	0.97819	0.97825	1.0674	-1.0000
0.2333	0.97819	0.97825	1.0674	-1.0000
0.2583	0.97819	0.97825	1.0674	-1.0000
0.2833	0.97819	0.97825	1.0674	-1.0000
0.3083	0.97819	0.97825	1.0674	-1.0000
0.3333	0.97819	0.97825	1.0674	-1.0000
0.3583	0.97819	0.97825	1.0674	-1.0000
0.3833	0.97819	0.97825	1.0674	-1.0000
0.4083	0.97819	0.97825	1.0674	-1.0000
0.4333	0.97819	0.97825	1.0674	-1.0000
0.4583	0.97819	0.97825	1.0674	-1.0000
0.4833	0.97819	0.97825	1.0674	-1.0000
0.5000	0.97819	0.97825	1.0674	-1.0000
0.5000	0.97662	0.92167	0.86409	-0.99152
0.5250	0.97662	0.92183	0.86467	-0.96611
0.5500	0.97663	0.92199	0.86526	-0.94076
0.5750	0.97663	0.92216	0.86586	-0.91551
0.6000	0.97664	0.92232	0.86647	-0.89039
0.6250	0.97664	0.92249	0.86708	-0.86543
0.6500	0.97665	0.92266	0.86770	-0.84066
0.6750	0.97665	0.92282	0.86832	-0.81612
0.7000	0.97666	0.92299	0.86893	-0.79183
0.7250	0.97666	0.92315	0.86955	-0.76782
0.7500	0.97666	0.92332	0.87016	-0.74413
0.7750	0.97667	0.92348	0.87077	-0.72076
0.8000	0.97667	0.92364	0.87137	-0.69775
0.8250	0.97668	0.92379	0.87196	-0.67511
0.8500	0.97668	0.92395	0.87254	-0.65287
0.8750	0.97668	0.92410	0.87311	-0.63102
0.9000	0.97669	0.92425	0.87367	-0.60959
0.9250	0.97669	0.92439	0.87422	-0.58859
0.9500	0.97670	0.92453	0.87475	-0.56801
0.9750	0.97670	0.92467	0.87527	-0.54787
1.0000	0.97670	0.92481	0.87578	-0.52816
1.0250	0.97671	0.92494	0.87626	-0.50888
1.0500	0.97671	0.92506	0.87673	-0.49002
1.0750	0.97671	0.92519	0.87719	-0.47158
1.1000	0.97672	0.92531	0.87762	-0.45354
1.1250	0.97672	0.92543	0.87805	-0.43589
1.1500	0.97672	0.92555	0.87845	-0.41861
1.1750	0.97673	0.92566	0.87884	-0.40169
1.2000	0.97673	0.92578	0.87921	-0.38510
1.2250	0.97673	0.92589	0.87957	-0.36881
1.2500	0.97674	0.92600	0.87992	-0.35279
1.2750	0.97674	0.92612	0.88025	-0.33701

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PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU,

CHANNEL TIME	00001 S-VOLT	00002 MBUS-VLT	00003 MTRTM-V	00004 MTR-DW
1.3000	0.97674	0.92623	0.88058	-0.32143
1.3250	0.97675	0.92635	0.88089	-0.30600
1.3500	0.97675	0.92647	0.88120	-0.29067
1.3750	0.97676	0.92660	0.88150	-0.27538
1.4000	0.97676	0.92673	0.88180	-0.26006
1.4250	0.97677	0.92688	0.88211	-0.24462
1.4500	0.97677	0.92705	0.88243	-0.22893
1.4750	0.97678	0.92724	0.88278	-0.21286
1.5000	0.97679	0.92747	0.88318	-0.19620
1.5250	0.97680	0.92777	0.88367	-0.17867
1.5500	0.97682	0.92817	0.88434	-0.15985
1.5750	0.97684	0.92876	0.88540	-0.13904
1.6000	0.97688	0.92980	0.88745	-0.11493
1.6250	0.97697	0.93222	0.89306	-0.84631E-01
1.6500	0.97733	0.94336	0.92653	-0.40614E-01
1.6750	0.97802	0.96977	1.0282	-0.81228E-02
1.7000	0.97807	0.97274	1.0426	-0.44759E-02
1.7250	0.97808	0.97291	1.0435	-0.42318E-02
1.7500	0.97808	0.97292	1.0436	-0.42162E-02
1.7750	0.97808	0.97293	1.0436	-0.42150E-02
1.8000	0.97808	0.97293	1.0436	-0.42148E-02
1.8250	0.97808	0.97293	1.0436	-0.42148E-02
1.8500	0.97808	0.97293	1.0436	-0.42148E-02
1.8750	0.97808	0.97293	1.0436	-0.42148E-02
1.9000	0.97808	0.97293	1.0436	-0.42148E-02
1.9250	0.97808	0.97293	1.0436	-0.42148E-02
1.9500	0.97808	0.97293	1.0436	-0.42148E-02
1.9750	0.97808	0.97293	1.0436	-0.42148E-02
2.0000	0.97808	0.97293	1.0436	-0.42148E-02
2.0250	0.97808	0.97293	1.0436	-0.42148E-02
2.0500	0.97808	0.97293	1.0436	-0.42148E-02
2.0750	0.97808	0.97293	1.0436	-0.42148E-02
2.1000	0.97808	0.97293	1.0436	-0.42148E-02
2.1250	0.97808	0.97293	1.0436	-0.42148E-02
2.1500	0.97808	0.97293	1.0436	-0.42148E-02
2.1750	0.97808	0.97293	1.0436	-0.42148E-02
2.2000	0.97808	0.97293	1.0436	-0.42148E-02
2.2250	0.97808	0.97293	1.0436	-0.42148E-02
2.2500	0.97808	0.97293	1.0436	-0.42148E-02
2.2750	0.97808	0.97293	1.0436	-0.42148E-02
2.3000	0.97808	0.97293	1.0436	-0.42148E-02
2.3250	0.97808	0.97293	1.0436	-0.42148E-02
2.3500	0.97808	0.97293	1.0436	-0.42148E-02
2.3750	0.97808	0.97293	1.0436	-0.42148E-02
2.4000	0.97808	0.97293	1.0436	-0.42148E-02
2.4250	0.97808	0.97293	1.0436	-0.42148E-02
2.4500	0.97808	0.97293	1.0436	-0.42148E-02
2.4750	0.97808	0.97293	1.0436	-0.42148E-02
2.5000	0.97808	0.97293	1.0436	-0.42148E-02
2.5250	0.97808	0.97293	1.0436	-0.42148E-02
2.5500	0.97808	0.97293	1.0436	-0.42148E-02
2.5750	0.97808	0.97293	1.0436	-0.42148E-02
2.6000	0.97808	0.97293	1.0436	-0.42148E-02

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

Calculation No. FEX-00083-00 Rev. 0
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CHANNEL TIME	00001 S-VOLT	00002 MBUS-VLT	00003 MTRTM-V	00004 MTR-DW
2.6250	0.97808	0.97293	1.0436	-0.42148E-02
2.6500	0.97808	0.97293	1.0436	-0.42148E-02
2.6750	0.97808	0.97293	1.0436	-0.42148E-02
2.7000	0.97808	0.97293	1.0436	-0.42148E-02
2.7250	0.97808	0.97293	1.0436	-0.42148E-02
2.7500	0.97808	0.97293	1.0436	-0.42148E-02
2.7750	0.97808	0.97293	1.0436	-0.42148E-02
2.8000	0.97808	0.97293	1.0436	-0.42148E-02
2.8250	0.97808	0.97293	1.0436	-0.42148E-02
2.8500	0.97808	0.97293	1.0436	-0.42148E-02
2.8750	0.97808	0.97293	1.0436	-0.42148E-02
2.9000	0.97808	0.97293	1.0436	-0.42148E-02
2.9250	0.97808	0.97293	1.0436	-0.42148E-02
2.9500	0.97808	0.97293	1.0436	-0.42148E-02
2.9750	0.97808	0.97293	1.0436	-0.42148E-02
3.0000	0.97808	0.97293	1.0436	-0.42148E-02
3.0250	0.97808	0.97293	1.0436	-0.42148E-02
3.0500	0.97808	0.97293	1.0436	-0.42148E-02
3.0750	0.97808	0.97293	1.0436	-0.42148E-02
3.1000	0.97808	0.97293	1.0436	-0.42148E-02
3.1250	0.97808	0.97293	1.0436	-0.42148E-02
3.1500	0.97808	0.97293	1.0436	-0.42148E-02
3.1750	0.97808	0.97293	1.0436	-0.42148E-02
3.2000	0.97808	0.97293	1.0436	-0.42148E-02
3.2250	0.97808	0.97293	1.0436	-0.42148E-02
3.2500	0.97808	0.97293	1.0436	-0.42148E-02
3.2750	0.97808	0.97293	1.0436	-0.42148E-02
3.3000	0.97808	0.97293	1.0436	-0.42148E-02
3.3250	0.97808	0.97293	1.0436	-0.42148E-02
3.3500	0.97808	0.97293	1.0436	-0.42148E-02
3.3750	0.97808	0.97293	1.0436	-0.42148E-02
3.4000	0.97808	0.97293	1.0436	-0.42148E-02
3.4250	0.97808	0.97293	1.0436	-0.42148E-02
3.4500	0.97808	0.97293	1.0436	-0.42148E-02
3.4750	0.97808	0.97293	1.0436	-0.42148E-02
3.5000	0.97808	0.97293	1.0436	-0.42148E-02
3.5250	0.97808	0.97293	1.0436	-0.42148E-02
3.5500	0.97808	0.97293	1.0436	-0.42148E-02
3.5750	0.97808	0.97293	1.0436	-0.42148E-02
3.6000	0.97808	0.97293	1.0436	-0.42148E-02
3.6250	0.97808	0.97293	1.0436	-0.42148E-02
3.6500	0.97808	0.97293	1.0436	-0.42148E-02
3.6750	0.97808	0.97293	1.0436	-0.42148E-02
3.7000	0.97808	0.97293	1.0436	-0.42148E-02
3.7250	0.97808	0.97293	1.0436	-0.42148E-02
3.7500	0.97808	0.97293	1.0436	-0.42148E-02
3.7750	0.97808	0.97293	1.0436	-0.42148E-02
3.8000	0.97808	0.97293	1.0436	-0.42148E-02
3.8250	0.97808	0.97293	1.0436	-0.42148E-02
3.8500	0.97808	0.97293	1.0436	-0.42148E-02
3.8750	0.97808	0.97293	1.0436	-0.42148E-02
3.9000	0.97808	0.97293	1.0436	-0.42148E-02
3.9250	0.97808	0.97293	1.0436	-0.42148E-02

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU,

CHANNEL TIME	00001 S-VOLT	00002 MBUS-VLT	00003 MTRTM-V	00004 MTR-DW
3.9500	0.97808	0.97293	1.0436	-0.42148E-02
3.9750	0.97808	0.97293	1.0436	-0.42148E-02
4.0000	0.97808	0.97293	1.0436	-0.42148E-02
4.0250	0.97808	0.97293	1.0436	-0.42148E-02
4.0500	0.97808	0.97293	1.0436	-0.42148E-02
4.0750	0.97808	0.97293	1.0436	-0.42148E-02
4.1000	0.97808	0.97293	1.0436	-0.42148E-02
4.1250	0.97808	0.97293	1.0436	-0.42148E-02
4.1500	0.97808	0.97293	1.0436	-0.42148E-02
4.1750	0.97808	0.97293	1.0436	-0.42148E-02
4.2000	0.97808	0.97293	1.0436	-0.42148E-02
4.2250	0.97808	0.97293	1.0436	-0.42148E-02
4.2500	0.97808	0.97293	1.0436	-0.42148E-02
4.2750	0.97808	0.97293	1.0436	-0.42148E-02
4.3000	0.97808	0.97293	1.0436	-0.42148E-02
4.3250	0.97808	0.97293	1.0436	-0.42148E-02
4.3500	0.97808	0.97293	1.0436	-0.42148E-02
4.3750	0.97808	0.97293	1.0436	-0.42148E-02
4.4000	0.97808	0.97293	1.0436	-0.42148E-02
4.4250	0.97808	0.97293	1.0436	-0.42148E-02
4.4500	0.97808	0.97293	1.0436	-0.42148E-02
4.4750	0.97808	0.97293	1.0436	-0.42148E-02
4.5000	0.97808	0.97293	1.0436	-0.42148E-02
4.5250	0.97808	0.97293	1.0436	-0.42148E-02
4.5500	0.97808	0.97293	1.0436	-0.42148E-02
4.5750	0.97808	0.97293	1.0436	-0.42148E-02
4.6000	0.97808	0.97293	1.0436	-0.42148E-02
4.6250	0.97808	0.97293	1.0436	-0.42148E-02
4.6500	0.97808	0.97293	1.0436	-0.42148E-02
4.6750	0.97808	0.97293	1.0436	-0.42148E-02
4.7000	0.97808	0.97293	1.0436	-0.42148E-02
4.7250	0.97808	0.97293	1.0436	-0.42148E-02
4.7500	0.97808	0.97293	1.0436	-0.42148E-02
4.7750	0.97808	0.97293	1.0436	-0.42148E-02
4.8000	0.97808	0.97293	1.0436	-0.42148E-02
4.8250	0.97808	0.97293	1.0436	-0.42148E-02
4.8500	0.97808	0.97293	1.0436	-0.42148E-02
4.8750	0.97808	0.97293	1.0436	-0.42148E-02
4.9000	0.97808	0.97293	1.0436	-0.42148E-02
4.9250	0.97808	0.97293	1.0436	-0.42148E-02
4.9500	0.97808	0.97293	1.0436	-0.42148E-02
4.9750	0.97808	0.97293	1.0436	-0.42148E-02

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
 INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
 STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

CHANNEL	00005	00006
TIME	MTR-P	MTR-Q
0.0083	0.00000E+00	0.00000E+00
0.0333	0.00000E+00	0.00000E+00
0.0583	0.00000E+00	0.00000E+00
0.0833	0.00000E+00	0.00000E+00
0.1083	0.00000E+00	0.00000E+00
0.1333	0.00000E+00	0.00000E+00
0.1583	0.00000E+00	0.00000E+00
0.1833	0.00000E+00	0.00000E+00
0.2083	0.00000E+00	0.00000E+00
0.2333	0.00000E+00	0.00000E+00
0.2583	0.00000E+00	0.00000E+00
0.2833	0.00000E+00	0.00000E+00
0.3083	0.00000E+00	0.00000E+00
0.3333	0.00000E+00	0.00000E+00
0.3583	0.00000E+00	0.00000E+00
0.3833	0.00000E+00	0.00000E+00
0.4083	0.00000E+00	0.00000E+00
0.4333	0.00000E+00	0.00000E+00
0.4583	0.00000E+00	0.00000E+00
0.4833	0.00000E+00	0.00000E+00
0.5000	0.00000E+00	0.00000E+00
0.5000	0.30925	1.2603
0.5250	0.30862	1.2575
0.5500	0.30791	1.2547
0.5750	0.30712	1.2519
0.6000	0.30626	1.2491
0.6250	0.30533	1.2463
0.6500	0.30432	1.2436
0.6750	0.30326	1.2408
0.7000	0.30213	1.2381
0.7250	0.30096	1.2353
0.7500	0.29974	1.2327
0.7750	0.29850	1.2300
0.8000	0.29723	1.2274
0.8250	0.29595	1.2249
0.8500	0.29468	1.2224
0.8750	0.29342	1.2199
0.9000	0.29220	1.2175
0.9250	0.29102	1.2151
0.9500	0.28990	1.2127
0.9750	0.28885	1.2104
1.0000	0.28789	1.2082
1.0250	0.28705	1.2059
1.0500	0.28632	1.2037
1.0750	0.28574	1.2015
1.1000	0.28532	1.1993
1.1250	0.28508	1.1972
1.1500	0.28504	1.1950
1.1750	0.28522	1.1927
1.2000	0.28566	1.1905
1.2250	0.28637	1.1881
1.2500	0.28740	1.1857
1.2750	0.28878	1.1832

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PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
 INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
 STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

CHANNEL	00005	00006
TIME	MTR-P	MTR-Q
1.3000	0.29056	1.1805
1.3250	0.29280	1.1777
1.3500	0.29558	1.1746
1.3750	0.29900	1.1712
1.4000	0.30319	1.1674
1.4250	0.30832	1.1631
1.4500	0.31466	1.1581
1.4750	0.32256	1.1522
1.5000	0.33259	1.1448
1.5250	0.34566	1.1354
1.5500	0.36335	1.1225
1.5750	0.38873	1.1033
1.6000	0.42866	1.0707
1.6250	0.50220	0.99825
1.6500	0.64956	0.70507
1.6750	0.32064	0.14840
1.7000	0.18827	0.10615
1.7250	0.17861	0.10410
1.7500	0.17797	0.10397
1.7750	0.17794	0.10397
1.8000	0.17793	0.10397
1.8250	0.17793	0.10397
1.8500	0.17793	0.10397
1.8750	0.17793	0.10397
1.9000	0.17793	0.10397
1.9250	0.17793	0.10397
1.9500	0.17793	0.10397
1.9750	0.17793	0.10397
2.0000	0.17793	0.10397
2.0250	0.17793	0.10397
2.0500	0.17793	0.10397
2.0750	0.17793	0.10397
2.1000	0.17793	0.10397
2.1250	0.17793	0.10397
2.1500	0.17793	0.10397
2.1750	0.17793	0.10397
2.2000	0.17793	0.10397
2.2250	0.17793	0.10397
2.2500	0.17793	0.10397
2.2750	0.17793	0.10397
2.3000	0.17793	0.10397
2.3250	0.17793	0.10397
2.3500	0.17793	0.10397
2.3750	0.17793	0.10397
2.4000	0.17793	0.10397
2.4250	0.17793	0.10397
2.4500	0.17793	0.10397
2.4750	0.17793	0.10397
2.5000	0.17793	0.10397
2.5250	0.17793	0.10397
2.5500	0.17793	0.10397
2.5750	0.17793	0.10397
2.6000	0.17793	0.10397

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PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
 INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
 STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

CHANNEL	00005	00006
TIME	MTR-P	MTR-Q
2.6250	0.17793	0.10397
2.6500	0.17793	0.10397
2.6750	0.17793	0.10397
2.7000	0.17793	0.10397
2.7250	0.17793	0.10397
2.7500	0.17793	0.10397
2.7750	0.17793	0.10397
2.8000	0.17793	0.10397
2.8250	0.17793	0.10397
2.8500	0.17793	0.10397
2.8750	0.17793	0.10397
2.9000	0.17793	0.10397
2.9250	0.17793	0.10397
2.9500	0.17793	0.10397
2.9750	0.17793	0.10397
3.0000	0.17793	0.10397
3.0250	0.17793	0.10397
3.0500	0.17793	0.10397
3.0750	0.17793	0.10397
3.1000	0.17793	0.10397
3.1250	0.17793	0.10397
3.1500	0.17793	0.10397
3.1750	0.17793	0.10397
3.2000	0.17793	0.10397
3.2250	0.17793	0.10397
3.2500	0.17793	0.10397
3.2750	0.17793	0.10397
3.3000	0.17793	0.10397
3.3250	0.17793	0.10397
3.3500	0.17793	0.10397
3.3750	0.17793	0.10397
3.4000	0.17793	0.10397
3.4250	0.17793	0.10397
3.4500	0.17793	0.10397
3.4750	0.17793	0.10397
3.5000	0.17793	0.10397
3.5250	0.17793	0.10397
3.5500	0.17793	0.10397
3.5750	0.17793	0.10397
3.6000	0.17793	0.10397
3.6250	0.17793	0.10397
3.6500	0.17793	0.10397
3.6750	0.17793	0.10397
3.7000	0.17793	0.10397
3.7250	0.17793	0.10397
3.7500	0.17793	0.10397
3.7750	0.17793	0.10397
3.8000	0.17793	0.10397
3.8250	0.17793	0.10397
3.8500	0.17793	0.10397
3.8750	0.17793	0.10397
3.9000	0.17793	0.10397
3.9250	0.17793	0.10397

Calculation No. FEX-00083-00 Rev. (
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PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT
INDIAN POINT SIP 21 STARTUP SIMULATION (LF32)
STARTUP OF SIP 21 FROM BUS 5A WITH INFINITE VOLTAGE SOURCE

THU, APR 09 1998 10:33

CHANNEL	00005	00006
TIME	MTR-P	MTR-Q
3.9500	0.17793	0.10397
3.9750	0.17793	0.10397
4.0000	0.17793	0.10397
4.0250	0.17793	0.10397
4.0500	0.17793	0.10397
4.0750	0.17793	0.10397
4.1000	0.17793	0.10397
4.1250	0.17793	0.10397
4.1500	0.17793	0.10397
4.1750	0.17793	0.10397
4.2000	0.17793	0.10397
4.2250	0.17793	0.10397
4.2500	0.17793	0.10397
4.2750	0.17793	0.10397
4.3000	0.17793	0.10397
4.3250	0.17793	0.10397
4.3500	0.17793	0.10397
4.3750	0.17793	0.10397
4.4000	0.17793	0.10397
4.4250	0.17793	0.10397
4.4500	0.17793	0.10397
4.4750	0.17793	0.10397
4.5000	0.17793	0.10397
4.5250	0.17793	0.10397
4.5500	0.17793	0.10397
4.5750	0.17793	0.10397
4.6000	0.17793	0.10397
4.6250	0.17793	0.10397
4.6500	0.17793	0.10397
4.6750	0.17793	0.10397
4.7000	0.17793	0.10397
4.7250	0.17793	0.10397
4.7500	0.17793	0.10397
4.7750	0.17793	0.10397
4.8000	0.17793	0.10397
4.8250	0.17793	0.10397
4.8500	0.17793	0.10397
4.8750	0.17793	0.10397
4.9000	0.17793	0.10397
4.9250	0.17793	0.10397
4.9500	0.17793	0.10397
4.9750	0.17793	0.10397

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 119 of 136
Appendix B, Page 19 of 19

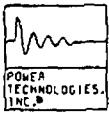
SVR-PSS/E-24

REVISION 0
AUGUST 1998

APPENDIX C

GENSAL GENERATOR, EXST2A VOLTAGE REGULATOR, DEGOV GOVERNOR AND SAFEGURD TEST SIMULATION VALIDATION FOR PSS/E VERSION 21 AND VERSION 24

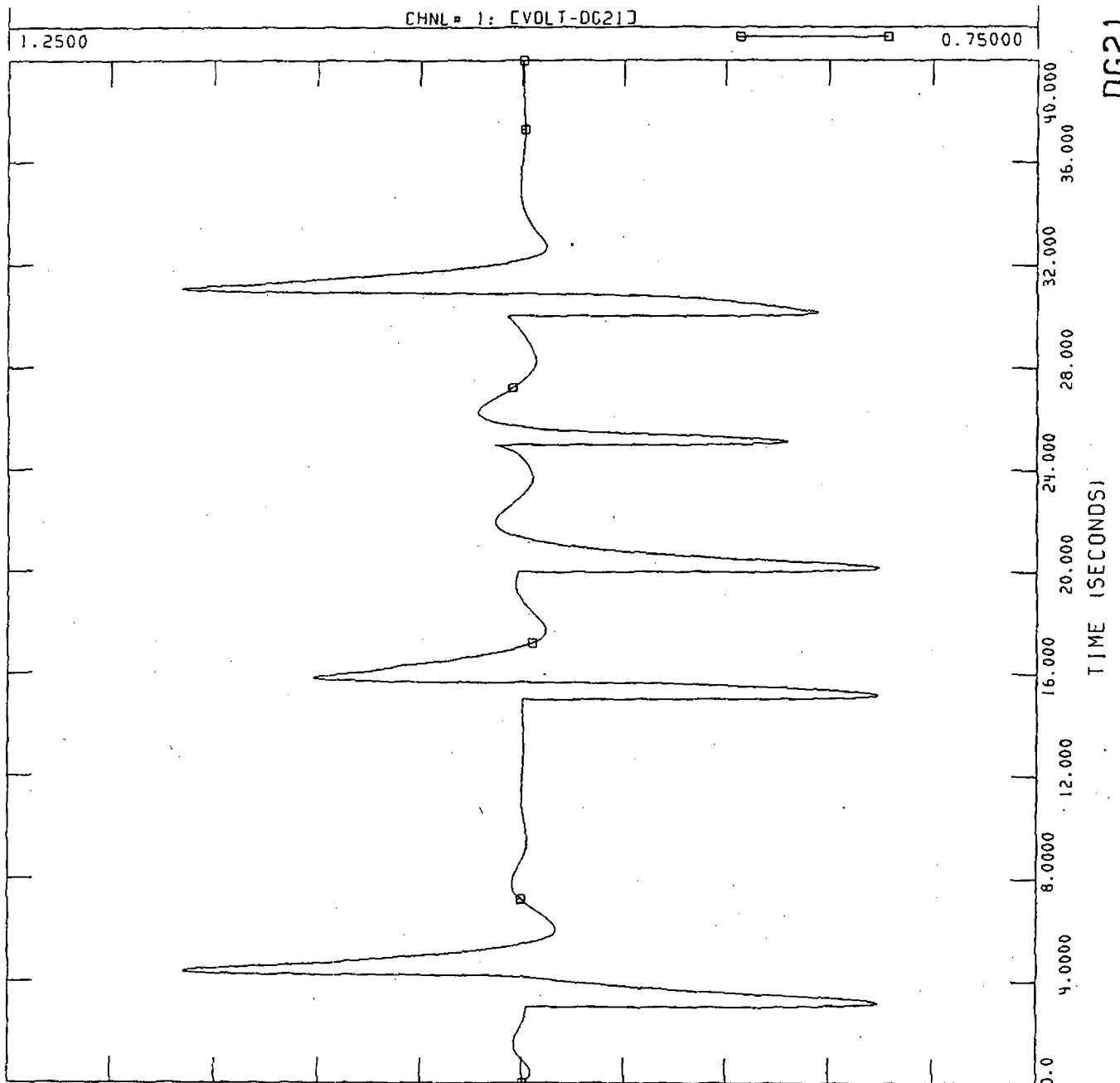
IP2DGSVR.DOC

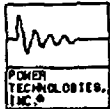


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A

FILE: C:\PSSE24W\VNV\dg21norm.out

Tue, Apr 07 1998 14:32
DC21 VOLTG (NORM V24)



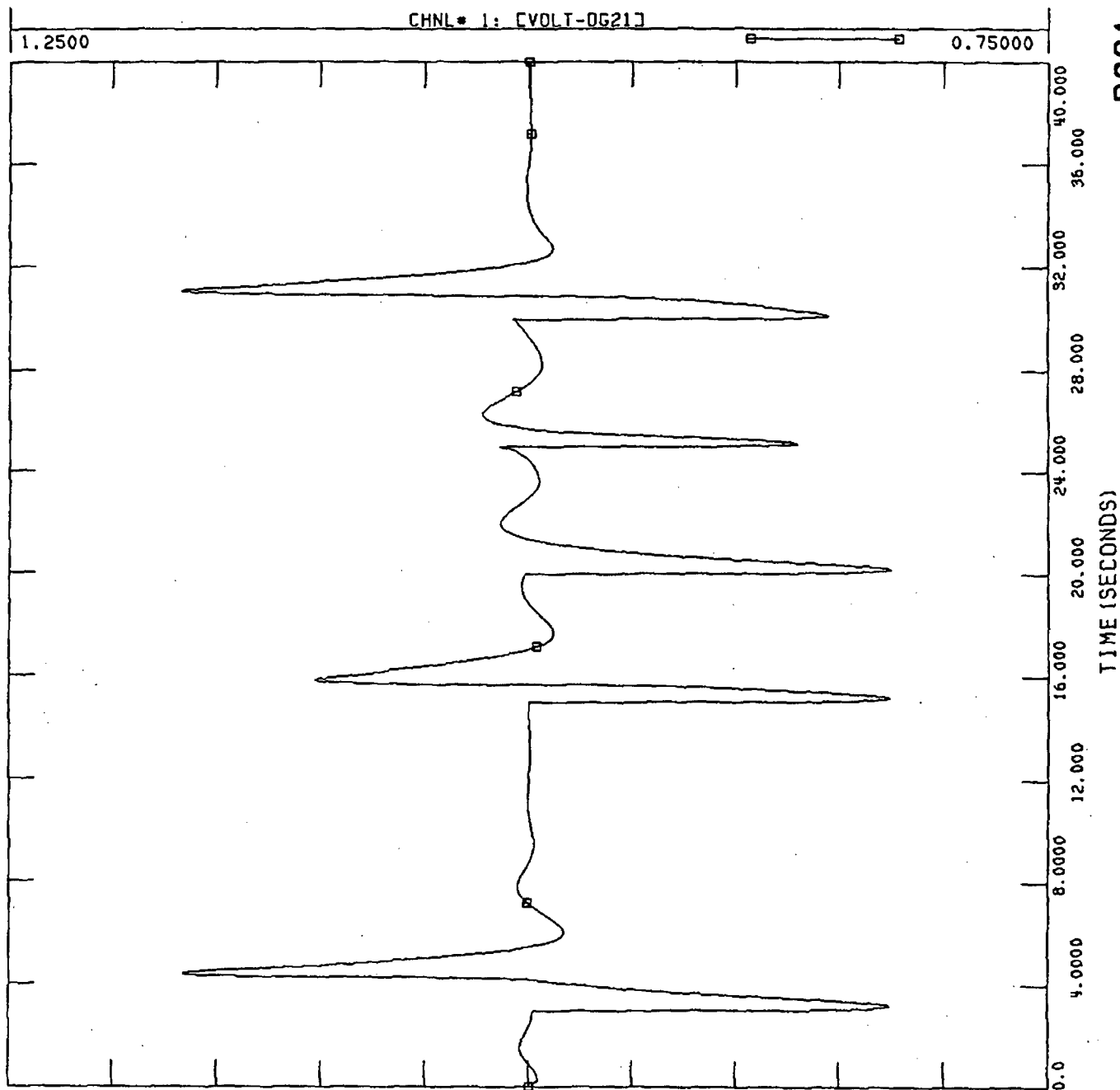


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF212)
DIESEL GENERATOR #21 BUSSES 5A

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 122 of 136
Appendix C, Page 3 of 7

FILE: DG21NORM.OUT

TUE, MAR 17 1998 09:
DG21 VOLTG (NORM V21

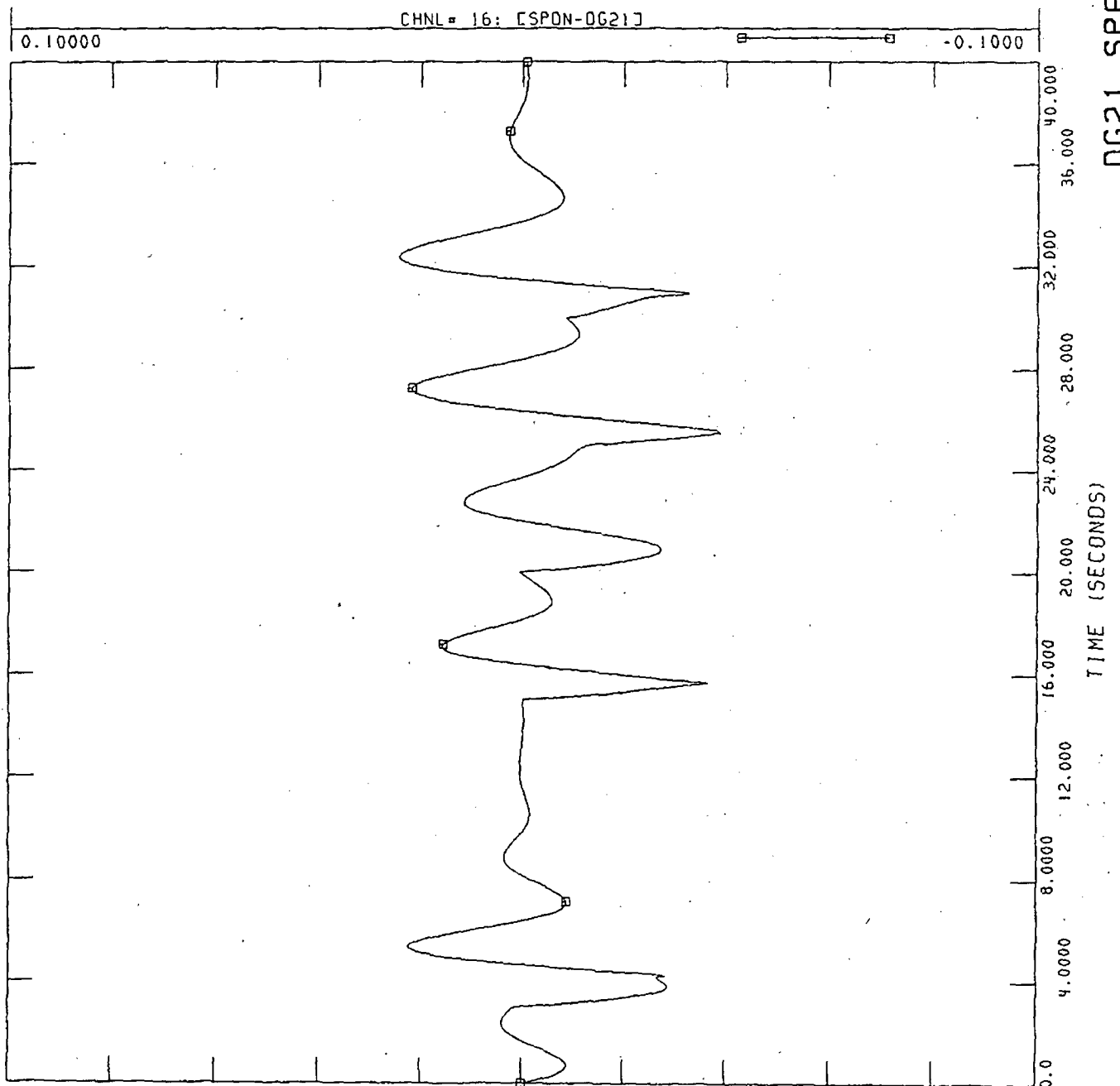




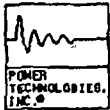
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF2)
DIESEL GENERATOR #21 BUS 5A

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 123 of 136
Appendix C, Page 4 of 7

FILE: C:\PSSE24W\VN\vdg21norm.out



Tue. Apr 07 1998 14:3

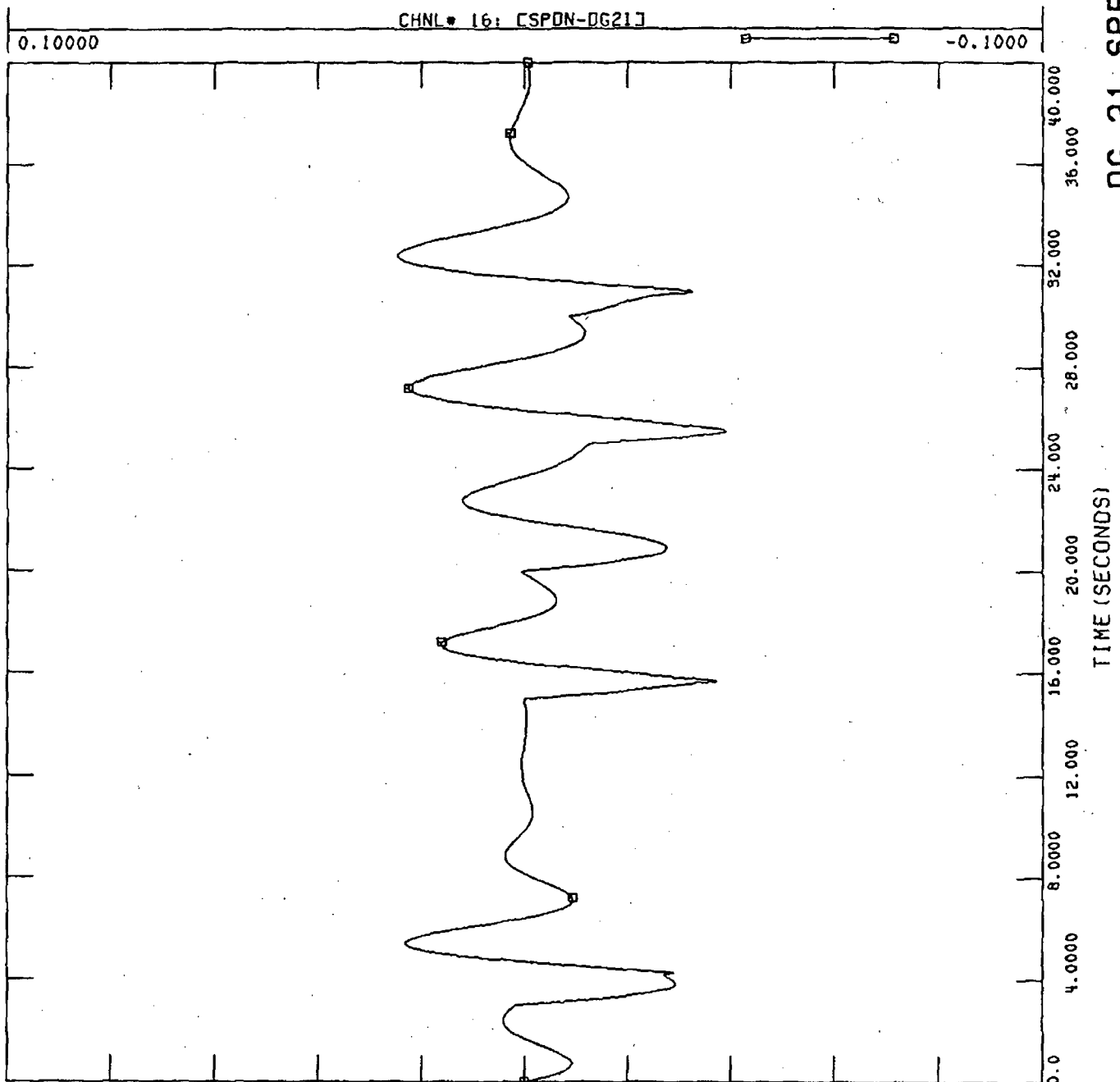


INDIAN POINT 2 DIESEL GENERATOR STUDY (LF212)
DIESEL GENERATOR #21 BUSSES SA

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 124 of 136
Appendix C, Page 5 of 7

FILE: DG21NORM.OUT

TUE, MAR 17 1998 09:11
DG 21 SPEEDVTN (NORM V21)



SAFEGUARD TEST CASE From VEEIS

0621N_24.PRN

Wednesday, August 5, 1998 6:16pm

Page 1

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT Tue, Apr 07 1998 14:24
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF21)
DIESEL GENERATOR #21 BUS 5A

	CHANNEL #:	00001: VOLT-DG21			
	CHANNEL #:	00012: PELEC-DG21			
	CHANNEL #:	00013: QELEC-DG21			
	CHANNEL #:	00015: EFD-DG21			
	CHANNEL #:	00016: SPDW-DG21			
TIME	00001	00012	00013	00015	00016
.0000	.99993	-.73618E-05	-.17641E-04	1.2957	.35087E-14
.0000	.99991	.65631E-01	.59921E-03	1.2957	.35087E-14
.0250	.99833	.65633E-01	.60061E-03	1.2962	-.60815E-03
.0500	.99803	.65633E-01	.60062E-03	1.2984	-.12172E-02
.0750	.99803	.65633E-01	.60110E-03	1.3024	-.18246E-02
.1000	.99798	.65633E-01	.59983E-03	1.3075	-.24244E-02
.1250	.99780	.65633E-01	.60061E-03	1.3129	-.30094E-02
.1500	.99754	.65634E-01	.59995E-03	1.3182	-.35718E-02
.1750	.99722	.65634E-01	.60057E-03	1.3233	-.41048E-02
.2000	.99689	.65635E-01	.60080E-03	1.3282	-.46030E-02
.2250	.99658	.65635E-01	.59998E-03	1.3330	-.50634E-02
.2500	.99630	.65635E-01	.60009E-03	1.3376	-.54851E-02
.2750	.99607	.65636E-01	.60052E-03	1.3421	-.58695E-02
.3000	.99589	.65636E-01	.60055E-03	1.3466	-.62198E-02
.3250	.99576	.65636E-01	.60022E-03	1.3510	-.65404E-02
.3500	.99568	.65637E-01	.59975E-03	1.3551	-.68361E-02
.3750	.99564	.65637E-01	.59971E-03	1.3590	-.71117E-02
.4000	.99564	.65637E-01	.60017E-03	1.3624	-.73708E-02
.4250	.99568	.65638E-01	.59885E-03	1.3653	-.76159E-02
.4500	.99575	.65636E-01	.59944E-03	1.3678	-.78482E-02
.4750	.99584	.65637E-01	.59874E-03	1.3697	-.80671E-02
.5000	.99595	.65636E-01	.59821E-03	1.3711	-.82707E-02
.5250	.99609	.65637E-01	.59862E-03	1.3720	-.84565E-02
.5500	.99624	.65637E-01	.59778E-03	1.3725	-.86212E-02
.5750	.99641	.65636E-01	.59699E-03	1.3726	-.87615E-02
.6000	.99660	.65636E-01	.59703E-03	1.3725	-.88748E-02
.6250	.99680	.65636E-01	.59696E-03	1.3720	-.89591E-02
.6500	.99703	.65635E-01	.59558E-03	1.3714	-.90136E-02
.6750	.99728	.65635E-01	.59549E-03	1.3705	-.90385E-02
.7000	.99755	.65635E-01	.59473E-03	1.3693	-.90352E-02
.7250	.99784	.65634E-01	.59452E-03	1.3679	-.90059E-02
.7500	.99814	.65634E-01	.59443E-03	1.3662	-.89532E-02
.7750	.99845	.65634E-01	.59478E-03	1.3643	-.88803E-02
.8000	.99876	.65633E-01	.59367E-03	1.3620	-.87899E-02
.8250	.99908	.65633E-01	.59429E-03	1.3594	-.86846E-02
.8500	.99940	.65632E-01	.59349E-03	1.3565	-.85662E-02
.8750	.99971	.65631E-01	.59296E-03	1.3534	-.84360E-02
.9000	1.0000	.65631E-01	.59273E-03	1.3500	-.82944E-02
.9250	1.0003	.65631E-01	.59267E-03	1.3465	-.81412E-02
.9500	1.0006	.65630E-01	.59278E-03	1.3429	-.79759E-02
.9750	1.0009	.65630E-01	.59162E-03	1.3392	-.77975E-02
1.0000	1.0011	.65630E-01	.59159E-03	1.3355	-.76054E-02
1.0250	1.0014	.65630E-01	.59184E-03	1.3318	-.73987E-02
1.0500	1.0016	.65629E-01	.59098E-03	1.3281	-.71774E-02

This is the output listing from PSS/E Version 24. The rest of the output values are identical to values imported in Excel Spread Sheets (Table III). Thus duplicate listing is not necessary.

SAFEGUARD TEST CASE FR

DG21N_21.PRN

Wednesday, August 5, 1998 6:16pm

Page 1

PTI INTERACTIVE PLOTTING PROGRAM--PSSPLT TUE, APR 07 1998 14:08
INDIAN POINT 2 DIESEL GENERATOR STUDY (LF212)
DIESEL GENERATOR #21 BUSES 5A

CHANNEL	00001	00012	00013	00015	00016
TIME	VOLT-DG21	PELEC-DG21	QELEC-DG21	EFD-DG21	SPDN-DG21
0.0000	0.99993	-0.70336E-05	-0.11443E-04	1.2957	-0.23007E-09
0.0000	0.99941	0.65631E-01	0.60541E-03	1.2957	-0.23007E-09
0.0250	0.99833	0.65633E-01	0.60585E-03	1.2962	-0.60815E-03
0.0500	0.99803	0.65633E-01	0.60632E-03	1.2984	-0.12172E-02
0.0750	0.99803	0.65633E-01	0.60635E-03	1.3024	-0.18246E-02
0.1000	0.99797	0.65633E-01	0.60554E-03	1.3075	-0.26244E-02
0.1250	0.99780	0.65633E-01	0.60542E-03	1.3129	-0.30094E-02
0.1500	0.99754	0.65634E-01	0.60476E-03	1.3182	-0.35718E-02
0.1750	0.99722	0.65635E-01	0.60583E-03	1.3233	-0.41048E-02
0.2000	0.99689	0.65635E-01	0.60609E-03	1.3282	-0.46030E-02
0.2250	0.99658	0.65635E-01	0.60542E-03	1.3330	-0.50634E-02
0.2500	0.99630	0.65636E-01	0.60588E-03	1.3376	-0.54851E-02
0.2750	0.99607	0.65636E-01	0.60566E-03	1.3422	-0.58695E-02
0.3000	0.99589	0.65636E-01	0.60545E-03	1.3466	-0.62198E-02
0.3250	0.99576	0.65637E-01	0.60584E-03	1.3510	-0.65404E-02
0.3500	0.99568	0.65637E-01	0.60517E-03	1.3551	-0.68361E-02
0.3750	0.99564	0.65637E-01	0.60537E-03	1.3590	-0.71117E-02
0.4000	0.99564	0.65637E-01	0.60524E-03	1.3624	-0.73708E-02
0.4250	0.99568	0.65637E-01	0.60391E-03	1.3653	-0.76159E-02
0.4500	0.99575	0.65637E-01	0.60446E-03	1.3678	-0.78482E-02
0.4750	0.99584	0.65637E-01	0.60379E-03	1.3697	-0.80671E-02
0.5000	0.99595	0.65637E-01	0.60363E-03	1.3711	-0.82707E-02
0.5250	0.99609	0.65637E-01	0.60311E-03	1.3720	-0.84565E-02
0.5500	0.99624	0.65637E-01	0.60258E-03	1.3725	-0.86212E-02
0.5750	0.99641	0.65636E-01	0.60213E-03	1.3726	-0.87615E-02
0.6000	0.99660	0.65636E-01	0.60247E-03	1.3725	-0.88748E-02
0.6250	0.99680	0.65636E-01	0.60186E-03	1.3720	-0.89591E-02
0.6500	0.99703	0.65636E-01	0.60181E-03	1.3714	-0.90136E-02
0.6750	0.99728	0.65635E-01	0.60073E-03	1.3705	-0.90385E-02
0.7000	0.99755	0.65635E-01	0.59999E-03	1.3693	-0.90352E-02
0.7250	0.99784	0.65634E-01	0.60031E-03	1.3679	-0.90059E-02
0.7500	0.99814	0.65634E-01	0.60024E-03	1.3663	-0.89532E-02
0.7750	0.99845	0.65634E-01	0.59975E-03	1.3643	-0.88803E-02
0.8000	0.99876	0.65633E-01	0.59944E-03	1.3620	-0.87899E-02
0.8250	0.99908	0.65633E-01	0.59900E-03	1.3594	-0.86846E-02
0.8500	0.99940	0.65633E-01	0.59854E-03	1.3565	-0.85662E-02
0.8750	0.99971	0.65632E-01	0.59848E-03	1.3534	-0.84360E-02
0.9000	1.0000	0.65632E-01	0.59816E-03	1.3500	-0.82944E-02
0.9250	1.0003	0.65631E-01	0.59840E-03	1.3465	-0.81412E-02
0.9500	1.0006	0.65630E-01	0.59787E-03	1.3429	-0.79759E-02
0.9750	1.0009	0.65630E-01	0.59775E-03	1.3392	-0.77975E-02
1.0000	1.0011	0.65630E-01	0.59731E-03	1.3355	-0.76054E-02
1.0250	1.0014	0.65629E-01	0.59757E-03	1.3318	-0.73987E-02
1.0500	1.0016	0.65629E-01	0.59638E-03	1.3281	-0.71774E-02

This is the output listing from PSS/E Version 21. The rest of the output values are identical to values imported in Excel Spread Sheets (Table III). Thus duplicate listing is not necessary.

SVR-PSS/E-24

REVISION 0
AUGUST 1998

APPENDIX D

USER PROVIDED INPUT DATA FILES

IP2DGSVR.DOC

Page 1

This file was written by Raytheon E & C.
PSLF load flow program on Mar 17, 1998

SIP 21 STARTUP DATA FILE FOR

Calculation No. FEX-00083-00 Rev. C
Attachment XVIII, Page 129 of 136
Appendix D, Page 3 of 10

SIP21.RAW

Thursday, April 9, 1998 11:54am

Page 1

0 2.2 / "SIP21.RAW", Thur Mar 06, 1998

Indian Point SWP 34 Startup Simulation (LF32)

Startup of SIP 21 from Bus 5A with infinite voltage source

4 Buses, 3 Branches

5	3	0.000	0.000	0.000	0.000	1	0.98995	0.0000	'BUS 5A	0.480	1
55	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 SIP	0.440	1
550	1	0.000	0.000	0.000	0.000	1	1.00000	0.0000	'SST 5	0.480	1
551	1	0.000	0.000	0.000	0.000	1	1.00000	0.0000	'SIP21CBL	0.480	1

0 5 1 0.000 0.000 9999.00 -9999.00 0.9782 0 100.0 0.00000 0.10 0.0000 0.0000

550	5	1	0.01940	0.07129	0.00000	0.00	0.00	0.00	0.00000	0.000	0.0000	0.0000	0.0000	0.0000	1	1
55	551	1	0.00000	0.00000	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
551	550	1	0.10645	0.15131	0.00000	0.00	0.00	0.00	0.00000	0.000	0.0000	0.0000	0.0000	0.0000	1	1

0
0
0
0
0
0
0
0

This file was written by Ebasco Services Inc.
PSLF load flow program on Thurs Jan 6, 1994

SIP 21 STARTUP DATA FILE FOR V24 21

SIP21.DYR

Thursday, April 9, 1998 11:54am

Page 1

5	'GENCLS' 1	9999.	0.E+0	/	
55	'CMOTOR'	0.0120	0.0750		4.00 0.0600
	0.080	0.009	0.068		-0.321 0.345
	2.0	0.0096	0.805		0.5 /SIP 21

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 130 of 136
Appendix D, Page 4 of 10

SIP21.IDV

Thursday, April 9, 1998 11:57am

Page 1

```

MENU,OFF      /* FORCE MENU TO CORRECT STATUS
LOFL
CASE,SIP21CON,SAV
FACT
RTRN
RSTR
SIP21S0.SNP
PSAS
1
SIP21R.IDV
INITIALIZE OUTPUT SIP21.OUT
RUN TO 0.5 SECOND PRINT 30 PLOT 3
SET COM 10 TO 0.32      /Start SIP21 a field test load (0.7935 pu)
SET VAR 5 to 0.55615121
RUN TO 5 SECONDS PRINT 30 PLOT 3
END
SNAP, SIP21S1

ECHO
IDEV
STOP
```


Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 132 of 136
Appendix D, Page 6 of 10

Page 1/2

49	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
50	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
51	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
52	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
53	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
54	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
55	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
56	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
57	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
58	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0
59	5	1	0	1.5	0.51	1.5	0.51	0.00625	0	1	0	0

SAFEGUARD TEST CASE DATA FILE F021E

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 134 of 136
Appendix D, Page 8 of 10

IP2DG21.RAW

Thursday, April 9, 1998 11:54am

Page 1

V21

LOAD Flow input

0 2.200 / Mar 16, 1998
Indian Point 2 Diesel Generator Study (LF212)
Diesel Generator #21 BusSES 5A

5	3	0.000	0.000	0.000	0.000	1	1.00000	0.0000	'BUS 5A	'	0.480	1
49	1	0.000	0.000	0.000	0.000	1	1.00000	0.0000	'MCC 29A	'	0.480	1
50	1	0.000	0.000	0.000	0.000	1	1.00000	0.0000	'21 SWP	'	0.440	1
51	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 SIP	'	0.440	1
52	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 CSP	'	0.460	1
53	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 CRF	'	0.440	1
54	1	0.000	0.000	0.000	0.000	1	1.04300	0.0000	'MCC 26A	'	0.480	1
55	1	0.000	0.000	0.000	0.000	1	1.04300	0.0000	'21 CCP	'	0.460	1
56	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'22 CRF	'	0.440	1
57	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 RCP	'	0.440	1
58	1	0.000	0.000	0.000	0.000	1	1.09100	0.0000	'21 CHP	'	0.460	1
59	1	0.000	0.000	0.000	0.000	1	1.04300	0.0000	'24 SWP	'	0.440	1

0

5	1	0.000	0.000	9999.00	-9999.00	1.00000	0	2.200	0.00585	0.14000	0.0000	0.0000	1.00000	1	100.0	9999	-9999
---	---	-------	-------	---------	----------	---------	---	-------	---------	---------	--------	--------	---------	---	-------	------	-------

0

49	5	1	0.0057	0.01050	0.00000	0.00	0.00	0.00	1.00000	0.000	0.0000	0.0000	0.0000	0.0000	1	1
50	5	1	0.08020	0.08400	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
51	5	1	0.04110	0.0535	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
52	5	1	0.05060	0.06590	0.00000	0.00	0.00	0.00	1.04300	0.000	0.0000	0.0000	0.0000	0.0000	1	1
53	5	1	0.01100	0.09640	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
54	5	1	0.14800	0.14320	0.00000	0.00	0.00	0.00	1.00000	0.000	0.0000	0.0000	0.0000	0.0000	1	1
55	5	1	0.06970	0.12800	0.00000	0.00	0.00	0.00	1.04300	0.000	0.0000	0.0000	0.0000	0.0000	1	1
56	5	1	0.11650	0.10120	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
57	5	1	0.12800	0.10690	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1
58	5	1	0.10120	0.14230	0.00000	0.00	0.00	0.00	1.04300	0.000	0.0000	0.0000	0.0000	0.0000	1	1
59	5	1	0.08500	0.08980	0.00000	0.00	0.00	0.00	1.09100	0.000	0.0000	0.0000	0.0000	0.0000	1	1

This file was written by Raytheon E & C.
PSLF load flow program on Dec 11, 1997

SAFEGUARD TEST CASE FOR VERSION 24
DATA FILE

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 135 of 136
Appendix D, Page 9 of 10

DG21.DYR

Thursday, April 9, 1998 11:54am

Page 1

5	'GENSAL' 1	3.5	0.05	0.05	1.35
	0	1.33	1.000	0.22	0.14
	0.13	0.296	0.7540	/	
5	'EXST2A' 1	0	60.0	0.15	1.2
	-1.2	1	0.5	0.04	0.50
	3.50	3.50	0.7	4.5	/
5	'DEGOV' 1	0.0220	0.20	0.1	10.000
	0.25	0.039	0.009	0.025	1.069
	-0.05	/			
51	'CMOTOR'	0.0120	0.0750	4.00	0.0600
	0.080	0.009	0.068	0.0	0.4320
	2.0	1.00	0.96462	0.5	/ SIZ1
52	'CMOTOR'	0.018	0.0730	3.55	0.07
	0.070	0.016	0.075	0.0	0.376
	2.0	1.0	1.00416	0.5	/ CS21
53	'CMOTOR'	0.022	0.075	2.80	0.060
	0.070	0.0190	0.0670	0.0	3.015
	2.0	1.0	0.84075	0.5	/ CRF21
56	'CMOTOR'	0.022	0.075	2.80	0.060
	0.07	0.019	0.067	0.0	3.015
	2.0	1.0	0.84075	0.5	/ CRF22
59	'CMOTOR'	0.020	0.0720	2.80	0.05
	0.07	0.014	0.0450	0.0	0.225
	2.0	1.0	0.94244	0.5	/ SWP24
50	'CMOTOR'	0.020	0.072	2.8	0.05
	0.07	0.014	0.045	0.0	0.225
	2.0	1.0	0.94244	0.5	/ SWP21
55	'CMOTOR'	0.020	0.083	3.30	0.060
	0.0840	0.0410	0.06400	0.0	0.404
	2.0	1.0	1.13393	0.5	/ CCP21
57	'CMOTOR'	0.0220	0.0750	2.800	0.0600
	0.070	0.0190	0.0670	0.0	0.4490
	2.0	1.0	1.02841	0.5	/ RP21
58	'CMOTOR'	0.018	0.072	3.60	0.06
	0.072	0.018	0.07	0.0	0.181
	2.0	1.0	0.914910	0.5	/ CHP21
0	'NETFRQ'	/			

SAFEGUARD TEST CASE FOR VERSION
DATA FILE

Calculation No. FEX-00083-00 Rev. 0
Attachment XVIII, Page 136 of 136
Appendix D, Page 10 of 10

DG21NORM.IDV

Thursday, April 9, 1998 11:57am

Page 1

MENU,OFF /* FORCE MENU TO CORRECT STATUS, Output request for DG 31
RSTR,DG21N.SNP
LOFL
CASE,DG21CON.SAV
FACT
RTRN
STRT
DG21N.OUT

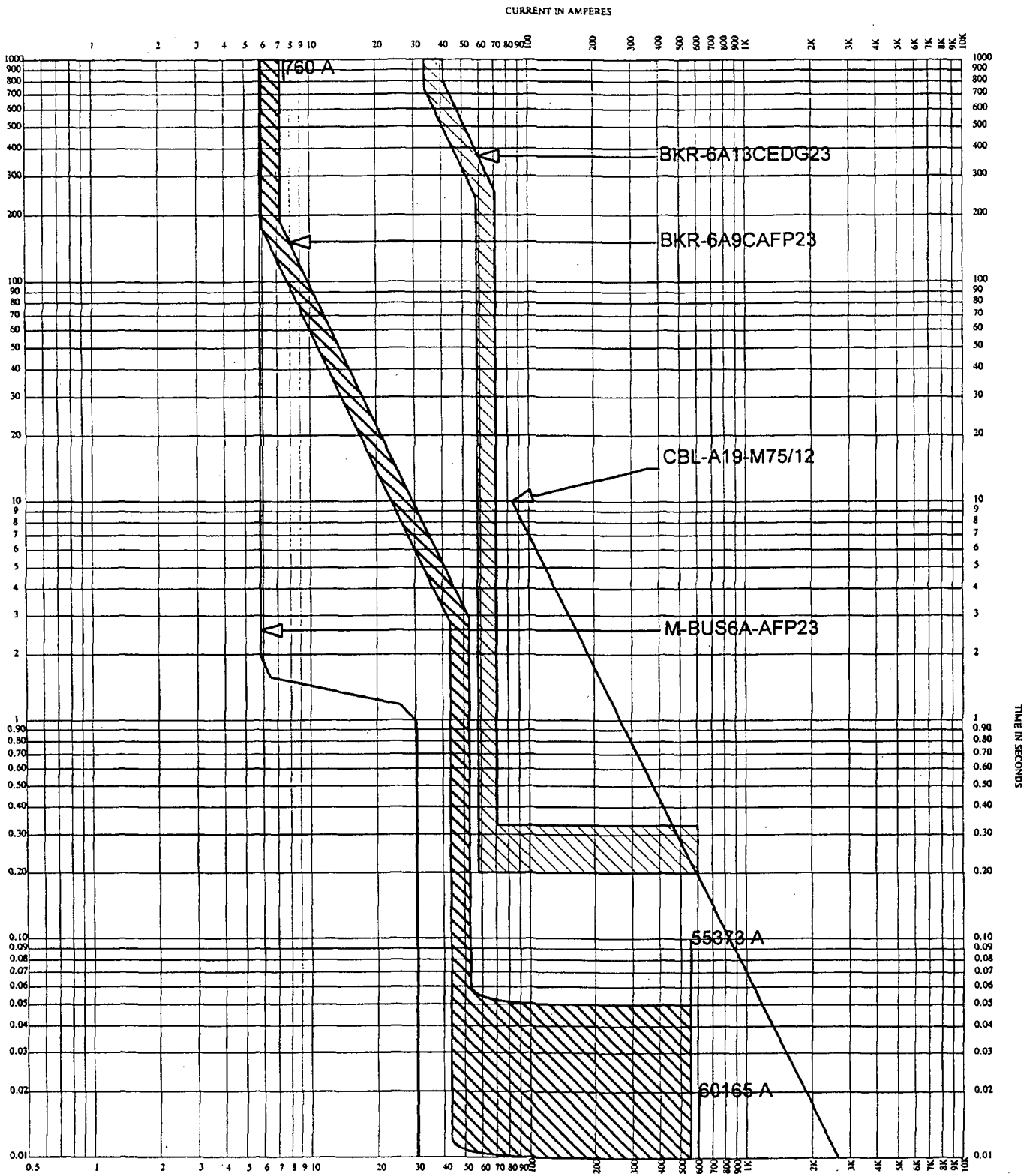
RUN
0 30 3
PSAS
1

CHANGE MWP LOAD BUS 54 TO 0.143 MW	/0.0 SEC MCC26A @143 KW
RUN TO 3 SECONDS PRINT 0 PLOT 3	
SET CON 43 TO 0.347	/3.0 SEC S121 ON
RUN TO 15 SECONDS PRINT 0 PLOT 3	
SET CON 108 TO 0.321	/15.0 SEC SW21 ON
RUN TO 20 SECONDS PRINT 0 PLOT 3	
SET CON 69 TO 0.319	/20.0 SEC CR21 ON
RUN TO 25 SECONDS PRINT 0 PLOT 3	
SET CON 82 TO 0.319	/25.0 SEC CR22 ON
RUN TO 30 SECONDS PRINT 0 PLOT 3	
SET CON 56 TO 0.349	/30.0 SEC CS21 ON
RUN TO 40 SECONDS PRINT 0 PLOT 3	
PASS	
FIN	
END	

ENCLOSURE 2 TO NL-09-010

TYPICAL EDG & CCW COORDINATION CURVE WITH SETTING
DETAILS

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247



Compartment ID: 6A-EDG23-AFP23
 Reference Voltage: 480
 Current Scale: X100

Calculation No. SGX-00048-01

Attachment A4

Page 53 of 58

EDG23 Feeder Breaker Coordination with AFP#23

TRM-BKR-EDG#23
NominalSysVoltage 480 V
ANSI Sym 3P LV 60.165 kA

BKR-6A13CEDG23
Type DB-50/75

DB75-REACT-EDG
CableSize
QtyPerPhase 1
InsulationType
Length 1000.0 ft

BUS-6A
NominalSysVoltage 480 V
ANSI Sym 3P LV 58.896 kA

DB50-REACT-09C
CableSize
QtyPerPhase 1
InsulationType
Length 1000.0 ft

BKR-6A9CAFP23
Type DB-50/75

TRM-6A9CAFP23
NominalSysVoltage 480 V
ANSI Sym 3P LV 55.373 kA

CBL-A19-M75/12
CableSize 500
QtyPerPhase 1
InsulationType
Length 1000.0 ft

Calculation No. SGX-00048-01
Attachment A4
Page 54 of 58

MT-AFP23
NominalSysVoltage 480 V
ANSI Sym 3P LV 22.764 kA

M-BUS6A-AFP23
RatedSize 492.00 hp
Load Factor 1.00
X"d 0.1883 pu

* - Horsepower is increased to 492 HP
based on Safety Injection Conditions.
Reference 6.2.13 - Calculation No FEX-00143-01

Apr 06, 2004 14:39:57

TCC Name: 6A-EDG23-AFP23.tcc
Reference Voltage: 480
Current Scale X 10²

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL, INTERPRETATION,
AND APPLICATION BY A REGISTERED ENGINEER ONLY.
CAPTOR (Computer Aided Plotting for Time Overcurrent Reporting)
COPYRIGHT SKM SYSTEMS ANALYSIS, INC. 1996

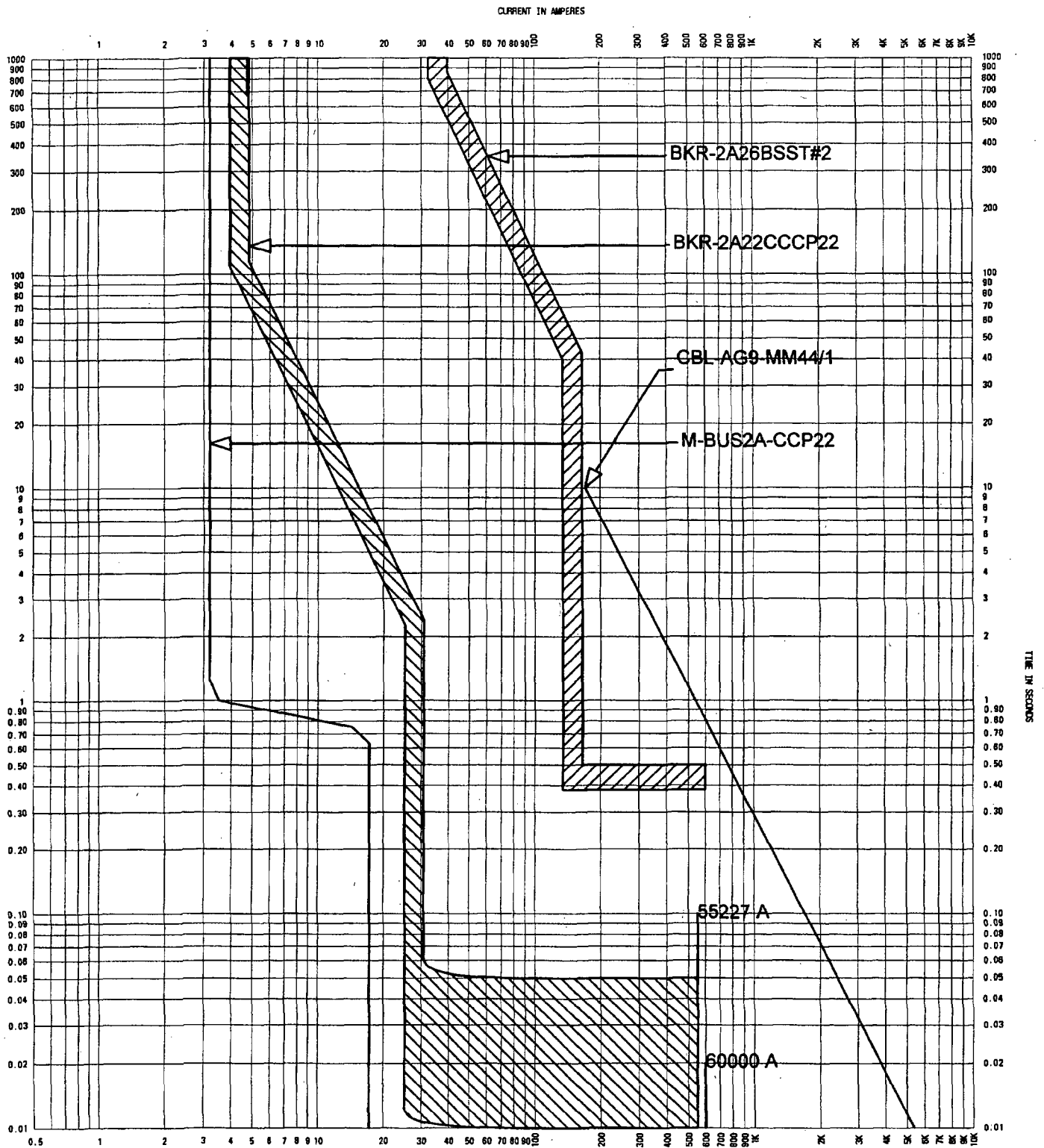
Device Name: BKR-6A13CEDG23 Bus Name: TRM-BKR-EDG#23
Description: WESTINGHOUSE-DB-50/75-AMPTCT IA Bus Voltage: 480.0V
AIC Rating: 65kA Fault Duty: 60165.1A
Frame: 3200 480V 3200A 65kA 0kA 0kA Curve Multiplier: 1.00000
Sensor: 3000A
Plug:
Setting: 1) LTPU 1.25
2) LTD 36.0
3) STPU 2.15
4) STD 0.33

Device Name: BKR-6A9CAFP23 Bus Name: TRM-6A9CAFP23
Description: WESTINGHOUSE-DB-50/75-AMPTCT IA Bus Voltage: 480.0V
AIC Rating: 30kA Fault Duty: 55373.0A
Frame: 800 480V 800A 30kA 0kA 0kA Curve Multiplier: 1.00000
Sensor: 600A
Plug:
Setting: 1) LTPU 1.1
2) LTD 6.5
3) INST 8.0

Device Name: CBL-A19-M75/12 Bus Name: TRM-6A9CAFP23
Description: Cable Damage Curve Bus Voltage: 480V
Size: 500 Fault Duty: 55373.0A
Material: Copper Cont. Temp: 75 deg C.
Qty/Ph: 1 Damage Temp: 150 deg C.

Device Name: M-BUS6A-AFP23 Bus Name: MT-AFP23
Description: Motor Starting Curve Bus Voltage: 480V
Rated Sized: 492HP Fault Duty: 22764.4A
Starting Time: 1.96s Full Voltage (Square Transient)
Inrush: 5.2x (3054.8A) FLA/Load Adder: 587.1A / 0.0A

Calculation No. SGX-00048-01
Attachment A4
Page 55 of 58



Compartment ID: 2A-22C
 Reference Voltage: 480V
 Current Scale: X100

Calculation No. SGX-00048-01
 Attachment A1
 Page 19 of 45

Compartment 22C

TRM-BKR-SST#2

480 V
ANSI Sym 3P LV 60.000 kA

BKR-2A26BSST#2
Type DB-50/75

DB75-REACT-2A
Size
1/Phase
Type
Length 1000.0 ft

BUS-2A

480 V
ANSI Sym 3P LV 58.731 kA

DB50-REACT-22C
Size
1/Phase
Type
Length 1000.0 ft

BKR-2A22CCCP22
Type DB-50/75

TRM-2A22CCCP22

480 V
ANSI Sym 3P LV 55.227 kA

CBL-AG9-MM44/1
Size 750
1/Phase
Type
Length 1000.0 ft

MT-CCP22

480 V
ANSI Sym 3P LV 9.115 kA



M-BUS2A-CCP22*
RatedSize 285.00 hp
Load Factor 0.94
X"d 0.1777 pu

* - Horsepower is increased to 285 HP
based on Safety Injection Conditions.
Reference 6.2.13 - Calculation No FEX-00143-01

TCC Name: 2A-22C.tcc
Reference Voltage: 480
Current Scale X 10²

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AND APPLICATION BY A REGISTERED ENGINEER ONLY.
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Device Name:	M-BUS2A-CCP22	Bus Name:	MT-CCP22
Description:	Motor Starting Curve	Bus Voltage:	480V
Rated Size:	285HP	Fault Duty:	9114.7A
Starting Time:	1.25s	Full Voltage (Square Transient)	
Inrush:	5.4x (1731.4A)	FLA/Load Adder:	320.7A / 0.0A

Device Name:	CBL-AG9-MM44/1	Bus Name:	TRM-2A22CCCP22
Description:	Cable Damage Curve	Bus Voltage:	480V
Size:	750	Fault Duty:	55227.0A
Material:	Copper	Cont. Temp:	90 deg C.
Qty/Ph:	1	Damage Temp:	250 deg C.

Device Name:	BKR-2A22CCCP22	Bus Name:	TRM-2A22CCCP22
Description:	WESTINGHOUSE-DB-50/75-AMPTCT IA	Bus Voltage:	480.0V
AIC Rating:	30kA	Fault Duty:	55227.0A
Frame:	800 480V 800A 30kA 0kA 0kA	Curve Multiplier:	1.00000
Sensor:	400A		
Plug:			
Setting:	1) LTPU	1.1	
	2) LTD	4.0	
	3) INST	7.0	

Device Name:	BKR-2A26BSST#2	Bus Name:	TRM-BKR-SST#2
Description:	WESTINGHOUSE-DB-50/75-AMPTCT IA	Bus Voltage:	480.0V
AIC Rating:	65kA	Fault Duty:	60000.0A
Frame:	3200 480V 3200A 65kA 0kA 0kA	Curve Multiplier:	1.00000
Sensor:	3000A		
Plug:			
Setting:	1) LTPU	1.2	
	2) LTD	36.0	
	3) STPU	5	
	4) STD	0.5	

ENCLOSURE 3 TO NL-09-010

SAFETY INJECTION (SI) WITH AUTOMATIC LOADING ONLY

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

Calc By:

INDIAN POINT - UNIT 2 - LF ANAL. OF THE ELECT. DIST. SYSTEM

Calc. No. FEX-00143-01

Page 122 of 147

Chk'd By:

Table 8.6-1

SI - TOTAL AUTO AFTER SI INITIATION

GRID @ 141.44kV - OLTC Operating

SYSTEM	EQUIPMENT DESCRIPTION	VOLTAGE		POWER FLOW			LTC	REMARKS
		Volts	pu	kW	kVAR	kVA	Tap (%)	
480V	BUS 2A	481.3	1.0026	1472.0	827.0	1688.3		
	Pr. Heater 22 (480V)	481.3	1.0026	0.0	0.0	0.0		
	Ltg. Switch 22 (480V)	0.0	0.0000	0.0	0.0	0.0		
	MCC 28A (480V)	481.3	1.0026	0.0	0.0	0.0		
	MCC 210 (480V)	481.3	1.0026	0.0	0.0	0.0		
	MCC 24A (480V)	476.5	0.9928	384.4	259.6	463.8		
	MCC 23 (480V)	481.3	1.0026	0.0	0.0	0.0		
	MCC 21 (480V)	481.3	1.0026	0.0	0.0	0.0		
	RMG 21 (440V)	481.3	1.0938	0.0	0.0	0.0		
	CRF 23 (440V)	468.1	1.0639	256.5	145.7	295.0		
	CCP 22 (460V)	469.9	1.0214	230.9	123.2	261.7		
	SWP 22 (440V)	0.0	0.0000	0.0	0.0	0.0		
	SWP 25 ALT. SUP. (440V)			281.2	148.5	318.0		
	SIP 22 (440V)	475.0	1.0795	318.9	148.8	352.0		
	Total			1472.0	825.7	1687.7		
	BUS 3A	484.4	1.0092	1223.1	685.9	1402.3		
	Pr. Heater 21 (480V)	484.4	1.0092	0.0	0.0	0.0		
	Lighting Load 22 (208V)	209.9	1.0092	0.0	0.0	0.0		
	MCC 22 (480V)	484.4	1.0092	0.0	0.0	0.0		
	MCC 25 (480V)	484.4	1.0092	0.0	0.0	0.0		
	MCC 26C (480V)	482.8	1.0058	255.2	158.3	300.3		
	MCC 211 (480V)	484.4	1.0092	0.0	0.0	0.0		
	AFP 21 (440V)	477.2	1.0845	392.4	228.8	454.3		
	RHR 21 (460V)	478.0	1.0390	319.0	152.5	353.6		
	CRF 24 (440V)	471.5	1.0715	256.5	145.4	294.8		
	SWP 22 ALT. SUP. (440V)			0.0	0.0	0.0		
	SWP 25 (440V)	480.1	1.0912	0.0	0.0	0.0		
	SIP 22 ALT. SUP. (440V)			0.0	0.0	0.0		
	CHP 22 (460V)	484.4	1.0531	0.0	0.0	0.0		
	Total			1223.1	685.0	1401.9		

Calc By:

INDIAN POINT - UNIT 2 - LF ANAL. OF THE ELECT. DIST. SYSTEM

Calc. No. FEX-00143-01

Page 123 of 147

Chk'd By:

Table 8.6-1

SI - TOTAL AUTO AFTER SI INITIATION

GRID @ 141.44kV - OLTC Operating

SYSTEM	EQUIPMENT DESCRIPTION	VOLTAGE		POWER FLOW			LTC	REMARKS
		Volts	pu	kW	kVAR	kVA	Tap (%)	
480V	BUS 5A	475.3	0.9902	2060.8	1053.7	2314.6		
	Pr. Heater 23 (480V)	475.3	0.9902	0.0	0.0	0.0		
	Lighting Load 23 (208V)	0.0	0.0000	0.0	0.0	0.0		
	MCC 26A (480V)	470.0	0.9791	85.9	50.3	99.6		
	MCC 28 (480V)	475.3	0.9902	0.0	0.0	0.0		
	MCC 29A (480V)	474.1	0.9877	278.8	115.7	301.8		
	SIP 21 (440V)	469.3	1.0666	318.8	148.7	351.8		
	CSP 21 (460V)	467.5	1.0162	354.9	170.7	393.8		
	CRF 21 (440V)	470.3	1.0688	251.2	144.9	290.0		
	CRF 22 (440V)	464.5	1.0556	255.5	144.8	293.7		
	CCP 21 (460V)	466.3	1.0137	230.2	121.9	260.4		
	SWP 21 (440V)	475.3	1.0803	0.0	0.0	0.0		
	SWP 24 (440V)	464.5	1.0556	285.6	154.4	324.6		
	SAC (440V)	475.3	1.0803	0.0	0.0	0.0		
	RP 21 (440V)	475.3	1.0803	0.0	0.0	0.0		
	CHP 21 (460V)	475.3	1.0333	0.0	0.0	0.0		
	Total			2060.8	1051.3	2313.5		
	BUS 6A	471.7	0.9828	2277.3	1222.0	2584.4		
	Pr. Heater 24 (480V)	0.0	0.0000	0.0	0.0	0.0		
	Lighting Load 22 (208V)	209.9	1.0092	0.0	0.0	0.0		
	MCC 26B (480V)	467.8	0.9745	95.6	84.4	127.5		
	MCC 27A (480V)	471.7	0.9828	0.0	0.0	0.0		
	SIP 23 (440V)	465.4	1.0578	344.5	160.9	380.2		
	CSP 22 (460V)	463.7	1.0080	355.0	170.9	394.0		
	CRF 25 (440V)	456.4	1.0373	257.9	146.5	296.6		
	CCP 23 (460V)	460.6	1.0014	230.9	123.0	261.6		
	SWP 23 (440V)	471.7	1.0721	0.0	0.0	0.0		
	SWP 26 (440V)	461.9	1.0498	285.3	153.5	324.0		
	AFP 23 (440V)	465.1	1.0571	388.9	226.7	450.1		
	RHR 22 (460V)	464.8	1.0105	319.3	153.1	354.1		
	TAO (460V)	471.7	1.0255	0.0	0.0	0.0		
	RMG 22 (440V)	471.7	1.0721	0.0	0.0	0.0		
	Total			2277.3	1218.9	2583.0		

ENCLOSURE 4 TO NL-09-010

SAFETY INJECTION (SI) AUTOMATIC-MANUAL LOADING

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

Calc By:

INDIAN POINT - UNIT 2

Calc. No. FEX-00143-01

Chk'd By:

IP2 LOAD FLOW ANALYSIS OF THE ELECT. DIST. SYSTEM

Page 134 of 147

Table 8.7-1

SI - AUTO + MANUAL LOADING (GRID @ 145.44kV - OLTC Operating)

SYSTEM	EQUIPMENT DESCRIPTION	VOLTAGE		POWER FLOW			LTC	REMARKS
		Volts	pu	kW	kVAR	kVA	Tap (%)	
480V	BUS 2A	480.4	1.0007	1792.3	887.8	2000.1		
	Pr. Heater 22 (480V)	480.4	1.0007	0.0	0.0	0.0		
	Ltg. Switch 22 (480V)	479.6	0.9991	149.6	0.3	149.6		
	MCC 28A (480V)	480.4	1.0007	0.0	0.0	0.0		
	MCC 210 (480V)	479.9	0.9998	16.9	8.1	18.7		
	MCC 24A (480V)	475.6	0.9908	384.4	259.6	463.8		
	MCC 23 (480V)	478.7	0.9973	60.8	14.8	62.6		
	MCC 21 (480V)	474.8	0.9892	92.9	37.1	100.0		
	RMG 21 (440V)	480.4	1.0917	0.0	0.0	0.0		
	CRF 23 (440V)	467.2	1.0617	256.6	145.7	295.0		
	CCP 22 (460V)	468.9	1.0194	230.9	123.2	261.7		
	SWP 22 (440V)	478.3	1.0871	0.0	0.0	0.0		
	SWP 25 ALT. SUP. (440V)			281.2	148.5	318.0		
	SIP 22 (440V)	474.1	1.0774	319.0	148.9	352.0		
	Total			1792.3	886.1	1999.4		
	BUS 3A	479.4	0.9988	1758.8	958.2	2002.8		
	Pr. Heater 21 (480V)	479.4	0.9988	0.0	0.0	0.0		
	Lighting Load 22 (208V)	202.0	0.9710	164.0	85.9	185.1		
	MCC 22 (480V)	478.7	0.9973	29.6	13.5	32.6		
	MCC 25 (480V)	477.9	0.9956	60.4	23.2	64.7		
	MCC 26C (480V)	477.8	0.9953	255.3	158.3	300.4		
	MCC 211 (480V)	479.4	0.9988	0.0	0.0	0.0		
	AFP 21 (440V)	472.1	1.0729	392.5	228.9	454.4		
	RHR 21 (460V)	472.9	1.0280	319.1	152.6	353.7		
	CRF 24 (440V)	466.3	1.0598	256.6	145.6	295.0		
	SWP 22 ALT. SUP. (440V)			281.2	148.3	318.0		
	SWP 25 (440V)	479.2	1.0890	0.0	0.0	0.0		
	SIP 22 ALT. SUP. (440V)			0.0	0.0	0.0		
	CHP 22 (460V)	479.4	1.0422	0.0	0.0	0.0		
	Total			1758.8	956.5	2002.0		

Calc By:

INDIAN POINT - UNIT 2

Calc. No. FEX-00143-01

IP2 LOAD FLOW ANALYSIS OF THE ELECT. DIST. SYSTEM

Page 135 of 147

Chk'd By:

Table 8.7-1

SI - AUTO + MANUAL LOADING (GRID @ 145.44kV - OLTC Operating)

SYSTEM	EQUIPMENT DESCRIPTION	VOLTAGE		POWER FLOW			LTC	REMARKS
		Volts	pu	kW	kVAR	kVA	Tap (%)	
480V	BUS 5A	474.3	0.9881	2339.3	1125.1	2595.8		
	Pr. Heater 23 (480V)	474.3	0.9881	0.0	0.0	0.0		
	Lighting Load 23 (208V)	203.4	0.9778	150.9	5.4	151.0		
	MCC 26A (480V)	468.9	0.9769	86.0	50.4	99.6		
	MCC 28 (480V)	474.3	0.9881	0.0	0.0	0.0		
	MCC 29A (480V)	473.1	0.9856	278.6	115.6	301.6		
	SIP 21 (440V)	468.3	1.0643	318.9	148.7	351.8		
	CSP 21 (460V)	466.4	1.0139	354.9	170.8	393.8		
	CRF 21 (440V)	469.2	1.0665	251.2	144.9	290.0		
	CRF 22 (440V)	463.4	1.0532	255.5	144.8	293.7		Bus 5A Current (Amps) Through the Amptector=
	CCP 21 (460V)	465.3	1.0114	230.2	121.9	260.4		
	SWP 21 (440V)	474.3	1.0779	0.0	0.0	0.0		3158.33
	SWP 24 (440V)	463.4	1.0532	285.6	154.5	324.7		
	SAC (440V)	474.3	1.0779	0.0	0.0	0.0		
	RP 21 (440V)	474.3	1.0779	0.0	0.0	0.0		
	CHP 21 (460V)	468.5	1.0185	127.7	65.2	143.4		
	Total			2339.3	1122.1	2594.5		
	BUS 6A	471.0	0.9813	2502.9	1281.6	2811.9		
	Pr. Heater 24 (480V)	0.0	0.0000	0.0	0.0	0.0		
	Lighting Load 22 (208V)	202.0	0.9710	0.0	0.0	0.0		
	MCC 26B (480V)	467.1	0.9730	95.6	84.4	127.5		
	MCC 27A (480V)	468.9	0.9768	225.5	58.9	233.0		
	SIP 23 (440V)	464.7	1.0562	344.5	161.0	380.3		
	CSP 22 (460V)	463.0	1.0065	355.0	170.9	394.0		
	CRF 25 (440V)	455.7	1.0357	257.9	146.5	296.6		Bus 6A Current (Amps) Through the Amptector=
	CCP 23 (460V)	459.9	0.9999	230.9	123.0	261.6		
	SWP 23 (440V)	471.0	1.0705	0.0	0.0	0.0		3444.51
	SWP 26 (440V)	461.2	1.0482	285.3	153.5	324.0		
	AFP 23 (440V)	464.4	1.0555	388.9	226.7	450.1		
	RHR 22 (460V)	464.1	1.0090	319.3	153.1	354.1		
	TAO (460V)	0.0	0.0000	0.0	0.0	0.0		
	RMG 22 (440V)	471.0	1.0705	0.0	0.0	0.0		
	Total			2502.9	1278.0	2810.3		

ENCLOSURE 5 TO NL-09-010

LOADING FOR VARIOUS 480V MOTOR CONTROL CENTERS

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

**INDIAN POINT UNIT 2
480V SAFETY RELATED MCCS**

CALCULATION NO. FEX-00143-01
ATTACHMENT 1
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DESCRIPTION	POWERED FROM	SECTION	NORMAL POWER OPERATION	UNIT TRIP/HOT SHUTDOWN		PLANT SHUTDOWN WITH POWER FROM 13.8KV SOURCE	RECIRCULATION	SAFETY INJECTION WITH 138KV OFFSITE PWR AVAILABLE			COLD SHUTDOWN
				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
6.9KV BUS DUCT HEATER	MCC 24	6BL	OFF (NOTE 17)	OFF (NOTE 17)	OFF (NOTE 17)	OFF (NOTE 17)	OFF (NOTE 17)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 17)
GEN STATOR COOLING WATER PUMP 22	MCC 24	5M	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 47)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 71)
INSTRUMENT AIR DRYER	MCC 24	5DR	ON (REF. 56)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 58)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 56)
ISOPHASE BUS COOLING FAN 22	MCC 24	2F	ON (REF. 57)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 57)
ISOPHASE BUS COOLING FAN 24	MCC 24	3F	ON (REF. 57)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 57)
ISOPHASE BUS COOLING FAN 26	MCC 24	4F	ON (REF. 57)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 57)
MAIN TRANSF 21 AUX LOAD NORM FEED	MCC 24	6M	ON (NOTE 8)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)
MAIN TRANSF 22 AUX LOAD EMERG FEED	MCC 24	6H	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)
MAIN TURB-GEN TURNING GEAR	MCC 24	1M	OFF (REF. 46)	OFF (NOTE 6)	ON (REF. 89)	OFF (REF. 46)	OFF (REF. 46)	OFF (REF. 46)	OFF (REF. 46)	OFF (REF. 46)	OFF (REF. 46)
PA SYSTEM ALTERNATE SUPPLY	MCC 24	5DL	OFF (NOTE 52)	OFF (NOTE 52)	OFF (NOTE 52)	ON (REF. 90)	OFF (NOTE 52)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 52)
ROD CONTROL SYSTEM TRANSFER & POS INDICATION SUPPLY TRANSFORMER	MCC 24	6BR	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 47)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
ROOF VENT FAN 21	MCC 24	2H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
ROOF VENT FAN 22	MCC 24	2K	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
ROOF VENT FAN 23	MCC 24	2M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
ROOF VENT FAN 24	MCC 24	3H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
ROOF VENT FAN 25	MCC 24	3K	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
STATION AUX TRANSF AUX LOAD NORM FEED	MCC 24	2BR	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 8)
UNIT AUX TRANSF AUX LOAD EMERG FEED	MCC 24	2BL	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	ON (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)
VOLTAGE REGULATOR INVERTER	MCC 24	4D	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 45)	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
WALL EXHAUST FAN 21	MCC 24	4H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
WALL EXHAUST FAN 22	MCC 24	4K	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
WALL EXHAUST FAN 23	MCC 24	4M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
WALL EXHAUST FAN 24	MCC 24	3B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
WALL EXHAUST FAN 25	MCC 24	3D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
BATTERY CHARGER 22	MCC 24A	2E	ON (REF. 42)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 47)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 42)
DIESEL GEN 22 AUXILIARIES	MCC 24A	2C	ON (REF. 43)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)
INSTRUMENT AIR CCW PUMP 22	MCC 24A	4A	ON (REF. 62)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 30)	ON (NOTE 21)	ON (REF. 51)	ON (REF. 51)	ON (REF. 51)	ON (REF. 62)
INSTRUMENT AIR COMPRESSOR 22	MCC 24A	3C	ON (REF. 62)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 30)	ON (REF. 40)	ON (REF. 51)	ON (REF. 51)	ON (REF. 51)	ON (REF. 62)
RAD MONITOR DISTRIBUTION PANEL	MCC 24A	2A	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
STATIC INVERTER 22 BYPASS SWITCH	MCC 24A	4D	OFF (NOTE 52)	OFF (NOTE 52)	OFF (NOTE 52)	ON (REF. 90)	OFF (NOTE 52)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 52)
AUX COMPONENT COOLING PUMP 21	MCC 26A	6KR	OFF (REF. 37)	OFF (REF. 37)	OFF (REF. 37)	OFF (REF. 37)	ON (REF. 40)	ON (REF. 37)	ON (REF. 37)	ON (REF. 37)	OFF (REF. 37)
BORIC ACID HEAT TRACING NORMAL FEED	MCC 26A	6HR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 22)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
EDG HVAC VENT DISTRIBUTION PANEL 1	MCC 26A	1DR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 22)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
ELECTRICAL TUNNEL EXHAUST FAN 21	MCC 26A	1B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 47)	ON (NOTE 22)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
RAD MONITOR DISTRIBUTION PANEL EPV21	MCC 26A	1D	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
RAD MONITOR DISTRIBUTION PANEL EPX3	MCC 26A	6H	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)

**INDIAN POINT UNIT 2
480V SAFETY RELATED MCCS**

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DESCRIPTION	POWERED FROM	SECTION	NORMAL POWER OPERATION	UNIT TRIP/HOT SHUTDOWN		PLANT SHUTDOWN WITH POWER FROM 13.8KV SOURCE	RECIRCULATION	SAFETY INJECTION WITH 138KV OFFSITE PWR AVAILABLE			COLD SHUTDOWN
				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
STATIC INVERTER 21 BYPASS SWITCH	MCC 26A	6FRR	OFF (NOTE 52)	OFF (NOTE 52)	OFF (NOTE 52)	ON (REF. 90)	OFF (NOTE 52)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 52)
CANBERRA SYSTEM ISOTOPIC ANALYZER	MCC 26AA	M3	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
HYDROGEN AND OXYGEN ANALYZER CH 1	MCC 26AA	L4	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
120V AC DIST PANEL 1 TRANSFORMER	MCC 26AA	L3	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
AUX COMPONENT COOLING PUMP 22	MCC 26B	5KR	OFF (REF. 37)	OFF (REF. 37)	OFF (REF. 37)	OFF (REF. 37)	ON (REF. 40)	ON (REF. 37)	ON (REF. 37)	ON (REF. 37)	OFF (REF. 37)
BORIC ACID HEAT TRACING EMERG FEED	MCC 26B	6DR	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 8)	OFF (NOTE 8)
BORIC ACID TRANSFER PUMP 22	MCC 26B	7M	ON (REF. 61)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 47)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (REF. 61)
CONTROL ROOM AC DISTRIBUTION PANEL	MCC 26B	7D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
DIESEL GEN 23 AUXILIARIES	MCC 26B	6BRR	ON (REF. 43)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)
EDG BUILDING EXHAUST FAN 318	MCC 26B	5MRL	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
EDG BUILDING EXHAUST FAN 323	MCC 26B	5MRR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
ELECTRICAL TUNNEL EXHAUST FAN 22	MCC 26B	1B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 47)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
120V AC DIST PANEL 2 TRANSFORMER	MCC 26BB	B3	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
HYDROGEN AND OXYGEN ANALYZER CH 2	MCC 26BB	B4	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
SAMPLING ROOM EXHAUST FAN	MCC 26BB	A2	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 32)
BATTERY CHARGER 23	MCC 26C	3F	ON (REF. 42)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 47)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 42)
BORIC ACID TANK 21 HEATERS	MCC 26C	3A	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
BORIC ACID TRANSFER PUMP 21	MCC 26C	3N	ON (REF. 61)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 47)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (REF. 61)
CCR VENT PWR DISTRIBUTION PANEL	MCC 26C	4F	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
DIESEL GEN VENT DISTRIBUTION PANEL	MCC 26C	5L	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 39)
PAB EXHAUST FAN 21	MCC 26C	2B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
PRIMARY WATER MAKEUP PUMP 21	MCC 26C	3H	OFF (NOTE 46)	OFF (NOTE 6)	OFF (NOTE 6)	ON (NOTE 47)	ON (NOTE 21)	ON (NOTE 58)	ON (NOTE 58)	ON (NOTE 58)	ON (NOTE 46)
WALL EXHAUST FAN 213	MCC 26C	5A	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 22)
SPENT FUEL PUMP 21	MCC 26C	1A	ON (NOTE 41)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 41)
5 TON OVERHEAD CRANE & LIFTING BEAM	MCC 27	5DR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
ACCUMULATOR TOPPING PUMP	MCC 27	3E	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
AUX FEEDWATER PUMP HOUSE HEATERS	MCC 27	8BL	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
BORIC ACID PACKAGE ROOM HEATER	MCC 27	8D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
BORIC ACID TANK 22 HEATERS	MCC 27	3DR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
CB PRESSURE RELIEF FAN	MCC 27	3MR	OFF (REF. 76)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 76)
CB PURGE SUPPLY FAN	MCC 27	2E	OFF (REF. 76)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (REF. 76)
CHARCOL FILTER FIRE PROT DRAIN LINE PUMP	MCC 27	8MR	OFF (NOTE 44)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 44)
CVCS HOLDUP TANK TRANSFER PUMP 21	MCC 27	6BR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
CVCS HOLDUP TANK TRANSFER PUMP 22	MCC 27	5FR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
CVCS HOLDUP TANK TRANSFER PUMP 23	MCC 27	7MRR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)

**INDIAN POINT UNIT 2
480V SAFETY RELATED MCCS**

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DESCRIPTION	POWERED FROM	SECTION	NORMAL POWER OPERATION	UNIT TRIP/HOT SHUTDOWN		PLANT SHUTDOWN WITH POWER FROM 13.8KV SOURCE	RECIRCULATION	SAFETY INJECTION WITH 138KV OFFSITE PWR AVAILABLE			COLD SHUTDOWN
				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
FCV1171/1173 ENCLOSURE HEATING/LIGHTING	MCC 27	1BRR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	ON (NOTE 39)
FSB NEW FUEL ELEVATOR	MCC 27	5BR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
FSB OVERHEAD CRANE	MCC 27	4D	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
FUEL STORAGE BLDG SUMP PUMP 28	MCC 27	4MR	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
FUEL TRANSFER LIFTING FRAME	MCC 27	5DL	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
GAS STRIPPER 21	MCC 27	2MRR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
HEAT TRACING TRANSF 24 (DG & TANK FARM)	MCC 27	1MRR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
HIGH RAD SAMPLING SYSTEM PUMP 2	MCC 27	2FR	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
HOLD-UP TANK RECIRCULATION PUMP	MCC 27	6H	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
HOT PIPING PENETRATION BLOWER 21	MCC 27	7H	ON (NOTE 34)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 63)
HOT PIPING PENETRATION BLOWER 22	MCC 27	7K	OFF (NOTE 34)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 63)
HOT PIPING PENETRATION BLOWER 23	MCC 27	7D	ON (NOTE 34)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 63)
HOT PIPING PENETRATION BLOWER 24	MCC 27	7F	OFF (NOTE 34)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 63)
LIGHTING PANEL 223	MCC 27	7MR	ON (NOTE 32)	ON (NOTE 32)	ON (NOTE 32)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	ON (NOTE 32)
PAB CONDENSATE RETURN PUMP 23A	MCC 27	8F	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 45)
PAB CONDENSATE RETURN PUMP 23B	MCC 27	8H	OFF (NOTE 45)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 45)
PAB CONDENSATE RETURN PUMP 24A	MCC 27	8K	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 45)
PAB CONDENSATE RETURN PUMP 24B	MCC 27	8M	OFF (NOTE 45)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 45)
PAB HEATER DISTRIBUTION PANEL	MCC 27	9M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
PAB SUMP PUMP 23	MCC 27	1KR	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
PAB SUMP PUMP 25 / 25A	MCC 27	2DR	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
PAB SUMP TANK PUMP 21	MCC 27	5F	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
PAB SUMP TANK PUMP 22	MCC 27	6K	OFF (NOTE 45)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
PAB WELDING PANEL	MCC 27	3KR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
PAB WELDING RECEPTACLES	MCC 27	3BR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
PRIMARY WATER MAKEUP PUMP 22	MCC 27	5KR	ON (NOTE 46)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 46)
REFUELING WATER PURIFICATION PUMP	MCC 27	3HR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 45)
SPENT FUEL BRIDGE	MCC 27	5BL	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
STRIP HEATERS TRANSFORMER 23	MCC 27	4BLR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
STRIP HEATERS TRANSFORMER 24	MCC 27	4BRR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
WASTE CONDENSATE PUMP 21	MCC 27	1DR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 45)
WASTE EVAPORATOR FEED PUMP 21 AND TRANSFER PUMP 21	MCC 27	6MR	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
WASTE GAS COMPRESSOR 21	MCC 27	5MR	ON (NOTE 42)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 42)
WASTE GAS COMPRESSOR 22	MCC 27	6KR	OFF (NOTE 42)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 42)
WASTE HOLDUP TANK PIT SUMP PUMP 22	MCC 27	2KR	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)

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				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
WELDING RECEPTACLES	MCC 27	5H	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 23)
BALER FEEDER	MCC 27	1MLR	ON (REF. 60)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 22)
CHEMICAL DRAIN TANK PUMP	MCC 27	6FR	ON (REF. 81)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (REF. 81)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (REF. 81)
BATTERY CHARGER 24	MCC 27A	4E	ON (REF. 42)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 47)	ON (REF. 40)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	ON (REF. 42)
FUEL STORAGE BLDG EXHAUST FAN	MCC 27A	5J	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	OFF (REF. 40)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 39)
PAB EXHAUST AND CB PURGE FAN 22	MCC 27A	3J	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	OFF (REF. 40)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 39)
PAB SUPPLY FAN	MCC 27A	6L	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	OFF (REF. 40)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	ON (NOTE 39)
PLANT VENT SAMPLE STATION COMPRESSOR	MCC 27A	3A	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	OFF (REF. 40)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 22)
SPENT FUEL PUMP 22	MCC 27A	4J	OFF (NOTE 41)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 38)	OFF (NOTE 6)	OFF (NOTE 55)	OFF (NOTE 55)	OFF (NOTE 58)	OFF (NOTE 41)
STATIC INVERTER 24 BYPASS SWITCH	MCC 27A	5E	OFF (NOTE 52)	OFF (NOTE 52)	OFF (NOTE 52)	ON (REF. 90)	OFF (NOTE 52)	OFF (NOTE 55)	OFF (NOTE 55)	ON (NOTE 58)	OFF (NOTE 52)
DIESEL GENERATOR BLDG HEATERS	MCC 29	4M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
HIGH RAD SAMPLING SYSTEM PUMP 1	MCC 29	6B	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 40)
MAIN TRANSF 21 AUX LOAD EMERG FEED	MCC 29	6M	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 56)	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 8)
MAIN TRANSF 22 AUX LOAD NORMAL FEED	MCC 29	6H	ON (NOTE 8)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 56)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)	OFF (NOTE 33)
STATION AUX TRANSF AUX LOAD EMERG FEED	MCC 29	2BR	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 8)	OFF (NOTE 56)	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 8)
STRAINER PIT HEATERS	MCC 29	1ER	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
STRIP HEATERS TRANSFORMER 21	MCC 29	4BR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 8)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
STRIP HEATERS TRANSFORMER 22	MCC 29	4BL	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
UNIT AUX TRANSF AUX LOAD NORMAL FEED	MCC 29	2BL	ON (NOTE 8)	ON (NOTE 8)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 22)
WALL EXHAUST FAN 216	MCC 29	4H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 56)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 22)
BATTERY CHARGER 21	MCC 29A	3J	ON (REF. 42)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 47)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 42)
DIESEL GEN 21 AUXILIARIES	MCC 29A	3E	ON (REF. 43)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (REF. 43)
INSTRUMENT AIR CCW PUMP 21	MCC 29A	3C	ON (REF. 62)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 30)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (REF. 22)
INSTRUMENT AIR COMPRESSOR 21	MCC 29A	3L	ON (REF. 62)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 30)	ON (REF. 40)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	OFF (REF. 22)
STATIC INVERTER 23 BYPASS SWITCH	MCC 29A	3A	OFF (NOTE 52)	OFF (NOTE 52)	OFF (NOTE 52)	ON (REF. 90)	OFF (NOTE 52)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 52)
WALL EXHAUST FAN 215	MCC 29A	3G	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 21)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 22)

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				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
CATHODIC PROTECTION RECTIFIER #21	MCC 21	1DR	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
CHLORINATION PUMP 21	MCC 21	1BL	ON (NOTE 36)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 36)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 36)
CHLORINATION PUMP 22	MCC 21	1BR	OFF (NOTE 36)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 36)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 36)
HEAT TRACING TRANSFORMER 21 INTAKE AREA	MCC 21	3M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
LIGHTING PANEL 21	MCC 21	1F	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
SCREEN 27 HEATER	MCC 21	3BR	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
SERVICE WATER PIT SUMP PUMP 26	MCC 21	3H	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 43)
TEMP FEED WELDING	MCC 21	4HR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
TRAVEL SCREEN 27 / CONTROL PANEL	MCC 21	3F	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 21	MCC 21	4K	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 22	MCC 21	4F	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 23	MCC 21	4D	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 24	MCC 21	3D	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 25	MCC 21	2M	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
TRAVELING SCREEN 26	MCC 21	2K	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 32)
WELDING RECEPTACLE 1	MCC 21	3K	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
ZURN STRAIN-O-MATIC CABINET STRIP HEATERS	MCC 21	1DL	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
LIGHTING PANEL 225	MCC 210	1F	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
ROOF VENT FAN 213	MCC 210	6C	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
ROOF VENT FAN 214	MCC 210	6E	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
ROOF VENT FAN 215	MCC 210	7C	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
ROOF VENT FAN 216	MCC 210	7E	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
SERVICE BOILER FORCED DRAFT FAN 21	MCC 210	2G	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
SERVICE BOILER FORCED DRAFT FAN 22	MCC 210	2J	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
SERVICE BOILERS FUEL OIL PUMP 21	MCC 210	4B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
SERVICE BOILERS FUEL OIL PUMP 22	MCC 210	4D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
SERVICE BOILERS FUEL OIL PUMP 23	MCC 210	5B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)

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				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
HYPOCHLORITE PUMP 11	MCC 212	1T	OFF (NOTE 48)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 38)	ON (NOTE 51)	OFF (NOTE 51)	OFF (NOTE 51)	OFF (NOTE 51)	OFF (NOTE 48)
SCREEN 11/12 FEEDER	MCC 212	1H	ON (NOTE 48)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	OFF (NOTE 48)
HEAT TRACE PANEL 21A	MCC 213		ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	OFF (NOTE 22)
HYPOCHLORITE PUMP 12	MCC 213	1E	ON (NOTE 48)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 38)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	OFF (NOTE 48)
SCREEN 28 HEATER	MCC 213	1P	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	OFF (NOTE 22)
SCREEN 28 POWER SUPPLY	MCC 213	1L	ON (NOTE 48)	ON (NOTE 6)	ON (NOTE 6)	ON (NOTE 50)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 51)	ON (NOTE 48)
BF PUMPS SEAL WATER DRAIN TANK PUMP	MCC 22	4D	ON (REF. 66)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 66)
BFP 21 TURNING GEAR DRIVE	MCC 22	4H	OFF (REF. 66)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 66)
BFP OIL CONSOLE MAIN OIL PUMP 21	MCC 22	7M	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (REF. 91)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 67)
BFP TURBINE DRIP TANK DRAIN PUMP 21	MCC 22	3M	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 68)
CARBON DIOXIDE UNIT	MCC 22	1ML	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
CLOSED LOOP SYSTEM COOLING WATER PUMP 21	MCC 22	5B	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 69)
CONDENSER VACUUM PUMP 21	MCC 22	2M	OFF (REF. 82)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 82)
DE-ICING PIT SUMP PUMP 21	MCC 22	4F	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
EXCITER CUBICLE FIELD FLASHING	MCC 22	5FL	OFF (NOTE 37)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 37)
FORK LIFT BATTERY CHARGER	MCC 22	4B	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 32)
GEN STATOR COOLING WATER PUMP 21(B)	MCC 22	6M	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 71)
GENERREX CUBICLE HEATERS	MCC 22	5FR	OFF (NOTE 49)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
HOTWELL DUMP PUMP	MCC 22	5H	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 45)
ISOPHASE BUS COOLING FAN 21	MCC 22	1F	OFF (REF. 57)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 57)
ISOPHASE BUS COOLING FAN 23	MCC 22	1H	OFF (REF. 57)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 57)
ISOPHASE BUS COOLING FAN 25	MCC 22	1K	OFF (REF. 57)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 57)
MAIN GEN HYDROGEN DRYER	MCC 22	3D	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 45)
MAIN SEAL OIL PUMP	MCC 22	2E	ON (REF. 83)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (REF. 91)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 83)
RECIRCULATING SEAL OIL PUMP	MCC 22	3F	ON (REF. 83)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 83)
ROTARY BLOWER SJAE VENT	MCC 22	7D	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 45)
STEAM & WATER ANALYSIS SAMPLE PUMPS	MCC 22	1MR	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)

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				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
STEAM HEATING CONDENSATE RECEIVER PUMP 21	MCC 22	5M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 22)
WELDING RECEPTACLES (6)	MCC 22	3H	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
BFP OIL CONSOLE MAIN OIL PUMP 22	MCC 23	8M	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (REF. 91)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 67)
BFP OIL CONSOLE TRANSFER PUMP	MCC 23	6D	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
BFP SEAL INJECTION BOOSTER PUMP 21	MCC 23	6F	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 66)
BFP TURBINE DRIP TANK DRAIN PUMP 22	MCC 23	6K	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 68)
BFP TURNING GEAR DRIVE	MCC 23	5M	OFF (REF. 66)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 66)
CLOSED LOOP SYSTEM COOLING WATER PUMP 22	MCC 23	3H	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 69)
CONDENSER VACUUM PUMP 22	MCC 23	2M	OFF (REF. 82)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 82)
HOIST TROLLEY & BRIDGE HEATER BAY CRANES (2)	MCC 23	3D	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 23)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
MBFP LUBE OIL SEPARATOR OIL HEATER	MCC 23	1M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
OILY WATER SEPARATOR	MCC 23	2E	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
RCP MOTOR HTR	MCC 23	4H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
SEAL OIL VACUUM PUMP	MCC 23	5F	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 45)
SERVICE WATER VALVE PIT SUMP PUMP 27	MCC 23	6M	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 43)
STEAM HEATING CONDENSATE RECEIVER PUMP 22	MCC 23	6H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
TURB-GEN BLDG CONDENSATE PUMP PIT SUMP 212	MCC 23	3M	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 43)
TURB-GEN BLDG CONDENSER PIT SUMP PUMP 24	MCC 23	6B	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 43)
VOLTAGE REG CUB INVERTER #2	MCC 23	2C	ON (REF. 70)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (REF. 70)
WATER CHLORIDE ANALYZER SYSTEM	MCC 23	4F	ON (NOTE 40)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	ON (NOTE 40)
WELDING RECEPTACLES (5)	MCC 23	1E	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
WEST FALIA OIL SEPARATOR	MCC 23	3F	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
AFW BUILDING VENT FANS AND HEATERS	MCC 25	5ER	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
BEARING LIFT PUMP	MCC 25	4E	OFF (REF.44)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF.44)
BEARING OIL PUMP	MCC 25	4M	OFF (NOTE 24)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	ON (REF. 91)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 24)
BFP SEAL INJECTION BOOSTER PUMP 22	MCC 25	3D	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (REF. 66)
GLAND STEAM CONDENSER AIR EXHAUSTER	MCC 25	3H	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 45)

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DESCRIPTION	POWERED FROM	SECTION	NORMAL POWER OPERATION	UNIT TRIP/HOT SHUTDOWN		PLANT SHUTDOWN WITH POWER FROM 13.8KV SOURCE	RECIRCULATION	SAFETY INJECTION WITH 138KV OFFSITE PWR AVAILABLE			COLD SHUTDOWN
				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
HEAT TRACING TRANSFORMER 22 YARD AREA	MCC 25	5EL	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	ON (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	ON (NOTE 58)	OFF (NOTE 22)
LUBE OIL BOOSTER PUMP AND SLUDGE TANK TRANSFER PUMP	MCC 25	6LL	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
OIL STORAGE TRANSFER & CLEAN-UP PUMP	MCC 25	3K	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
OIL VAPOR EXTRACTOR OIL RESEVOIR	MCC 25	3B	ON (REF. 73)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (REF. 73)
ROOF VENT FAN 210	MCC 25	2K	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
ROOF VENT FAN 211	MCC 25	2M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 39)
ROOF VENT FAN 26	MCC 25	2B	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
ROOF VENT FAN 27	MCC 25	2D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
ROOF VENT FAN 28	MCC 25	2F	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
ROOF VENT FAN 29	MCC 25	2H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
TURB OIL RESEVOIR TRANSFER PUMP	MCC 25	3M	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 22)
TURBINE OIL CONDITIONER CIRCULATING PUMP	MCC 25	3F	ON (NOTE 45)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
TURNING GEAR OIL PUMP	MCC 25	5M	OFF (REF. 46)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	ON (REF. 91)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (REF. 46)
WALL EXHAUST FAN 210	MCC 25	1M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
WALL EXHAUST FAN 26	MCC 25	1D	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 21)
WALL EXHAUST FAN 27	MCC 25	1F	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	ON (NOTE 21)
WALL EXHAUST FAN 28	MCC 25	1H	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
WALL EXHAUST FAN 29	MCC 25	1K	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 22)
WESTFALIA OIL SEPARATOR & HOIST	MCC 25	6LR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 58)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
WELDING RECEPTACLES	MCC 25	1B	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 23)	OFF (NOTE 57)	OFF (NOTE 57)	OFF (NOTE 58)	OFF (NOTE 23)
CONTAINMENT SUMP PUMP #29 EL 46'-0"	MCC 28	4C	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 22)
CONTROL ROD DRIVE COOLING FAN 21 (NORM PWR)	MCC 28	2D	ON (REF. 59)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 22 (NORM PWR)	MCC 28	2F	ON (REF. 59)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 23 (NORM PWR)	MCC 28	2H	ON (REF. 59)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 24 (NORM PWR)	MCC 28	2K	ON (REF. 59)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
FUEL TRANSFER LIFTING FRAME	MCC 28	3BR	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 23)
HEAD BOLT TENSIONER HOIST	MCC 28	3BL	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 23)

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DESCRIPTION	POWERED FROM	SECTION	NORMAL POWER OPERATION	UNIT TRIP/HOT SHUTDOWN		PLANT SHUTDOWN WITH POWER FROM 13.8KV SOURCE	RECIRCULATION	SAFETY INJECTION WITH 138KV OFFSITE PWR AVAILABLE			COLD SHUTDOWN
				LOAD AT THE TIME OF BUS TRANSFER (AUTO)	AUTO + MANUAL LOADING			AUTO LOAD AT THE TIME OF BUS TRANSFER (AT 30 SEC)	AUTO LOAD AT THE END OF AUTOMATIC LOAD SEQUENCE (AFTER 30 SEC)	AUTO + MANUAL LOADING	
IN CORE (DETECTOR DRIVES) INSTRUMENTATION	MCC 28	2BR	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	ON (NOTE 32)
IODINE FILTER AND FAN 21	MCC 28	1M	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	ON (NOTE 32)
IODINE FILTER AND FAN 22	MCC 28	2M	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	ON (NOTE 32)
MANIPULATOR CRANE	MCC 28	2BL	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 23)
POLAR CRANE	MCC 28	4M	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 23)
RCP21 BEARING OIL LIFT PUMP	MCC 28	3D	OFF (NOTE 35)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 35)
RCP24 BEARING OIL LIFT PUMP	MCC 28	3K	OFF (NOTE 35)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 35)
REACTOR CAVITY SUMP PUMP #1	MCC 28	4CB	ON (REF. 72)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 72)
REACTOR COOLANT DRAIN PUMP 21	MCC 28	1E	ON (NOTE 53)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 72)
REACTOR COOLANT DRAIN PUMP 22	MCC 28	1K	OFF (NOTE 53)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 72)
STEAM GENERATOR EXHAUST FAN	MCC 28	3M	ON (NOTE 39)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 22)
WELDING RECEPTACLES (4)	MCC 28	1B	OFF (NOTE 23)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 23)
RCP22 BEARING OIL LIFT PUMP	MCC 28	3F	OFF (NOTE 35)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 35)
RCP23 BEARING OIL LIFT PUMP	MCC 28	3H	OFF (NOTE 35)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 35)
C.C.T.V. SYSTEMS	MCC 28A	4A	ON (NOTE 32)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	ON (NOTE 32)
CONTAINMENT SUMP PUMP #210	MCC 28A	2C	ON (NOTE 43)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 72)
CONTROL ROD DRIVE COOLING FAN 21 (ALT PWR)	MCC 28A	1A	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 22 (ALT PWR)	MCC 28A	1B	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 23 (ALT PWR)	MCC 28A	1C	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
CONTROL ROD DRIVE COOLING FAN 24 (ALT PWR)	MCC 28A	2A	OFF (NOTE 8)	OFF (NOTE 6)	OFF (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 59)
REACTOR CAVITY SUMP PUMP #2	MCC 28A	4B	ON (REF. 72)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (REF. 72)
RHR PURIFICATION SYS. BOOSTER PUMP	MCC 28A	2B	ON (REF. 80)	ON (NOTE 6)	ON (NOTE 6)	OFF (NOTE 27)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	OFF (NOTE 25)	ON (REF. 80)

NOTES:

1. THREE SERVICE WATER PUMPS ARE REQUIRED TO BE OPEARBLE ON THE ESSENTIAL HEADER AND TWO SERVICE WATER PUMPS ARE REQUIRED TO BE OPERABLE ON NON-ESSENTIAL HEADFER WHEN REACTOR COOLANT TEMPERATURE IS OVER 350⁰ F TO SATISFY TECHNICAL SPECIFICATION REQUIREMENTS (REF. 25). SERVICE WATER PUMPS 23/24/25 ARE CONSIDERED ALIGNED FOR ESSENTIAL HEADER AND 21/22/23 ARE CONDIDERED ALIGNED FOR NON-ESSENTIAL HEADER. TWO SERVICE WATER PUMPS FROM EACH GROUP ARE CONSIDERED RUNNING IN NORMAL POWER OPERATION.
2. ON UNIT TRIP, CONDENSATE PUMP 22 TRIPS AUTOMATICALLY PER REF. 4. ONE MORE CONDENSATE PUMP (EITHER PUMP 21 OR 23) IS MANUALLY TRIPPED BY OPERATOR PER REF. 7.
3. ANY ONE CHARGING PUMP IS REQUIRED TO SHUTDOWN THE REACTOR (REF.10). DURING NORMAL POWER OPERATION, ONE CHARGING PUMP IS RUNNING IN MANUAL, AND THE SECOND PUMP IS MAINTAINED IN AUTO (REF. 9). CHARGING PUMP 21 IS CONSIDERED RUNNING IN NORMAL POWER OPERATION.
4. OPERATOR STARTS ANY CHARGING PUMP MANUALLY PER REF 11. CHARGING PUMP 21 IS CONSIDERED MANUALLY STARTED BY THE OPERATOR.
5. TWO COMPONENT COOLING PUMPS (21 AND 22) ARE CONSIDERED RUNNING IN NORMAL POWER OPERATION AND ONE PUMP (21) IS CONSIDERED RUNNING IN COLD SHUTDOWN PER REF. 12
6. COMPONENT STATUS WILL REMAIN SAME AS THE PREVIOUS OPERATING CONDITION, AS THE BUS REMAINS ENERGIZED AND NO MANUAL/AUTOMATIC START/STOP SIGNAL IS GIVEN TO THE COMPONENT.
7. ALL FIVE CONTAINMENT RECIRCULATION FANS ARE REQUIRED TO BE OPERABLE WHEN RCS TEMPERATURE IS ABOVE 350 DEG F (REF. 13 & 14).
8. ANY LOAD HAVING TWO POWER SOURECS - NORMAL AND EMERGENCY/ALTERNATE IS CONSIDERED RUNNING FROM NORMAL POWER SOURCE, WHEN BOTH POWER SOURCES ARE AVAILABLE.
9. ALL CIRCULATING WATER PUMPS ARE CONSIDERED OPERATING AT LOW SPEED PER REF. 16.
10. PER REF. 19, CONTROL (MODULATING) GROUP 24 HEATERS CAN MAINTAIN THE SYSTEM OPERATING PRESSURE AT NORMAL LEVEL DURING NORMAL POWER OPERATION. PER REF. 20, ONE SET OF BACKUP HEATERS ARE KEPT ON, WHILE CONTROL (MODULATING) GROUP 24 HEATERS AND THE OTHER SET OF BACKUP HEATERS ARE MAINTAINED IN AUTO POSITION. BACKUP GROUP 21 HEATERS AND CONTROL GROUP 24 HEATERS ARE CONSIDERED RUNNING FOR CONSERVATISM.

11. THE UNIT 2 STATION AIR SYSTEM CAN BE SUPPLIED FROM UNIT 1 SERVICE AIR SYSTEM (REF. 23), WITH UNIT 2 STATION AIR COMPRESSOR NOT OPERATING BUT MAINTAINED IN AUTO MODE PER REF. 24.
12. THIS IS AN ALTERNATE POWER SOURCE.
13. BOTH AUXILIARY FEEDWATER PUMPS ARE CONSIDERED MANUALLY STARTED BY THE OPERATOR PER REF. 29.
14. OPERATOR STARTS ANY CHARGING PUMP MANUALLY PER REF. 30. CHARGING PUMP21 IS CONSIDERED MANUALLY STARTED BY THE OPERATOR.
15. OPERATOR STARTS ANY COMPONENT COOLING PUMP MANUALLY PER REF. 31. COMPONENT COOLING PUMP 21 IS CONSIDERED MANUALLY STARTED BY THE OPERATOR.
16. ALL CONTAINMENT RECIRCULATION FANS ARE CONSIDERED RUNNING, AS OPERATOR STARTS ANY NUMBER OF FANS MANUALLY PER REF. 32.
17. 6.9 KV BUS DUCT HEATERS ARE CONSIDERED DE-ENERGIZED AS THE BUS IS CARRYING LOAD CURRENT DURING THIS SCENARIO.
18. THREE SERVICE WATER PUMPS (PUMP 21, 22, 23 OR 24, 25, 26), THAT ARE SELECTED BY OPERATOR TO SUPPLY SERVICE WATER TO ESSENTIAL HEADER, STARTS AUTOMATICALLY ON SAFETY INJECTION SIGNAL (REF. 28). OPERATOR STARTS ONE SERVICE WATER PUMP TO SUPPLY SERVICE WATER TO NON-ESSENTIAL HEADER PER REF. 26. SERVICE WATER PUMPS 24, 25 AND 26 ARE CONSIDERED RUNNING FOR ESSENTIAL HEADER, AND SERVICE WATER PUMP 22 IS CONSIDERED RUNNING FOR NON-ESSENTIAL HEADER.
19. THE REQUIREMENT OF SAFETY LOADS RUNNING IN RECIRCULATION MODE IS ESTABLISHED PER REF. 40.
20. ALL LIGHTING FEEDERS ARE RESET FOLLOWING SAFETY INJECTION PER REF. 48.
21. COMPONENT STATUS IS CONSIDERED SAME AS IN SAFETY INJECTION WITH OFFSITE POWER AVAILABLE.
22. COMPONENT STATUS IS DETERMINED CONSERVATIVELY FOR COLD SHUTDOWN AS DISCUSSED IN SECTION 5.2.2 (f).
23. THIS LOAD IS CONSIDERED NOT OPERATING DURING ALL PLANT CONDITION PER ASSUMPTION 5.1.5.
24. WHEN TURBINE GENERATOR IS OPERATING AT NORMAL POWER, TURBINE AUXILIARY OIL PUMP AND BEARING OIL PUMP ARE MAINTAINED IN "AUTO" POSITION (REF. 27).
25. MCC 28 AND 28A FEEDER BREAKERS TRIP ON SI SIGNAL (REF. 39), AND BREAKERS ARE NOT RESET (REF. 48).

26. ALL STATIC INVERTER LOAD IS MANUALLY TRANSFERRED TO ALTERNATE AC SOURCE (REF. 47).
27. THE MCC FEEDER BREAKER TRIPS ON LOSS OF POWER (REF. 39), AND BREAKER IS NOT RESET (REF. 47).
28. ALL PRESSURIZER HEATERS ARE CONSIDERED OPERATING, AS THE OPERATOR MAY OPERATE ANY HEATER TO CONTROL PRESSURIZER PRESSURE PER REF. 33.
29. OPERATOR STARTS ANY ONE SERVICE WATER PUMP ON ESSENTIAL HEADER (REF. 36), AND ANY ONE SERVICE WATER PUMP ON NON-ESSENTIAL HEADER (REF. 35). SERVICE WATER PUMPS 21 AND 26 ARE CONSIDERED MANUALLY STARTED BY THE OPERATOR.
30. OPERATOR STARTS ONE INSTRUMENT AIR COMPRESSOR MANUALLY PER REF. 34. INSTRUMENT AIR COMPRESSOR 22 IS CONSIDERED MANUALLY STARTED BY THE OPERATOR.
31. ONE SERVICE WATER PUMP ON ESSENTIAL HEADER AND ONE SERVICE WATER PUMP ON NON-ESSENTIAL HEADER IS CONSIDERED RUNNING FOR CONSERVATISM AS DISCUSSED IN SECTION 5.2.2 (f).
32. THIS LOAD IS CONSIDERED OPERATING PER ASSUMPTION 5.1.6.
33. MAIN TRANSFORMER COOLING EQUIPMENT SHUTDOWN AUTOMATICALLY ON UNIT TRIP (REF. 58), AND NOT REQUIRED DURING RECIRCULATION AND COLD SHUTDOWN.
34. TWO HOT PIPING PENETRATION BLOWERS (21 OR 22 AND 23 OR 24) SHOULD BE OPERATING PER REF. 63.
35. RCP BEARING LIFT PUMP IS REQUIRED TO OPERATE PRIOR TO STARTING OF REACTOR COOLANT PUMP (REF. 64).
36. ONLY ONE CHLORINATION PUMP IS CONSIDERED OPERATING ALL TIMES (REF. 65)
37. FIELD FLASHING IS REQUIRED DURING GENERATOR STARTUP ONLY (REF. 70).
38. THE MOTOR IS CONSIDERED NON-OPERATING WHEN POWER IS RESTORED TO THE MCC, AS LOAD HAS NO AUTO START SIGNAL.
39. ALL SEASONAL LOADS FOR WINTER AND SUMMER ARE CONSIDERED OPERATING CONCURRENTLY FOR CONSERVATISM.
40. THIS LOAD IS CONSIDERED INTERMITTENT LOAD ENERGIZED BY OPERATOR WHEN NEEDED PER ASSUMPTION 5.1.7.
41. ONE SPENT FUEL PUMP (21) IS CONSIDERED RUNNING PER REF. 74.
42. ONLY ONE WASTE GAS COMPRESSOR IS RUNNING AT ANY TIME (REF. 75).

43. ALL SUMP PUMPS ARE CONSIDERED INTERMITTENT LOAD PER ASSUMPTION 5.1.8.
44. THE PUMP WILL OPERATE ONLY ON ACTUATION OF DELUGE SYSTEM WHEN CHARCOAL FILTER TEMPERATURE IS VERY HIGH DURING POST ACCIDENT CONDITION (REF. 77).
45. THIS LOAD IS CONSIDERED OPERATING DURING NORMAL POWER OPERATION PER ASSUMPTION 5.1.9.
46. ONE PRIMARY WATER PUMP IS RUNNING AND THE OTHER PUMP IS MAINTAINED IN AUTO PER REF. 78. PRIMARY WATER PUMP 21 IS CONSIDERED IN AUTO.
47. THE MOTOR IS CONSIDERED STARTED AUTOMATICALLY WHEN POWER IS RESTORED TO THE MCC.
48. THE RIVER WATER PUMP AND ASSOCIATED EQUIPMENT IS USED TO PROVIDE ADDITIONAL COOLING WATER TO NON-ESSENTIAL HEADER WHEN RIVER WATER TEMPERATURES ARE ELEVATED IN SUMMER. (REF. 84). ONE RIVER WATER PUMP AND ONE SCREEN WASH PUMP ARE CONSIDERED RUNNING IN NORMAL POWER OPERATION PER REF. 87 AND 92.
49. GENERREX CUBICAL HEATERS ARE REQUIRED ONLY WHEN GENERATOR IS NOT PRODUCING POWER.
50. THIS LOAD IS ENERGIZED WHEN POWER IS RESTORED TO THE MCC.
51. COMPONENT STATUS WILL REMAIN SAME AS NORMAL POWER OPERATION, AS 6.9KV FEEDER BREAKERS FOR 21RW1 AND 22RW3 AND ASSOCIATED 480V LOAD BREAKERS DO NOT TRIP ON SAFETY INJECTION OR LOSS OF POWER.
52. UNDER NORMAL CONDITION INVERTER LOAD IS CARRIED BY ITS DC POWER SOURCE.
53. FOR THE FOLLOWING REDUNDANT MOTOR LOADS (HAVING ONE MOTOR OPERATED IN AUTO), ONLY ONE MOTOR LOAD IS CONSIDERED RUNNING DURING NORMAL POWER OPERATION:
 - a. REACTOR COOLANT DRAIN PUMP 21/22 (REF. 72)
 - b. BFP OIL CONSOLE MAIN OIL PUMP 21/22 (REF. 67)
 - c. BFP SEAL INJECTION BOOSTER PUMP 21/22 (REF. 66)
 - d. BFP TURBINE DRIP TANK DRAIN PUMP 21/22 (REF. 68)
 - e. CLOSED LOOP SYSTEM COOLING WATER PUMP 21/22 (REF. 69)
 - f. GEN STATOR COOLING WATER PUMP 21/22 (REF. 71)
54. ONE REACTOR COOLANT PUMP IS CONSIDERED RUNNING TO PROVIDE NATURAL CIRCULATION COOLDOWN PER REF. 54. RCP 24 IS CONSIDERED RUNNING PER REF. 55.
55. MCC 27/27A FEEDER BREAKER TRIPS ON SAFETY INJECTION (REF. 39). MCC 27 BREAKER IS CONSIDERED RESET AFTER SI SIGNAL IS RESET.

56. MCC 29 FEEDER BREAKER TRIPS ON LOSS OF POWER AND IS NOT RESET WHEN FED FROM 13.8 KV SOURCE PER REF. 47.
57. THE MCC FEEDER BREAKER TRIPS ON SAFETY INJECTION SIGNAL (REF. 39). THE BREAKER IS RESET AFTER SI SIGNAL IS RESET.
58. WHEN POWER IS RESTORED TO THE MCC BUS, THE MOTOR LOADS KNOWN TO HAVE AUTOMATIC START SIGNALS AND ALL THE NON-MOTOR LOADS ARE CONSIDERED RUNNING.
59. SAFETY INJECTION PUMP 22 IS CONSIDERED AUTOMATICALLY STARTED FROM BUS 2A (BY 3 SEC TIMER) ON SI SIGNAL.
60. SERVICE WATER PUMP 25 IS CONSIDERED AUTOMATICALLY STARTED FROM BUS 2A (BY 15 SEC TIMER) ON SI SIGNAL.
61. TURBINE AUXILIARY OIL PUMP IS CONSIDERED MANUALLY STARTED PER REF. 94.
62. BFP OIL CONSOLE MAIN OIL PUMP 21 IS CONSIDERED MANUALLY STARTED PER REF. 94.

The following paragraphs are included here for reference

4.4.7 The following intermittent loads are considered not operating during all plant condition:

- a. PAB Welding Receptacles and Panel
- b. 5-TON Overhead Crane and Lifting Beam
- c. FSB New Fuel Elevator and Overhead Crane
- d. Fuel Transfer Lifting Frame
- e. Head Bolt Tensioner Hoist
- f. Hoist Trolley and Bridge Heater Bay Cranes
- g. Spent Fuel Bridge
- h. Westfalia Oil Separator and Hoist
- i. Accumulator Topping Pump
- j. Welding Receptacles throughout the plant
- k. Oily Water Separator
- l. Manipulator Crane and Polar Crane

4.4.8 The following loads are considered operating in all plant scenarios being evaluated if the MCC supplying the load is energized:

- a. 120V AC Distribution Panel 1 (MCC 26AA)
- b. 120V AC Distribution Panel 2 (MCC 26BB)
- c. Hydrogen/Oxygen Analyzer Channel 1 (MCC 26AA)
- d. Hydrogen/Oxygen Analyzer Channel 2 (MCC 26BB)
- e. Canberra System Isotopic Analyzer (MCC 26AA)

ENCLOSURE 6 TO NL-09-010

DAPPER RUN FOR SAFETY INJECTION (SI) WITH AUTOMATIC
LOADING ONLY

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi
Dec 16, 2003 14:32:00□

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL
INTERPRETATION AND APPLICATION BY A REGISTERED ENGINEER ONLY

SKM POWER*TOOLS FOR WINDOWS
LOAD FLOW AND VOLTAGE DROP ANALYSIS REPORT
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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
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*** SOLUTION COMMENTS ***

=====

SOLUTION PARAMETERS

BRANCH VOLTAGE CRITERIA	:	3.00 %
BUS VOLTAGE CRITERIA	:	5.00 %
ACCELERATION FACTOR FOR 'PV' GENERATORS	:	1.00
ACCELERATION FACTOR FOR CONSTANT KVA LOADS	:	1.00
EXACT(ITERATIVE) SOLUTION	:	YES
UTILITY IMPEDANCE	:	NO
TRANSFORMER PHASE SHIFT	:	NO

ALL PU VALUES ARE EXPRESSED ON A 100 MVA BASE

LOAD FLOW IS BASED ON DIRECTLY CONNECTED LOADS.
AND WITH APPLIED FIRST LEVEL DEMAND OR LOAD FACTORS.
LOAD ANALYSIS INCLUDES ALL LOADS.

<<PERCENT VOLTAGE DROPS ARE BASED ON NOMINAL DESIGN VOLTAGES>>

SWING GENERATORS

SOURCE NAME	VOLTAGE	ANGLE
=====		
UTIL-138KVS	1.025	.00

LARGEST LOAD: 4865.22 KVA

CONVERGENCE CRITERIA: .243 KVA

LARGEST BUS MISMATCH	MT-RCP22	316.385 KVA
LARGEST BUS MISMATCH	MT-RCP24	34.123 KVA
LARGEST BUS MISMATCH	MT-RCP24	5.035 KVA
LARGEST BUS MISMATCH	MT-RCP24	.894 KVA
LARGEST BUS MISMATCH	MT-RCP24	.172 KVA

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BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS (SWING GENERATORS)

SOURCE VOLTAGE ANGLE KW KVAR VD% (UTILITY IMPEDANCE)
UTIL-138kVSY 1.025 .00 33563.55 28585.80 Gen Z Ignored

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Computer Run: LF SI (Total Auto) Case 1
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BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUCHANAN 138kV DESIGN VOLTS: 138000 BUS VOLTS: 141450 %VD: -2.50

===== PU BUS VOLTAGE: 1.025 ANGLE: .0 DEGREES

*** SWING GENERATOR: UTIL-138kVSY 33563.6 KW 28585.8 KVAR

LOAD TO: BUS-1079 FEEDER AMPS: 179.9 VOLTAGE DROP: 95. %VD: .07
PROJECTED POWER FLOW: 33563.6 KW 28585.8 KVAR 44087.0 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: 20.4 KW 21.6 KVAR 29.7 KVA

LOAD BUS: BUS-00001 *** ISOLATED BUS ***

LOAD BUS: BUS-00002 *** ISOLATED BUS ***

LOAD BUS: BUS-00003 *** ISOLATED BUS ***

LOAD BUS: BUS-0000BUCHAN *** ISOLATED BUS ***

LOAD BUS: BUS-0001 *** ISOLATED BUS ***

LOAD BUS: BUS-0002 *** ISOLATED BUS ***

LOAD BUS: BUS-0003 *** ISOLATED BUS ***

LOAD BUS: BUS-0004 *** ISOLATED BUS ***

LOAD BUS: BUS-0005 *** ISOLATED BUS ***

LOAD BUS: BUS-0006 *** ISOLATED BUS ***

LOAD BUS: BUS-00100 *** ISOLATED BUS ***

LOAD BUS: BUS-00101 *** ISOLATED BUS ***

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Computer Run: LF SI (Total Auto) Case 1
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BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD BUS: BUS-00102 *** ISOLATED BUS ***

==== BUS: BUS-00104 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00107 FEEDER AMPS: 679.5 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 7126.3 KW 4530.8 KVAR 8444.6 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .6 KW 3.1 KVAR 3.1 KVA

LOAD TO: BUS-00109 FEEDER AMPS: 616.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6466.8 KW 4114.1 KVAR 7664.6 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: BUS-00114 FEEDER AMPS: 1296.3 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 13593.1 KW 8644.9 KVAR 16109.2 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .3 KW 2.7 KVAR 2.7 KVA

==== BUS: BUS-00105 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00110 FEEDER AMPS: 644.2 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 6746.2 KW 4315.2 KVAR 8008.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .5 KW 2.8 KVAR 2.8 KVA

LOAD TO: BUS-00112 FEEDER AMPS: 678.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7118.6 KW 4520.8 KVAR 8432.8 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: BUS-00115 FEEDER AMPS: 1322.7 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 13864.8 KW 8836.0 KVAR 16441.0 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .3 KW 2.8 KVAR 2.8 KVA

LOAD BUS: BUS-00106 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00107 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00104 FEEDER AMPS: 679.5 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 7125.7 KW 4527.7 KVAR 8442.5 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .6 KW 3.1 KVAR 3.1 KVA

LOAD TO: BUS-1 FEEDER AMPS: 679.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7125.7 KW 4527.7 KVAR 8442.5 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD BUS: BUS-00108 *** ISOLATED BUS ***

==== BUS: BUS-00109 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00104 FEEDER AMPS: 616.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6466.8 KW 4114.0 KVAR 7664.5 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-2 FEEDER AMPS: 616.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6466.8 KW 4114.0 KVAR 7664.5 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

==== BUS: BUS-00110 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00105 FEEDER AMPS: 644.2 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 6745.6 KW 4312.5 KVAR 8006.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .5 KW 2.8 KVAR 2.8 KVA

LOAD TO: BUS-3 FEEDER AMPS: 644.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6745.6 KW 4312.5 KVAR 8006.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD BUS: BUS-00111 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00112 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00105 FEEDER AMPS: 678.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7118.6 KW 4520.7 KVAR 8432.7 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-4 FEEDER AMPS: 678.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7118.6 KW 4520.7 KVAR 8432.7 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD BUS: BUS-00113 *** ISOLATED BUS ***

==== BUS: BUS-00114 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.99
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00104 FEEDER AMPS: 1296.3 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 13593.4 KW 8647.5 KVAR 16110.9 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .3 KW 2.7 KVAR 2.7 KVA

LOAD FROM: BUS-5 FEEDER AMPS: 1296.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13593.4 KW 8647.5 KVAR 16110.9 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

==== BUS: BUS-00115 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00105 FEEDER AMPS: 1322.7 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 13865.1 KW 8838.8 KVAR 16442.8 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .3 KW 2.8 KVAR 2.8 KVA

LOAD FROM: BUS-6 FEEDER AMPS: 1322.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13865.1 KW 8838.8 KVAR 16442.8 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00134RW1 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-00200 DESIGN VOLTS: 6900 BUS VOLTS: 7211 %VD: -4.51
===== PU BUS VOLTAGE: 1.045 ANGLE: -6.7 DEGREES

LOAD TO: BUS-00201 FEEDER AMPS: 3203.4 VOLTAGE DROP: 34. %VD: .49
PROJECTED POWER FLOW: 33271.1 KW 22222.5 KVAR 40010.1 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 14.1 KW 316.5 KVAR 316.8 KVA

LOAD FROM: BUS-1079 TRANSF AMPS: 163.4 VOLTAGE DROP: -143. %VD: -2.08
PROJECTED POWER FLOW: 33271.1 KW 22222.5 KVAR 40010.1 KVA PF: .83 LAGGING
LOSSES THRU TRANSF: 272.1 KW 6341.7 KVAR 6347.5 KVA

==== BUS: BUS-00201 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.0 DEGREES

LOAD FROM: BUS-00200 FEEDER AMPS: 3203.4 VOLTAGE DROP: 34. %VD: .49
PROJECTED POWER FLOW: 33257.0 KW 21906.0 KVAR 39823.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: 14.1 KW 316.5 KVAR 316.8 KVA

LOAD TO: BUS-00202 FEEDER AMPS: 1576.1 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 16379.4 KW 10754.8 KVAR 19594.6 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .9 KW 7.9 KVAR 7.9 KVA

LOAD TO: BUS-00203 FEEDER AMPS: 1627.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16877.6 KW 11151.2 KVAR 20228.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .4 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00202 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -3.99
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00201 FEEDER AMPS:1576.1 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 16378.5 KW 10746.9 KVAR 19589.6 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .9 KW 7.9 KVAR 7.9 KVA

LOAD TO: BUS-5 FEEDER AMPS:1576.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16378.5 KW 10746.9 KVAR 19589.6 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .5 KVAR .5 KVA

==== BUS: BUS-00203 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.0 DEGREES

LOAD FROM: BUS-00201 FEEDER AMPS:1627.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16877.6 KW 11150.8 KVAR 20228.5 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .4 KVAR .4 KVA

LOAD TO: BUS-6 FEEDER AMPS:1627.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16877.6 KW 11150.8 KVAR 20228.5 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .6 KVAR .6 KVA

==== BUS: BUS-0801 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.85
===== PU BUS VOLTAGE: .971 ANGLE: -9.2 DEGREES

LOAD FROM: TRM-242BRSATAL FEEDER AMPS: 27.9 VOLTAGE DROP: 10. %VD: 2.04
PROJECTED POWER FLOW: 20.3 KW 9.8 KVAR 22.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .5 KW .0 KVAR .5 KVA

LOAD TO: TRM-SATAUXL FEEDER AMPS: 27.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 20.3 KW 9.8 KVAR 22.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
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Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-1 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00107 FEEDER AMPS: 679.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7125.7 KW 4527.6 KVAR 8442.4 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-00134RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-131RCP21 FEEDER AMPS: 392.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4288.4 KW 2318.3 KVAR 4874.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-132CP21 FEEDER AMPS: 202.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.3 KW 1320.0 KVAR 2519.7 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-133CWP21 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-1079 DESIGN VOLTS: 138000 BUS VOLTS: 141355 %VD: -2.43
===== PU BUS VOLTAGE: 1.024 ANGLE: .0 DEGREES

LOAD FROM: BUCHANAN 138KV FEEDER AMPS: 179.9 VOLTAGE DROP: 95. %VD: .07
PROJECTED POWER FLOW: 33543.2 KW 28564.2 KVAR 44057.4 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: 20.4 KW 21.6 KVAR 29.7 KVA

LOAD TO: BUS-00200 TRANSF AMPS: 179.9 VOLTAGE DROP: -2865. %VD: -2.08
PROJECTED POWER FLOW: 33543.2 KW 28564.2 KVAR 44057.4 KVA PF: .76 LAGGING
LOSSES THRU TRANSF: 272.1 KW 6341.7 KVAR 6347.5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-120VDP DESIGN VOLTS: 120 BUS VOLTS: 116 %VD: 3.35
===== PU BUS VOLTAGE: .966 ANGLE: -8.9 DEGREES

LOAD FROM: TRM-120VDP TRANSF AMPS: 3.9 VOLTAGE DROP: 4. %VD: 3.53\$
PROJECTED POWER FLOW: .7 KW .3 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-131RCP21 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: 392.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4288.4 KW 2318.3 KVAR 4874.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RCP21 FEEDER AMPS: 392.3 VOLTAGE DROP: 14. %VD: .21
PROJECTED POWER FLOW: 4288.4 KW 2318.3 KVAR 4874.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.0 KW 7.4 KVAR 10.2 KVA

==== BUS: BUS-132CP21 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: 202.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.3 KW 1320.0 KVAR 2519.7 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CP21 FEEDER AMPS: 202.8 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 2146.3 KW 1320.0 KVAR 2519.7 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.5 KW 2.6 KVAR 3.6 KVA

==== BUS: BUS-133CWP21 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP21 FEEDER AMPS: 89.6 VOLTAGE DROP: 8. %VD: .12
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-2 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00109 FEEDER AMPS: 616.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6466.8 KW 4114.0 KVAR 7664.5 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-223SST#2 FEEDER AMPS: 140.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1493.7 KW 912.3 KVAR 1750.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-224CWP23 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-226RCP24 FEEDER AMPS: 392.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4290.7 KW 2320.8 KVAR 4878.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-212IHFEED DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.90
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD FROM: MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-TRS-PANEL FEEDER AMPS: 14.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-2131EHCP12 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.33
===== PU BUS VOLTAGE: 1.023 ANGLE: -8.0 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-2131HFEED DESIGN VOLTS: 480 BUS VOLTS: 498 %VD: -3.71
===== PU BUS VOLTAGE: 1.037 ANGLE: -7.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-2131LSCPWR DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.33
===== PU BUS VOLTAGE: 1.023 ANGLE: -8.0 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213SC28PWR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .50
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-2131PSCHTR DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.33
===== PU BUS VOLTAGE: 1.023 ANGLE: -8.0 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213SC28HTR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .49
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-213HTP21A DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.33
===== PU BUS VOLTAGE: 1.023 ANGLE: -8.0 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 1. %VD: .27
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-21RW1 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD TO: BUS-MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-RWSP11 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-SCWSH21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-SCWSH22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: LT-RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-223SST#2 DESIGN VOLTS: 6900 BUS VOLTS: 7174 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-2 FEEDER AMPS: 140.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1493.7 KW 912.3 KVAR 1750.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#2 FEEDER AMPS: 140.8 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1493.7 KW 912.3 KVAR 1750.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .3 KW .4 KVAR .5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-224CWP23 DESIGN VOLTS: 6900 BUS VOLTS: 7174 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-2 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP23 FEEDER AMPS: 89.6 VOLTAGE DROP: 9. %VD: .13
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.4 KW .7 KVAR 1.5 KVA

==== BUS: BUS-226RCP24 DESIGN VOLTS: 6900 BUS VOLTS: 7174 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-2 FEEDER AMPS: 392.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4290.7 KW 2320.8 KVAR 4878.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RCP24 FEEDER AMPS: 392.5 VOLTAGE DROP: 19. %VD: .28
PROJECTED POWER FLOW: 4290.7 KW 2320.8 KVAR 4878.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 9.3 KW 9.9 KVAR 13.6 KVA

==== BUS: BUS-22RW3 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.36
===== PU BUS VOLTAGE: 1.024 ANGLE: -8.0 DEGREES

LOAD TO: BUS-MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-RWSP12 FEEDER AMPS: 572.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-SCWSH23 FEEDER AMPS: 160.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: LT-RW3 FEEDER AMPS: 752.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 533.9 KW 353.9 KVAR 640.6 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-245DRIAD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.32
===== PU BUS VOLTAGE: .957 ANGLE: -9.5 DEGREES
NET BRANCH DIVERSITY LOAD: 2.0 KW 1.0 KVAR

LOAD FROM: TRM-IAD TRANSF AMPS: 6.3 VOLTAGE DROP: 7. %VD: 3.44\$
PROJECTED POWER FLOW: 2.0 KW 1.0 KVAR 2.2 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-26AAL3DP1 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.17
===== PU BUS VOLTAGE: .978 ANGLE: -10.4 DEGREES

LOAD TO: BUS-26AAL3DP1B FEEDER AMPS: 27.8 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 26AA FEEDER AMPS: 27.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26AAL3DP1B DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.29
===== PU BUS VOLTAGE: .977 ANGLE: -10.4 DEGREES

LOAD FROM: BUS-26AAL3DP1 FEEDER AMPS: 27.8 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EBB1-S TRANSF AMPS: 27.8 VOLTAGE DROP: 11. %VD: 2.31
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

==== BUS: BUS-26AAL4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.17
===== PU BUS VOLTAGE: .978 ANGLE: -10.4 DEGREES

LOAD FROM: MCC 26AA FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-26AAL4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26AAM3CIA DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -10.3 DEGREES

LOAD FROM: MCC 26AA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .14
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .13
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26BBA2SREF DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.70
===== PU BUS VOLTAGE: .973 ANGLE: -10.7 DEGREES

LOAD FROM: MCC 26BB FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26BBB3DP2 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.59
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD TO: BUS-26BBB3DP2B FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 26BB FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-26BBB3DP2B DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.63
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: BUS-26BBB3DP2 FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: LT-XFMR-DP2 TRANSF AMPS: 9.9 VOLTAGE DROP: 4. %VD: .73
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-26BBB4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.59
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC 26BB FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 2. %VD: .33
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-2A DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

LOAD FROM: TRM-2A21CMC28A FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A22APHBG FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A22BMC24A FEEDER AMPS: 556.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 384.4 KW 259.6 KVAR 463.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: TRM-2A22CCCP22 FEEDER AMPS: 313.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.2 KVAR 261.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-2A23CRMG21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A24BSIP22 FEEDER AMPS: 422.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.9 KW 148.8 KVAR 352.0 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD FROM: TRM-2A24CMC210 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A25ASWP25 FEEDER AMPS: 381.4 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 281.2 KW 148.4 KVAR 318.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-2A25BMC23 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A26CCRF23 FEEDER AMPS: 353.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 256.5 KW 145.7 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-2AMC21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#2 FEEDER AMPS: 2024.6 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1472.0 KW 825.7 KVAR 1687.7 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW 1.2 KVAR 1.2 KVA

==== BUS: BUS-3 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00110 FEEDER AMPS: 644.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6745.6 KW 4312.4 KVAR 8006.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-31ARW3 FEEDER AMPS: 52.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 536.3 KW 368.5 KVAR 650.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-32CWP26 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-33SST#3 FEEDER AMPS: 116.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1237.9 KW 744.1 KVAR 1444.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-34RCP23 FEEDER AMPS: 392.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4288.7 KW 2318.7 KVAR 4875.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-31ARW3 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 52.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 536.3 KW 368.5 KVAR 650.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-RW3 FEEDER AMPS: 52.3 VOLTAGE DROP: 7. %VD: .10
PROJECTED POWER FLOW: 536.3 KW 368.5 KVAR 650.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

==== BUS: BUS-32CWP26 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP26 FEEDER AMPS: 89.6 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-33SST#3 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 116.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1237.9 KW 744.1 KVAR 1444.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#3 FEEDER AMPS: 116.2 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1237.9 KW 744.1 KVAR 1444.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .3 KW .3 KVAR .4 KVA

==== BUS: BUS-34RCP23 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.98
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 392.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4288.7 KW 2318.7 KVAR 4875.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RCP23 FEEDER AMPS: 392.3 VOLTAGE DROP: 15. %VD: .22
PROJECTED POWER FLOW: 4288.7 KW 2318.7 KVAR 4875.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.3 KW 7.8 KVAR 10.7 KVA

==== BUS: BUS-3A DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

LOAD FROM: TRM-2ATIE3A&6A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LEADING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A1CMCC211 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A2AMCC26C FEEDER AMPS: 357.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 255.2 KW 158.3 KVAR 300.3 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A2BMCC25 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-3A2CLTSW24 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A3ACRF24 FEEDER AMPS: 351.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 256.5 KW 145.4 KVAR 294.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A3BMCC22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A4APHBG21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A5BCHP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A5CRHR21 FEEDER AMPS: 421.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 319.0 KW 152.5 KVAR 353.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A6CAFP21 FEEDER AMPS: 541.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 392.4 KW 228.8 KVAR 454.3 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-6A7BT2A&3A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#3 FEEDER AMPS: 1670.8 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 1223.1 KW 685.0 KVAR 1401.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .8 KVAR .8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-4 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00112 FEEDER AMPS: 678.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7118.6 KW 4520.6 KVAR 8432.7 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-410CP23 FEEDER AMPS: 202.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.7 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-411CWP24 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-49RCP22 FEEDER AMPS: 392.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4289.2 KW 2319.2 KVAR 4876.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-410CP23 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-4 FEEDER AMPS: 202.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.7 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CP23 FEEDER AMPS: 202.7 VOLTAGE DROP: 12. %VD: .17
PROJECTED POWER FLOW: 2146.7 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.9 KW 3.1 KVAR 4.2 KVA

==== BUS: BUS-411CWP24 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-4 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP24 FEEDER AMPS: 89.6 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.7 KW .9 KVAR 1.9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-49RCP22 DESIGN VOLTS: 6900 BUS VOLTS: 7176 %VD: -4.00
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-4 FEEDER AMPS: 392.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4289.2 KW 2319.1 KVAR 4876.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RCP22 FEEDER AMPS: 392.2 VOLTAGE DROP: 16. %VD: .23
PROJECTED POWER FLOW: 4289.2 KW 2319.1 KVAR 4876.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.8 KW 8.3 KVAR 11.4 KVA

==== BUS: BUS-5 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.99
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00114 FEEDER AMPS: 1296.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13593.4 KW 8647.8 KVAR 16111.0 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD FROM: BUS-00202 FEEDER AMPS: 1576.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16378.5 KW 10746.4 KVAR 19589.3 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .5 KVAR .5 KVA

LOAD TO: BUS-518SST#5 FEEDER AMPS: 195.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2102.5 KW 1217.6 KVAR 2429.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-519CWP25 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.6 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-518SST#5 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.99
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-5 FEEDER AMPS: 195.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2102.5 KW 1217.6 KVAR 2429.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#5 FEEDER AMPS: 195.4 VOLTAGE DROP: 4. %VD: .05
PROJECTED POWER FLOW: 2102.5 KW 1217.6 KVAR 2429.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .9 KW .9 KVAR 1.3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-519CWP25 DESIGN VOLTS: 6900 BUS VOLTS: 7175 %VD: -3.99
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-5 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.6 KW 880.9 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP25 FEEDER AMPS: 89.6 VOLTAGE DROP: 10. %VD: .15
PROJECTED POWER FLOW: 682.6 KW 880.9 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .8 KVAR 1.8 KVA

==== BUS: BUS-5A DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: TRM-3ATIE2A&6A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LEADING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A15ASIP21 FEEDER AMPS: 427.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.8 KW 148.7 KVAR 351.8 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-5A15BCSP21 FEEDER AMPS: 478.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 354.9 KW 170.7 KVAR 393.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-5A15CCRF21 FEEDER AMPS: 352.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 251.2 KW 144.9 KVAR 290.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-5A16APHBG FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A16BMCC28 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A16CRP21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-5A17ACCP21 FEEDER AMPS: 316.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.2 KW 121.8 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-5A17BMC26A FEEDER AMPS: 120.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A18ACRF22 FEEDER AMPS: 356.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 255.5 KW 144.8 KVAR 293.7 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-5A18BCHP21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A18CSAC FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A19AMC29A FEEDER AMPS: 366.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 278.8 KW 115.7 KVAR 301.8 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-5A19BSWP24 FEEDER AMPS: 394.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.6 KW 154.4 KVAR 324.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-5A19CSWP21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#5 FEEDER AMPS: 2810.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2060.8 KW 1051.3 KVAR 2313.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW 2.4 KVAR 2.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-6 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD TO: BUS-00115 FEEDER AMPS:1322.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13865.1 KW 8839.1 KVAR 16442.9 KVA PF: .84 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD FROM: BUS-00203 FEEDER AMPS:1627.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16877.6 KW 11150.2 KVAR 20228.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .6 KVAR .6 KVA

LOAD TO: BUS-616CWP22 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.4 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-617SST#6 FEEDER AMPS: 219.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2329.9 KW 1430.3 KVAR 2733.9 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-616CWP22 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6 FEEDER AMPS: 89.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.4 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP22 FEEDER AMPS: 89.6 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.4 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.7 KVA

==== BUS: BUS-617SST#6 DESIGN VOLTS: 6900 BUS VOLTS: 7177 %VD: -4.02
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6 FEEDER AMPS: 219.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2329.9 KW 1430.3 KVAR 2733.9 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#6 FEEDER AMPS: 219.9 VOLTAGE DROP: 3. %VD: .05
PROJECTED POWER FLOW: 2329.9 KW 1430.3 KVAR 2733.9 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .9 KW 1.0 KVAR 1.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-6A DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

LOAD TO: TRM-6A10ASIP23 FEEDER AMPS: 465.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 344.5 KW 160.9 KVAR 380.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD FROM: TRM-6A10BMC27A FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A10CCRF25 FEEDER AMPS: 362.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 257.9 KW 146.5 KVAR 296.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-6A11ARHR22 FEEDER AMPS: 433.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 319.3 KW 153.1 KVAR 354.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD FROM: TRM-6A11ARP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-6A11BCHP23 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A12ACSP22 FEEDER AMPS: 482.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 355.0 KW 170.9 KVAR 394.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD FROM: TRM-6A12BTAO FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A12CCCP23 FEEDER AMPS: 320.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.0 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-6A7CRMG22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-6A8BSWP26 FEEDER AMPS: 396.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.3 KW 153.5 KVAR 324.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-6A8CSWP23 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A9BMC26B FEEDER AMPS: 156.0 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A9CAFP23 FEEDER AMPS: 550.9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 388.9 KW 226.7 KVAR 450.1 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD FROM: TRM-BKR-SST#6 FEEDER AMPS: 3161.3 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2277.3 KW 1219.0 KVAR 2583.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW 3.0 KVAR 3.0 KVA

==== BUS: BUS-CCRVDP21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.18
===== PU BUS VOLTAGE: 1.002 ANGLE: -8.9 DEGREES

LOAD TO: TRM-26C1DBF21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C1HBUVF FEEDER AMPS: 9.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C1M120DP FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-26C4FVDP21 FEEDER AMPS: 20.2 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 12.6 KW 11.2 KVAR 16.8 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-EDG23AL(A) DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.13
===== PU BUS VOLTAGE: .969 ANGLE: -10.7 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW .9 KVAR

LOAD FROM: TRM-EDG23AL TRANSF AMPS: 5.6 VOLTAGE DROP: 0. %VD: .20
PROJECTED POWER FLOW: 1.8 KW .9 KVAR 2.0 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-EDG23AL(B) DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.24
===== PU BUS VOLTAGE: .968 ANGLE: -10.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.8 KW 5.4 KVAR

LOAD FROM: TRM-EDG23AL FEEDER AMPS: 9.0 VOLTAGE DROP: 1. %VD: .30
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.2 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-EPV21 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
===== PU BUS VOLTAGE: .964 ANGLE: -10.3 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 3.6 KVAR

LOAD FROM: TRM-EPV21 TRANSF AMPS: 23.9 VOLTAGE DROP: 3. %VD: 1.29
PROJECTED POWER FLOW: 7.5 KW 3.6 KVAR 8.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-EPX3 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.08\$
===== PU BUS VOLTAGE: .949 ANGLE: -10.2 DEGREES
NET BRANCH DIVERSITY LOAD: 15.0 KW 7.3 KVAR

LOAD FROM: TRM-EPX3 TRANSF AMPS: 48.7 VOLTAGE DROP: 5. %VD: 2.63
PROJECTED POWER FLOW: 15.0 KW 7.3 KVAR 16.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .4 KW .2 KVAR .5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-MCC 212 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-21RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-MCC 213 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.36
===== PU BUS VOLTAGE: 1.024 ANGLE: -8.0 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-R45DP DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.22\$
===== PU BUS VOLTAGE: .948 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 21.6 KW 10.5 KVAR

LOAD FROM: TRM-24A2A-CC2 TRANSF AMPS: 70.2 VOLTAGE DROP: 8. %VD: 3.79\$
PROJECTED POWER FLOW: 21.6 KW 10.5 KVAR 24.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

==== BUS: BUS-RCS DESIGN VOLTS: 120 BUS VOLTS: 117 %VD: 2.50
===== PU BUS VOLTAGE: .975 ANGLE: -9.4 DEGREES

LOAD TO: BUS-RP1-C2 FEEDER AMPS: 27.6 VOLTAGE DROP: 0. %VD: .19
PROJECTED POWER FLOW: 5.1 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-RCS TRANSF AMPS: 27.6 VOLTAGE DROP: 1. %VD: .86
PROJECTED POWER FLOW: 5.1 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-RP1-C2 DESIGN VOLTS: 120 BUS VOLTS: 117 %VD: 2.69
===== PU BUS VOLTAGE: .973 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 2.4 KVAR

LOAD FROM: BUS-RCS FEEDER AMPS: 27.6 VOLTAGE DROP: 0. %VD: .19
PROJECTED POWER FLOW: 5.0 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-RWSP11 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-RWSP12 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.36
===== PU BUS VOLTAGE: 1.024 ANGLE: -8.0 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 572.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RWSP12 FEEDER AMPS: 572.7 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .7 KW 1.2 KVAR 1.4 KVA

==== BUS: BUS-SCWSH21 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-SCWSH22 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-SCWSH23 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.36
===== PU BUS VOLTAGE: 1.024 ANGLE: -8.0 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 160.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SCWSH23 FEEDER AMPS: 160.2 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .2 KVAR .2 KVA

==== BUS: BUS-SHT21 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.32
===== PU BUS VOLTAGE: .957 ANGLE: -9.7 DEGREES
NET BRANCH DIVERSITY LOAD: 17.6 KW 13.2 KVAR

LOAD FROM: TRM-SHT21 TRANSF AMPS: 63.7 VOLTAGE DROP: 6. %VD: 2.91
PROJECTED POWER FLOW: 17.6 KW 13.2 KVAR 22.0 KVA PF: .80 LAGGING
LOSSES THRU TRANSF: .7 KW .2 KVAR .7 KVA

==== BUS: BUS-SHT22 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.49
===== PU BUS VOLTAGE: .955 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 21.1 KW .0 KVAR

LOAD FROM: TRM-SHT22 TRANSF AMPS: 61.2 VOLTAGE DROP: 6. %VD: 3.07\$
PROJECTED POWER FLOW: 21.1 KW .0 KVAR 21.1 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .7 KW .3 KVAR .7 KVA

==== BUS: HT-LTG-22 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: HT-RW1 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-00134RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: LT-RW1 TRANSF AMPS: .9 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: HT-RW3 DESIGN VOLTS: 6900 BUS VOLTS: 7168 %VD: -3.88
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-31ARW3 FEEDER AMPS: 52.3 VOLTAGE DROP: 7. %VD: .10
PROJECTED POWER FLOW: 535.8 KW 368.2 KVAR 650.1 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

LOAD TO: LT-RW3 TRANSF AMPS: 52.3 VOLTAGE DROP: 104. %VD: 1.51
PROJECTED POWER FLOW: 535.8 KW 368.2 KVAR 650.1 KVA PF: .82 LAGGING
LOSSES THRU TRANSF: 1.8 KW 14.3 KVAR 14.4 KVA

==== BUS: HT-SST#2 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-223SST#2 FEEDER AMPS: 140.8 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1493.3 KW 911.9 KVAR 1749.8 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .3 KW .4 KVAR .5 KVA

LOAD TO: LT-SST#2 TRANSF AMPS: 140.8 VOLTAGE DROP: 250. %VD: 3.63\$
PROJECTED POWER FLOW: 1493.3 KW 911.9 KVAR 1749.8 KVA PF: .85 LAGGING
LOSSES THRU TRANSF: 21.1 KW 84.8 KVAR 87.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: HT-SST#3 DESIGN VOLTS: 6900 BUS VOLTS: 7173 %VD: -3.95
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-33SST#3 FEEDER AMPS: 116.2 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1237.7 KW 743.9 KVAR 1444.0 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .3 KW .3 KVAR .4 KVA

LOAD TO: LT-SST#3 TRANSF AMPS: 116.2 VOLTAGE DROP: 206. %VD: 2.99
PROJECTED POWER FLOW: 1237.7 KW 743.9 KVAR 1444.0 KVA PF: .86 LAGGING
LOSSES THRU TRANSF: 14.3 KW 57.9 KVAR 59.6 KVA

==== BUS: HT-SST#5 DESIGN VOLTS: 6900 BUS VOLTS: 7172 %VD: -3.94
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-518SST#5 FEEDER AMPS: 195.4 VOLTAGE DROP: 4. %VD: .05
PROJECTED POWER FLOW: 2101.6 KW 1216.7 KVAR 2428.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .9 KW .9 KVAR 1.3 KVA

LOAD TO: LT-SST#5 TRANSF AMPS: 195.4 VOLTAGE DROP: 334. %VD: 4.84\$
PROJECTED POWER FLOW: 2101.6 KW 1216.7 KVAR 2428.4 KVA PF: .87 LAGGING
LOSSES THRU TRANSF: 40.2 KW 162.7 KVAR 167.6 KVA

==== BUS: HT-SST#6 DESIGN VOLTS: 6900 BUS VOLTS: 7174 %VD: -3.97
===== PU BUS VOLTAGE: 1.040 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-617SST#6 FEEDER AMPS: 219.9 VOLTAGE DROP: 3. %VD: .05
PROJECTED POWER FLOW: 2329.0 KW 1429.3 KVAR 2732.6 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .9 KW 1.0 KVAR 1.4 KVA

LOAD TO: LT-SST#6 TRANSF AMPS: 219.9 VOLTAGE DROP: 387. %VD: 5.61\$
PROJECTED POWER FLOW: 2329.0 KW 1429.3 KVAR 2732.6 KVA PF: .85 LAGGING
LOSSES THRU TRANSF: 51.0 KW 206.9 KVAR 213.1 KVA

LOAD BUS: LT-AUTO-XFMR *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: LT-LTG-22 DESIGN VOLTS: 208 BUS VOLTS: 210 %VD: -.92

===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

**** NO LOAD SPECIFIED ****

LOAD BUS: LT-LTG23 *** ISOLATED BUS ***

==== BUS: LT-RW1 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92

===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD TO: BUS-21RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: HT-RW1 TRANSF AMPS: .9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: LT-RW3 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.37

===== PU BUS VOLTAGE: 1.024 ANGLE: -8.0 DEGREES

LOAD TO: BUS-22RW3 FEEDER AMPS: 752.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 534.0 KW 354.0 KVAR 640.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD FROM: HT-RW3 TRANSF AMPS: 51.6 VOLTAGE DROP: 7. %VD: 1.51
PROJECTED POWER FLOW: 534.0 KW 354.0 KVAR 640.7 KVA PF: .83 LAGGING
LOSSES THRU TRANSF: 1.8 KW 14.3 KVAR 14.4 KVA

==== BUS: LT-SST#2 DESIGN VOLTS: 480 BUS VOLTS: 482 %VD: -.32

===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

LOAD FROM: HT-SST#2 TRANSF AMPS: 135.9 VOLTAGE DROP: 17. %VD: 3.63\$
PROJECTED POWER FLOW: 1472.2 KW 827.1 KVAR 1688.7 KVA PF: .87 LAGGING
LOSSES THRU TRANSF: 21.1 KW 84.8 KVAR 87.4 KVA

LOAD TO: TRM-BKR-SST#2 FEEDER AMPS: 2024.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1472.2 KW 827.1 KVAR 1688.7 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .3 KW .2 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: LT-SST#3 DESIGN VOLTS: 480 BUS VOLTS: 485 %VD: -.97
===== PU BUS VOLTAGE: 1.010 ANGLE: -8.8 DEGREES

LOAD FROM: HT-SST#3 TRANSF AMPS: 112.8 VOLTAGE DROP: 14. %VD: 2.99
PROJECTED POWER FLOW: 1223.3 KW 686.0 KVAR 1402.5 KVA PF: .87 LAGGING
LOSSES THRU TRANSF: 14.3 KW 57.9 KVAR 59.6 KVA

LOAD TO: TRM-BKR-SST#3 FEEDER AMPS: 1670.8 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1223.3 KW 686.0 KVAR 1402.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .1 KVAR .2 KVA

==== BUS: LT-SST#5 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .90
===== PU BUS VOLTAGE: .991 ANGLE: -10.1 DEGREES

LOAD FROM: HT-SST#5 TRANSF AMPS: 186.3 VOLTAGE DROP: 23. %VD: 4.84\$
PROJECTED POWER FLOW: 2061.4 KW 1054.0 KVAR 2315.2 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: 40.2 KW 162.7 KVAR 167.6 KVA

LOAD TO: TRM-BKR-SST#5 FEEDER AMPS: 2810.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2061.4 KW 1054.0 KVAR 2315.2 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

==== BUS: LT-SST#6 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.64
===== PU BUS VOLTAGE: .984 ANGLE: -10.4 DEGREES

LOAD FROM: HT-SST#6 TRANSF AMPS: 208.0 VOLTAGE DROP: 27. %VD: 5.61\$
PROJECTED POWER FLOW: 2278.0 KW 1222.3 KVAR 2585.2 KVA PF: .88 LAGGING
LOSSES THRU TRANSF: 51.0 KW 206.9 KVAR 213.1 KVA

LOAD TO: TRM-BKR-SST#6 FEEDER AMPS: 3161.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2278.0 KW 1222.3 KVAR 2585.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .7 KW .4 KVAR .8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: LT-XFMR-DP2 DESIGN VOLTS: 120 BUS VOLTS: 116 %VD: 3.36
===== PU BUS VOLTAGE: .966 ANGLE: -10.8 DEGREES

LOAD FROM: BUS-26BBB3DP2 TRANSF AMPS: 39.8 VOLTAGE DROP: 1. %VD: .73
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD TO: TRM-26BBB3DP2 FEEDER AMPS: 39.8 VOLTAGE DROP: 0. %VD: .13
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: MCC 210 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: MCC 212 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.90
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES

LOAD TO: BUS-212IHFEED FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 213 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.33
===== PU BUS VOLTAGE: 1.023 ANGLE: -8.0 DEGREES

LOAD TO: BUS-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-2131LSCPWR FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-2131PSCHTR FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 22 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC 23 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC 25 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC 26AA DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.17
===== PU BUS VOLTAGE: .978 ANGLE: -10.4 DEGREES

LOAD TO: BUS-26AAL3DP1 FEEDER AMPS: 27.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26AAL4H202 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .14
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC-26A FEEDER AMPS: 32.7 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 23.3 KW 12.8 KVAR 26.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 26BB DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.59
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD TO: BUS-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26BBB3DP2 FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC-26B FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 9.8 KW 8.5 KVAR 13.0 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 28 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: MCC 28A DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-211 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC-24 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .81
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD TO: TRM-242BRSATAL FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242FIPCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242HRVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242KRVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242MRVF23 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243BWEF24 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243DWEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243FIPCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-243HRVF24 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243KRVF25 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244DVRINV FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244FIPCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244HWEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244KWEF22 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244MWEF23 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-245DRIAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-245MCLGWP2 FEEDER AMPS: 120.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.6 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-246BRRCNTS FEEDER AMPS: 6.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-24A1AMCC24 FEEDER AMPS: 370.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 249.2 KW 176.5 KVAR 305.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

==== BUS: MCC-24A DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .72
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD TO: TRM-24A1AMCC24 FEEDER AMPS: 370.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2AR45DP FEEDER AMPS: 30.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2CED22A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2EBCH22 FEEDER AMPS: 61.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A3CCMP22 FEEDER AMPS: 83.8 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A4AIAC22 FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A22BMC24A FEEDER AMPS: 556.4 VOLTAGE DROP: 5. %VD: .95
PROJECTED POWER FLOW: 382.2 KW 254.6 KVAR 459.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 2.1 KW 4.7 KVAR 5.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-26A DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.09
===== PU BUS VOLTAGE: .979 ANGLE: -10.4 DEGREES

LOAD TO: MCC 26AA FEEDER AMPS: 32.7 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 23.4 KW 12.8 KVAR 26.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1BEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1DEPV21 FEEDER AMPS: 10.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1DRDP1 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: 15.6 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6HEPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6HRBAHT FEEDER AMPS: 14.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6KRCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A17BMC26A FEEDER AMPS: 120.9 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 85.2 KW 49.4 KVAR 98.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .7 KW .9 KVAR 1.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-26B DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.55
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD TO: MCC 26BB FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 9.8 KW 8.5 KVAR 13.0 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B1BEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5KRAC22 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5MRLEDV FEEDER AMPS: 7.6 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5MRREDV FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B6BRREDA FEEDER AMPS: 11.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B7DHVAC FEEDER AMPS: 70.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B7MBAP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-6A9BMC26B FEEDER AMPS: 156.0 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 95.4 KW 82.9 KVAR 126.4 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW 1.5 KVAR 1.5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-26C DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD TO: TRM-26C1ASFP21 FEEDER AMPS: 107.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 76.3 KW 48.0 KVAR 90.1 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C2BPAB21 FEEDER AMPS: 135.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 94.5 KW 63.2 KVAR 113.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3ABT21H FEEDER AMPS: 12.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3FBC23 FEEDER AMPS: 33.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3HPWP21 FEEDER AMPS: 26.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3NBAP21 FEEDER AMPS: 14.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C4FVDP21 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C5AEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C5LGVP2 FEEDER AMPS: 7.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A2AMCC26C FEEDER AMPS: 357.9 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 254.7 KW 157.2 KVAR 299.3 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .5 KW 1.1 KVAR 1.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-27A DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC-29 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD TO: TRM-291ERSPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-292BLUATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294BLSHT22 FEEDER AMPS: 26.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 21.8 KW .3 KVAR 21.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294BRSHT21 FEEDER AMPS: 27.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.3 KW 13.4 KVAR 22.7 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294HWEF216 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294MDGBH FEEDER AMPS: 93.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-296BHRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-29A1AMC29 FEEDER AMPS: 210.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 166.7 KW 44.4 KVAR 172.5 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-29A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.23
===== PU BUS VOLTAGE: .988 ANGLE: -10.3 DEGREES

LOAD TO: TRM-29A1AMC29 FEEDER AMPS: 210.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 166.8 KW 44.5 KVAR 172.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3CIAC21 FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3EED21A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3GEF215 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3JBCH21 FEEDER AMPS: 61.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3LIAC21 FEEDER AMPS: 83.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 56.9 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A19AMC29A FEEDER AMPS: 366.5 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 278.4 KW 114.7 KVAR 301.0 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .4 KW .9 KVAR 1.0 KVA

==== BUS: MT-AFP21 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .59
===== PU BUS VOLTAGE: .994 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 388.4 KW 222.2 KVAR

LOAD FROM: TRM-3A6CAFP21 FEEDER AMPS: 541.4 VOLTAGE DROP: 7. %VD: 1.51
PROJECTED POWER FLOW: 388.4 KW 222.2 KVAR 447.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-AFP23 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.10
===== PU BUS VOLTAGE: .969 ANGLE: -10.9 DEGREES
NET BRANCH DIVERSITY LOAD: 385.2 KW 220.4 KVAR

LOAD FROM: TRM-6A9CAFP23 FEEDER AMPS: 550.9 VOLTAGE DROP: 6. %VD: 1.34
PROJECTED POWER FLOW: 385.2 KW 220.4 KVAR 443.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 3.6 KW 6.0 KVAR 7.0 KVA

==== BUS: MT-CCP21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.85
===== PU BUS VOLTAGE: .971 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-5A17ACCP21 FEEDER AMPS: 316.3 VOLTAGE DROP: 9. %VD: 1.86
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 2.5 KW 5.8 KVAR 6.3 KVA

==== BUS: MT-CCP22 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.11
===== PU BUS VOLTAGE: .979 ANGLE: -10.3 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-2A22CCCP22 FEEDER AMPS: 313.9 VOLTAGE DROP: 11. %VD: 2.36
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 3.3 KW 7.1 KVAR 7.8 KVA

==== BUS: MT-CCP23 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 4.03
===== PU BUS VOLTAGE: .960 ANGLE: -11.5 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-6A12CCCP23 FEEDER AMPS: 320.2 VOLTAGE DROP: 11. %VD: 2.29
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 3.3 KW 6.9 KVAR 7.6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CHP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-CHP22 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-CHP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-CP21 DESIGN VOLTS: 6900 BUS VOLTS: 7163 %VD: -3.81
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 2143.8 KW 1317.3 KVAR

LOAD FROM: BUS-132CP21 FEEDER AMPS: 202.8 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 2143.8 KW 1317.3 KVAR 2516.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.5 KW 2.6 KVAR 3.6 KVA

==== BUS: MT-CP23 DESIGN VOLTS: 6900 BUS VOLTS: 7165 %VD: -3.84
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 2143.8 KW 1317.3 KVAR

LOAD FROM: BUS-410CP23 FEEDER AMPS: 202.7 VOLTAGE DROP: 12. %VD: .17
PROJECTED POWER FLOW: 2143.8 KW 1317.3 KVAR 2516.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.9 KW 3.1 KVAR 4.2 KVA

==== BUS: MT-CRF21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.03
===== PU BUS VOLTAGE: .980 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-5A15CCRF21 FEEDER AMPS: 352.2 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .4 KW 5.3 KVAR 5.3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CRF22 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.24
===== PU BUS VOLTAGE: .968 ANGLE: -10.6 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-5A18ACRF22 FEEDER AMPS: 356.7 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.7 KW 5.2 KVAR 7.0 KVA

==== BUS: MT-CRF23 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.48
===== PU BUS VOLTAGE: .975 ANGLE: -9.7 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-2A26CCRF23 FEEDER AMPS: 353.9 VOLTAGE DROP: 13. %VD: 2.72
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.7 KW 6.1 KVAR 8.4 KVA

==== BUS: MT-CRF24 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.78
===== PU BUS VOLTAGE: .982 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-3A3ACRF24 FEEDER AMPS: 351.3 VOLTAGE DROP: 13. %VD: 2.70
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.7 KW 6.0 KVAR 8.3 KVA

==== BUS: MT-CRF25 DESIGN VOLTS: 480 BUS VOLTS: 456 %VD: 4.91
===== PU BUS VOLTAGE: .951 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-6A10CCRF25 FEEDER AMPS: 362.9 VOLTAGE DROP: 15. %VD: 3.17\$
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 7.1 KW 6.9 KVAR 9.9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % : BUS = 5.00

==== BUS: MT-CSP21 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.61
===== PU BUS VOLTAGE: .974 ANGLE: -10.8 DEGREES
NET BRANCH DIVERSITY LOAD: 350.9 KW 163.9 KVAR

LOAD FROM: TRM-5A15BCSP21 FEEDER AMPS: 478.3 VOLTAGE DROP: 8. %VD: 1.61
PROJECTED POWER FLOW: 350.9 KW 163.9 KVAR 387.3 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

==== BUS: MT-CSP22 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.40
===== PU BUS VOLTAGE: .966 ANGLE: -11.1 DEGREES
NET BRANCH DIVERSITY LOAD: 350.9 KW 163.9 KVAR

LOAD FROM: TRM-6A12ACSP22 FEEDER AMPS: 482.2 VOLTAGE DROP: 8. %VD: 1.65
PROJECTED POWER FLOW: 350.9 KW 163.9 KVAR 387.3 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.8 KVAR 7.9 KVA

==== BUS: MT-CWP21 DESIGN VOLTS: 6900 BUS VOLTS: 7164 %VD: -3.83
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-133CWP21 FEEDER AMPS: 89.6 VOLTAGE DROP: 8. %VD: .12
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.5 KVA

==== BUS: MT-CWP22 DESIGN VOLTS: 6900 BUS VOLTS: 7167 %VD: -3.88
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-616CWP22 FEEDER AMPS: 89.6 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CWP23 DESIGN VOLTS: 6900 BUS VOLTS: 7166 %VD: -3.85
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-224CWP23 FEEDER AMPS: 89.6 VOLTAGE DROP: 9. %VD: .13
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.4 KW .7 KVAR 1.5 KVA

==== BUS: MT-CWP24 DESIGN VOLTS: 6900 BUS VOLTS: 7165 %VD: -3.84
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-411CWP24 FEEDER AMPS: 89.6 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.7 KW .9 KVAR 1.9 KVA

==== BUS: MT-CWP25 DESIGN VOLTS: 6900 BUS VOLTS: 7165 %VD: -3.84
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-519CWP25 FEEDER AMPS: 89.6 VOLTAGE DROP: 10. %VD: .15
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .8 KVAR 1.8 KVA

==== BUS: MT-CWP26 DESIGN VOLTS: 6900 BUS VOLTS: 7164 %VD: -3.82
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-32CWP26 FEEDER AMPS: 89.6 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.9 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-RCP21 DESIGN VOLTS: 6900 BUS VOLTS: 7158 %VD: -3.75
===== PU BUS VOLTAGE: 1.037 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4281.4 KW 2310.9 KVAR

LOAD FROM: BUS-131RCP21 FEEDER AMPS: 392.3 VOLTAGE DROP: 14. %VD: .21
PROJECTED POWER FLOW: 4281.4 KW 2310.9 KVAR 4865.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.0 KW 7.4 KVAR 10.2 KVA

==== BUS: MT-RCP22 DESIGN VOLTS: 6900 BUS VOLTS: 7160 %VD: -3.77
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4281.4 KW 2310.9 KVAR

LOAD FROM: BUS-49RCP22 FEEDER AMPS: 392.2 VOLTAGE DROP: 16. %VD: .23
PROJECTED POWER FLOW: 4281.4 KW 2310.9 KVAR 4865.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.8 KW 8.3 KVAR 11.4 KVA

==== BUS: MT-RCP23 DESIGN VOLTS: 6900 BUS VOLTS: 7160 %VD: -3.76
===== PU BUS VOLTAGE: 1.038 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4281.4 KW 2310.9 KVAR

LOAD FROM: BUS-34RCP23 FEEDER AMPS: 392.3 VOLTAGE DROP: 15. %VD: .22
PROJECTED POWER FLOW: 4281.4 KW 2310.9 KVAR 4865.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 7.3 KW 7.8 KVAR 10.7 KVA

==== BUS: MT-RCP24 DESIGN VOLTS: 6900 BUS VOLTS: 7155 %VD: -3.70
===== PU BUS VOLTAGE: 1.037 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4281.4 KW 2310.9 KVAR

LOAD FROM: BUS-226RCP24 FEEDER AMPS: 392.5 VOLTAGE DROP: 19. %VD: .28
PROJECTED POWER FLOW: 4281.4 KW 2310.9 KVAR 4865.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 9.3 KW 9.9 KVAR 13.6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-RHR21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .43
===== PU BUS VOLTAGE: .996 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 147.7 KVAR

LOAD FROM: TRM-3A5CRHR21 FEEDER AMPS: 421.4 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 316.1 KW 147.7 KVAR 348.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.9 KW 4.8 KVAR 5.7 KVA

==== BUS: MT-RHR22 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.16
===== PU BUS VOLTAGE: .968 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 147.7 KVAR

LOAD FROM: TRM-6A11ARHR22 FEEDER AMPS: 433.3 VOLTAGE DROP: 7. %VD: 1.41
PROJECTED POWER FLOW: 316.1 KW 147.7 KVAR 348.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.2 KW 5.2 KVAR 6.1 KVA

==== BUS: MT-RMG21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-RMG22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-RP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-RP22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-SAC DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SIP21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.23
===== PU BUS VOLTAGE: .978 ANGLE: -10.6 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 144.0 KVAR

LOAD FROM: TRM-5A15ASIP21 FEEDER AMPS: 427.3 VOLTAGE DROP: 6. %VD: 1.23
PROJECTED POWER FLOW: 316.1 KW 144.0 KVAR 347.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.7 KW 4.5 KVAR 5.3 KVA

==== BUS: MT-SIP22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -9.7 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 144.0 KVAR

LOAD FROM: TRM-2A24BSIP22 FEEDER AMPS: 422.2 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 316.1 KW 144.0 KVAR 347.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.7 KVAR 5.4 KVA

LOAD FROM: TRM-3A4CSIP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MT-SIP23 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.04
===== PU BUS VOLTAGE: .970 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 341.4 KW 155.5 KVAR

LOAD FROM: TRM-6A10ASIP23 FEEDER AMPS: 465.3 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 341.4 KW 155.5 KVAR 375.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.1 KW 5.2 KVAR 6.1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-SWP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: MT-SWP22 *** ISOLATED BUS ***

==== BUS: MT-SWP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SWP24 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.24
===== PU BUS VOLTAGE: .968 ANGLE: -10.8 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-5A19BSWP24 FEEDER AMPS: 394.3 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.8 KW 6.6 KVAR 8.1 KVA

==== BUS: MT-SWP25 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.02
===== PU BUS VOLTAGE: 1.000 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-2A25ASWP25 FEEDER AMPS: 381.4 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

LOAD FROM: TRM-3A3CSWP25 FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MT-SWP26 DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.77
===== PU BUS VOLTAGE: .962 ANGLE: -11.0 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-6A8BSWP26 FEEDER AMPS: 396.5 VOLTAGE DROP: 10. %VD: 2.02
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.6 KW 5.6 KVAR 7.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-TAO DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: PR HTR DP-21 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: PR HTR DP-22 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: PR HTR DP-23 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: PR HTR DP-24 *** ISOLATED BUS ***

LOAD BUS: SPLICE BOX *** ISOLATED BUS ***

==== BUS: TRM-120VDP DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.18
===== PU BUS VOLTAGE: 1.002 ANGLE: -8.9 DEGREES

LOAD TO: BUS-120VDP TRANSF AMPS: .9 VOLTAGE DROP: 17. %VD: 3.53\$
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-26C1M120DP FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-2131EHCP12 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.22
===== PU BUS VOLTAGE: 1.022 ANGLE: -7.9 DEGREES
NET BRANCH DIVERSITY LOAD: .7 KW 1.1 KVAR

LOAD FROM: BUS-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213HTP21A DESIGN VOLTS: 480 BUS VOLTS: 490 %VD: -2.06
===== PU BUS VOLTAGE: 1.021 ANGLE: -8.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: BUS-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 1. %VD: .27
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213SC28HTR DESIGN VOLTS: 480 BUS VOLTS: 489 %VD: -1.84
===== PU BUS VOLTAGE: 1.018 ANGLE: -7.9 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: BUS-2131PSCHTR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .49
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213SC28PWR DESIGN VOLTS: 480 BUS VOLTS: 489 %VD: -1.83
===== PU BUS VOLTAGE: 1.018 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: BUS-2131LSCPWR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .50
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-242BRSATAL DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .81
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD TO: BUS-0801 FEEDER AMPS: 27.9 VOLTAGE DROP: 10. %VD: 2.04
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .5 KW .0 KVAR .5 KVA

LOAD FROM: MCC-24 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-242FIPCF22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .87
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-242HRVF21 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .85
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.28
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-242KRVF22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .85
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 5. %VD: 1.14
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-242MRVF23 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .85
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF23 FEEDER AMPS: 20.4 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-243BWEF24 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .86
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF24 FEEDER AMPS: 13.5 VOLTAGE DROP: 2. %VD: .47
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-243DWEF25 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .86
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .61
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-243FIPCF24 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .87
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .93
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-243HRVF24 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .85
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF24 FEEDER AMPS: 20.4 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-243KRVF25 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .84
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF25 FEEDER AMPS: 20.4 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-244DVRINV DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .81
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-VREGINV FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .17
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-244FIPCF26 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .87
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .87
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-244HWEF21 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .86
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .67
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-244KWEF22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .86
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF22 FEEDER AMPS: 13.5 VOLTAGE DROP: 3. %VD: .52
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-244MWEF23 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .86
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF23 FEEDER AMPS: 13.5 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-245DRIAD DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .81
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-245MCLGWP2 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .83
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 120.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.5 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CLGWP22 FEEDER AMPS: 120.7 VOLTAGE DROP: 4. %VD: .74
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.5 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .6 KW .5 KVAR .7 KVA

==== BUS: TRM-246BRRCNTS DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .81
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 6.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RCS FEEDER AMPS: 6.9 VOLTAGE DROP: 4. %VD: .83
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A1AMCC24 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .72
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD TO: MCC-24 FEEDER AMPS: 370.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

LOAD FROM: MCC-24A FEEDER AMPS: 370.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-24A2A-CC2 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.43
===== PU BUS VOLTAGE: .986 ANGLE: -9.4 DEGREES

LOAD TO: BUS-R45DP TRANSF AMPS: 30.4 VOLTAGE DROP: 18. %VD: 3.79\$
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

LOAD FROM: TRM-24A2AR45DP FEEDER AMPS: 30.4 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-24A2AR45DP DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .72
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 30.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2A-CC2 FEEDER AMPS: 30.4 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A2CED22A DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .72
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG22AL FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-24A2EBCH22 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .72
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 61.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH22 FEEDER AMPS: 61.5 VOLTAGE DROP: 8. %VD: 1.63
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .2 KVAR .9 KVA

==== BUS: TRM-24A3CCMP22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .75
===== PU BUS VOLTAGE: .993 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 83.8 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAC22 FEEDER AMPS: 83.8 VOLTAGE DROP: 8. %VD: 1.58
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.1 KW .3 KVAR 1.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A4AIAC22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .79
===== PU BUS VOLTAGE: .992 ANGLE: -9.6 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IACCWP22 FEEDER AMPS: 2.3 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26A1BEF21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.14
===== PU BUS VOLTAGE: .979 ANGLE: -10.4 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 11.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ETEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 3. %VD: .62
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26A1DEPV21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.09
===== PU BUS VOLTAGE: .979 ANGLE: -10.4 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 10.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EPV21 FEEDER AMPS: 10.3 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26A1DRDP1 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.19
===== PU BUS VOLTAGE: .978 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: 15.6 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DISTPNL1 FEEDER AMPS: 27.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 15.6 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26A6HEPX3 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.09
===== PU BUS VOLTAGE: .979 ANGLE: -10.4 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 21.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 2. %VD: .36
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26A6HRBAHT DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.09
===== PU BUS VOLTAGE: .979 ANGLE: -10.4 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 14.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAHT FEEDER AMPS: 14.4 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26A6KRCP21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.15
===== PU BUS VOLTAGE: .978 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ACCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26AAL4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.48
===== PU BUS VOLTAGE: .975 ANGLE: -10.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.2 KW .9 KVAR

LOAD FROM: BUS-26AAL4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26B1BEF22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.60
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 11.9 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ETEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26B5KRAC22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.56
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-ACCP22 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26B5MRLEDV DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.58
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 7.6 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDGVDP1 FEEDER AMPS: 7.6 VOLTAGE DROP: 11. %VD: 2.22
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-26B5MRREDV DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.60
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDVDP1 FEEDER AMPS: 13.5 VOLTAGE DROP: 19. %VD: 3.92\$
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-26B6BRREDA DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.64
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 11.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG23AL FEEDER AMPS: 11.3 VOLTAGE DROP: 1. %VD: .29
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26B7DHVAC DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.55
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 70.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CRHVACDP FEEDER AMPS: 70.9 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: 1.8 KW .7 KVAR 1.9 KVA

==== BUS: TRM-26B7MBAP22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.58
===== PU BUS VOLTAGE: .974 ANGLE: -10.9 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAPP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 5. %VD: 1.13
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-26BBA2SREF DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.90
===== PU BUS VOLTAGE: .971 ANGLE: -10.4 DEGREES
NET BRANCH DIVERSITY LOAD: 1.3 KW 4.1 KVAR

LOAD FROM: BUS-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .30 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26BBB3DP2 DESIGN VOLTS: 120 BUS VOLTS: 116 %VD: 3.50
===== PU BUS VOLTAGE: .965 ANGLE: -10.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.2 KW 3.5 KVAR

LOAD FROM: LT-XFMR-DP2 FEEDER AMPS: 39.8 VOLTAGE DROP: 0. %VD: .13
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26BBB4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.92
===== PU BUS VOLTAGE: .971 ANGLE: -10.8 DEGREES
NET BRANCH DIVERSITY LOAD: 1.2 KW .9 KVAR

LOAD FROM: BUS-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 2. %VD: .33
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C1ASF21 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.57
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 107.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 76.3 KW 48.0 KVAR 90.1 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SFP21 FEEDER AMPS: 107.7 VOLTAGE DROP: 7. %VD: 1.41
PROJECTED POWER FLOW: 76.3 KW 48.0 KVAR 90.1 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 1.0 KW .8 KVAR 1.3 KVA

==== BUS: TRM-26C1DBF21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.17
===== PU BUS VOLTAGE: 1.002 ANGLE: -8.8 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BF21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C1HBUVF DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.18
===== PU BUS VOLTAGE: 1.002 ANGLE: -8.9 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: 9.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-BUVF FEEDER AMPS: 9.4 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C1M120DP DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.18
===== PU BUS VOLTAGE: 1.002 ANGLE: -8.9 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-120VDP FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C2BPAB21 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.57
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 135.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 94.5 KW 63.2 KVAR 113.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABEF21 FEEDER AMPS: 135.9 VOLTAGE DROP: 8. %VD: 1.66
PROJECTED POWER FLOW: 94.5 KW 63.2 KVAR 113.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.5 KW 1.2 KVAR 1.9 KVA

==== BUS: TRM-26C3ABT21H DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 12.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATK21HTR FEEDER AMPS: 12.9 VOLTAGE DROP: 13. %VD: 2.68
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C3FBC23 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 33.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH23 FEEDER AMPS: 33.2 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26C3HPWP21 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 26.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PWMUP21 FEEDER AMPS: 26.4 VOLTAGE DROP: 12. %VD: 2.48
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

==== BUS: TRM-26C3NBAP21 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.57
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 14.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAXFERP21 FEEDER AMPS: 14.5 VOLTAGE DROP: 17. %VD: 3.44\$
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C4FVDP21 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD TO: BUS-CCRVPD21 FEEDER AMPS: 20.2 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD FROM: MCC-26C FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C5AEF213 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.58
===== PU BUS VOLTAGE: 1.006 ANGLE: -9.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C5LGVPD2 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.56
===== PU BUS VOLTAGE: 1.006 ANGLE: -8.9 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 7.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DGVDP2 FEEDER AMPS: 7.2 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-291ERSPHTR DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 12.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-292BLUATAL DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 37.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-UATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 11. %VD: 2.28
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .0 KVAR .8 KVA

==== BUS: TRM-294BLSHT22 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 26.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 21.8 KW .3 KVAR 21.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SHT22 FEEDER AMPS: 26.5 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 21.8 KW .3 KVAR 21.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-294BRSHT21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 27.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.3 KW 13.4 KVAR 22.7 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SHT21 FEEDER AMPS: 27.6 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 18.3 KW 13.4 KVAR 22.7 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-294HWEF216 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.37
===== PU BUS VOLTAGE: .986 ANGLE: -10.2 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF216 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-294MDGBH DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 93.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DGBH FEEDER AMPS: 93.3 VOLTAGE DROP: 10. %VD: 2.15
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.7 KW .5 KVAR 1.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-296BHRSSP1 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.29
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 18.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-HRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 9. %VD: 1.80
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-29A1AMC29 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.23
===== PU BUS VOLTAGE: .988 ANGLE: -10.3 DEGREES

LOAD TO: MCC-29 FEEDER AMPS: 210.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 166.8 KW 44.5 KVAR 172.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: MCC-29A FEEDER AMPS: 210.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 166.8 KW 44.5 KVAR 172.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3CIAC21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.31
===== PU BUS VOLTAGE: .987 ANGLE: -10.2 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IACLGCP21 FEEDER AMPS: 4.6 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-29A3EED21A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.23
===== PU BUS VOLTAGE: .988 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG21AL FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3GEF215 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.34
===== PU BUS VOLTAGE: .987 ANGLE: -10.2 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EF215 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3JBCH21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.23
===== PU BUS VOLTAGE: .988 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 61.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH21 FEEDER AMPS: 61.5 VOLTAGE DROP: 5. %VD: 1.04
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF,SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-29A3LIAC21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.25
===== PU BUS VOLTAGE: .987 ANGLE: -10.3 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 83.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 56.8 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAC21 FEEDER AMPS: 83.2 VOLTAGE DROP: 4. %VD: .81
PROJECTED POWER FLOW: 56.8 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .6 KW .2 KVAR .6 KVA

==== BUS: TRM-2A21CMC28A DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A22APHBG DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A22BMC24A DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.23
===== PU BUS VOLTAGE: 1.002 ANGLE: -9.2 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 556.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 384.4 KW 259.3 KVAR 463.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: MCC-24A FEEDER AMPS: 556.4 VOLTAGE DROP: 5. %VD: .95
PROJECTED POWER FLOW: 384.4 KW 259.3 KVAR 463.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 2.1 KW 4.7 KVAR 5.2 KVA

==== BUS: TRM-2A22CCCP22 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.25
===== PU BUS VOLTAGE: 1.002 ANGLE: -9.2 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 313.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.1 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-CCP22 FEEDER AMPS: 313.9 VOLTAGE DROP: 11. %VD: 2.36
PROJECTED POWER FLOW: 230.9 KW 123.1 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 3.3 KW 7.1 KVAR 7.8 KVA

==== BUS: TRM-2A23CRMG21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-2A24ASWP22 *** ISOLATED BUS ***

==== BUS: TRM-2A24BSIP22 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.25
===== PU BUS VOLTAGE: 1.002 ANGLE: -9.2 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 422.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.9 KW 148.7 KVAR 351.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-SIP22 FEEDER AMPS: 422.2 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 318.9 KW 148.7 KVAR 351.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.7 KVAR 5.4 KVA

==== BUS: TRM-2A24CMC210 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A25ASWP25 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.25
===== PU BUS VOLTAGE: 1.002 ANGLE: -9.2 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 381.4 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-SWP25 FEEDER AMPS: 381.4 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-2A25BMC23 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A26CCRF23 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.25
===== PU BUS VOLTAGE: 1.002 ANGLE: -9.2 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 353.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 256.5 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF23 FEEDER AMPS: 353.9 VOLTAGE DROP: 13. %VD: 2.72
PROJECTED POWER FLOW: 256.5 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.7 KW 6.1 KVAR 8.4 KVA

==== BUS: TRM-2AMC21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-2ATIE3A&6A DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A1CMCC211 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A2AMCC26C DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 357.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 255.2 KW 158.3 KVAR 300.3 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC-26C FEEDER AMPS: 357.9 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 255.2 KW 158.3 KVAR 300.3 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .5 KW 1.1 KVAR 1.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-3A2BMCC25 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A2CLTSW24 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A3ACRF24 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 351.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 256.5 KW 145.4 KVAR 294.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CRF24 FEEDER AMPS: 351.3 VOLTAGE DROP: 13. %VD: 2.70
PROJECTED POWER FLOW: 256.5 KW 145.4 KVAR 294.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.7 KW 6.0 KVAR 8.3 KVA

==== BUS: TRM-3A3BMCC22 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A3CSWP25 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.02
===== PU BUS VOLTAGE: 1.000 ANGLE: -9.3 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A4APHBG21 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-3A4CSIP22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -9.7 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-3A5ASWP22 *** ISOLATED BUS ***

==== BUS: TRM-3A5BCHP22 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A5CRHR21 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 421.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 319.0 KW 152.5 KVAR 353.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RHR21 FEEDER AMPS: 421.4 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 319.0 KW 152.5 KVAR 353.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 2.9 KW 4.8 KVAR 5.7 KVA

==== BUS: TRM-3A6CAFP21 DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 541.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 392.4 KW 228.8 KVAR 454.3 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-AFP21 FEEDER AMPS: 541.4 VOLTAGE DROP: 7. %VD: 1.51
PROJECTED POWER FLOW: 392.4 KW 228.8 KVAR 454.3 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-3ATIE2A&6A DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A15ASIP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 427.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.8 KW 148.5 KVAR 351.7 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-SIP21 FEEDER AMPS: 427.3 VOLTAGE DROP: 6. %VD: 1.23
PROJECTED POWER FLOW: 318.8 KW 148.5 KVAR 351.7 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.7 KW 4.5 KVAR 5.3 KVA

==== BUS: TRM-5A15BCSP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 478.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 354.9 KW 170.5 KVAR 393.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-CSP21 FEEDER AMPS: 478.3 VOLTAGE DROP: 8. %VD: 1.61
PROJECTED POWER FLOW: 354.9 KW 170.5 KVAR 393.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

==== BUS: TRM-5A15CCRF21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 352.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 251.2 KW 144.8 KVAR 290.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF21 FEEDER AMPS: 352.2 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 251.2 KW 144.8 KVAR 290.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .4 KW 5.3 KVAR 5.3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-5A16APHBG DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A16BMCC28 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A16CRP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A17ACCP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .99
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 316.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.2 KW 121.8 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CCP21 FEEDER AMPS: 316.3 VOLTAGE DROP: 9. %VD: 1.86
PROJECTED POWER FLOW: 230.2 KW 121.8 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 2.5 KW 5.8 KVAR 6.3 KVA

==== BUS: TRM-5A17BMC26A DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 120.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC-26A FEEDER AMPS: 120.9 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .7 KW .9 KVAR 1.2 KVA

LOAD BUS: TRM-5A17CLTSED *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-5A18ACRF22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 356.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 255.5 KW 144.7 KVAR 293.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF22 FEEDER AMPS: 356.7 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 255.5 KW 144.7 KVAR 293.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.7 KW 5.2 KVAR 7.0 KVA

==== BUS: TRM-5A18BCHP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A18CSAC DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A19AMC29A DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .99
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 366.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 278.8 KW 115.5 KVAR 301.8 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MCC-29A FEEDER AMPS: 366.5 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 278.8 KW 115.5 KVAR 301.8 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .4 KW .9 KVAR 1.0 KVA

==== BUS: TRM-5A19BSWP24 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 394.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.6 KW 154.3 KVAR 324.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-SWP24 FEEDER AMPS: 394.3 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 285.6 KW 154.3 KVAR 324.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.8 KW 6.6 KVAR 8.1 KVA

==== BUS: TRM-5A19CSWP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A10ASIP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.75
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 465.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 344.5 KW 160.7 KVAR 380.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-SIP23 FEEDER AMPS: 465.3 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 344.5 KW 160.7 KVAR 380.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.1 KW 5.2 KVAR 6.1 KVA

==== BUS: TRM-6A10BMC27A DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A10CCRF25 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 362.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 257.9 KW 146.4 KVAR 296.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF25 FEEDER AMPS: 362.9 VOLTAGE DROP: 15. %VD: 3.17\$
PROJECTED POWER FLOW: 257.9 KW 146.4 KVAR 296.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 7.1 KW 6.9 KVAR 9.9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-6A11ARHR22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 433.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 319.3 KW 152.9 KVAR 354.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-RHR22 FEEDER AMPS: 433.3 VOLTAGE DROP: 7. %VD: 1.41
PROJECTED POWER FLOW: 319.3 KW 152.9 KVAR 354.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 3.2 KW 5.2 KVAR 6.1 KVA

==== BUS: TRM-6A11ARP22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A11BCHP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A12ACSP22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.75
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 482.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 355.0 KW 170.7 KVAR 393.9 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-CSP22 FEEDER AMPS: 482.2 VOLTAGE DROP: 8. %VD: 1.65
PROJECTED POWER FLOW: 355.0 KW 170.7 KVAR 393.9 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.8 KVAR 7.9 KVA

==== BUS: TRM-6A12BTAO DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-6A12CCCP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 320.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 122.9 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CCP23 FEEDER AMPS: 320.2 VOLTAGE DROP: 11. %VD: 2.29
PROJECTED POWER FLOW: 230.9 KW 122.9 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 3.3 KW 6.9 KVAR 7.6 KVA

==== BUS: TRM-6A7BT2A&3A DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A7CRMG22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-6A8ALTSW22 *** ISOLATED BUS ***

==== BUS: TRM-6A8BSWP26 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74
===== PU BUS VOLTAGE: .983 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 396.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.3 KW 153.3 KVAR 323.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-SWP26 FEEDER AMPS: 396.5 VOLTAGE DROP: 10. %VD: 2.02
PROJECTED POWER FLOW: 285.3 KW 153.3 KVAR 323.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.6 KW 5.6 KVAR 7.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-6A8CSWP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.72

===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-6A9APHCG24 *** ISOLATED BUS ***

==== BUS: TRM-6A9BMC26B DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74

===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 156.0 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC-26B FEEDER AMPS: 156.0 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW 1.5 KVAR 1.5 KVA

==== BUS: TRM-6A9CAFP23 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.75

===== PU BUS VOLTAGE: .982 ANGLE: -10.5 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 550.9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 388.9 KW 226.4 KVAR 450.0 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: MT-AFP23 FEEDER AMPS: 550.9 VOLTAGE DROP: 6. %VD: 1.34
PROJECTED POWER FLOW: 388.9 KW 226.4 KVAR 450.0 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 3.6 KW 6.0 KVAR 7.0 KVA

==== BUS: TRM-ACCP21 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.27

===== PU BUS VOLTAGE: .967 ANGLE: -9.8 DEGREES

NET BRANCH DIVERSITY LOAD: 3.7 KW 3.7 KVAR

LOAD FROM: TRM-26A6KRCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-ACCP22 DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.62
===== PU BUS VOLTAGE: .964 ANGLE: -10.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 3.6 KVAR

LOAD FROM: TRM-26B5KRAC22 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 3.7 KW 3.6 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-BAHT DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.30
===== PU BUS VOLTAGE: .977 ANGLE: -10.4 DEGREES
NET BRANCH DIVERSITY LOAD: 11.8 KW .0 KVAR

LOAD FROM: TRM-26A6HRBAHT FEEDER AMPS: 14.4 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BAPP22 DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.71
===== PU BUS VOLTAGE: .963 ANGLE: -10.4 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 9.2 KVAR

LOAD FROM: TRM-26B7MBAP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 5. %VD: 1.13
PROJECTED POWER FLOW: 11.3 KW 9.2 KVAR 14.5 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-BATCH21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.27
===== PU BUS VOLTAGE: .977 ANGLE: -10.1 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW 21.8 KVAR

LOAD FROM: TRM-29A3JBCH21 FEEDER AMPS: 61.5 VOLTAGE DROP: 5. %VD: 1.04
PROJECTED POWER FLOW: 45.0 KW 21.8 KVAR 50.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-BATCH22 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.35
===== PU BUS VOLTAGE: .976 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW 21.8 KVAR

LOAD FROM: TRM-24A2EBCH22 FEEDER AMPS: 61.5 VOLTAGE DROP: 8. %VD: 1.63
PROJECTED POWER FLOW: 45.0 KW 21.8 KVAR 50.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .2 KVAR .9 KVA

==== BUS: TRM-BATCH23 DESIGN VOLTS: 480 BUS VOLTS: 482 %VD: -.36
===== PU BUS VOLTAGE: 1.004 ANGLE: -8.9 DEGREES
NET BRANCH DIVERSITY LOAD: 25.0 KW 12.1 KVAR

LOAD FROM: TRM-26C3FBC23 FEEDER AMPS: 33.2 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 25.0 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-BATK21HTR DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.10
===== PU BUS VOLTAGE: .979 ANGLE: -9.0 DEGREES
NET BRANCH DIVERSITY LOAD: 10.5 KW .0 KVAR

LOAD FROM: TRM-26C3ABT21H FEEDER AMPS: 12.9 VOLTAGE DROP: 13. %VD: 2.68
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-BAXFERP21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.87
===== PU BUS VOLTAGE: .971 ANGLE: -8.5 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 3.5 KVAR

LOAD FROM: TRM-26C3NBAP21 FEEDER AMPS: 14.5 VOLTAGE DROP: 17. %VD: 3.44\$
PROJECTED POWER FLOW: 11.3 KW 3.5 KVAR 11.8 KVA PF: .95 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-BF21 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.12
===== PU BUS VOLTAGE: 1.001 ANGLE: -8.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.0 KW 5.5 KVAR

LOAD FROM: TRM-26C1DBF21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BKR-SST#2 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.30
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES

LOAD TO: BUS-2A FEEDER AMPS:2024.6 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1472.0 KW 826.9 KVAR 1688.3 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW 1.2 KVAR 1.2 KVA

LOAD FROM: LT-SST#2 FEEDER AMPS:2024.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1472.0 KW 826.9 KVAR 1688.3 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .3 KW .2 KVAR .3 KVA

==== BUS: TRM-BKR-SST#3 DESIGN VOLTS: 480 BUS VOLTS: 485 %VD: -.95
===== PU BUS VOLTAGE: 1.010 ANGLE: -8.8 DEGREES

LOAD TO: BUS-3A FEEDER AMPS:1670.8 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 1223.1 KW 685.9 KVAR 1402.3 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .8 KVAR .8 KVA

LOAD FROM: LT-SST#3 FEEDER AMPS:1670.8 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1223.1 KW 685.9 KVAR 1402.3 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .1 KVAR .2 KVA

==== BUS: TRM-BKR-SST#5 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .93
===== PU BUS VOLTAGE: .991 ANGLE: -10.1 DEGREES

LOAD TO: BUS-5A FEEDER AMPS:2810.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2060.8 KW 1053.7 KVAR 2314.6 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW 2.4 KVAR 2.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: LT-SST#5 FEEDER AMPS:2810.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2060.8 KW 1053.7 KVAR 2314.6 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

==== BUS: TRM-BKR-SST#6 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.67
===== PU BUS VOLTAGE: .983 ANGLE: -10.4 DEGREES

LOAD TO: BUS-6A FEEDER AMPS:3161.3 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2277.3 KW 1221.9 KVAR 2584.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW 3.0 KVAR 3.0 KVA

LOAD FROM: LT-SST#6 FEEDER AMPS:3161.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2277.3 KW 1221.9 KVAR 2584.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .7 KW .4 KVAR .8 KVA

==== BUS: TRM-BUVF DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.13
===== PU BUS VOLTAGE: 1.001 ANGLE: -8.8 DEGREES
NET BRANCH DIVERSITY LOAD: 5.8 KW 5.3 KVAR

LOAD FROM: TRM-26C1HBUVF FEEDER AMPS: 9.4 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-CLGWP22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.57
===== PU BUS VOLTAGE: .984 ANGLE: -9.6 DEGREES
NET BRANCH DIVERSITY LOAD: 83.6 KW 52.6 KVAR

LOAD FROM: TRM-245MCLGWP2 FEEDER AMPS: 120.7 VOLTAGE DROP: 4. %VD: .74
PROJECTED POWER FLOW: 83.6 KW 52.6 KVAR 98.8 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .6 KW .5 KVAR .7 KVA

==== BUS: TRM-CRHVACDP DESIGN VOLTS: 480 BUS VOLTS: 453 %VD: 5.62\$
===== PU BUS VOLTAGE: .944 ANGLE: -10.2 DEGREES
NET BRANCH DIVERSITY LOAD: 41.8 KW 36.9 KVAR

LOAD FROM: TRM-26B7DHVAC FEEDER AMPS: 70.9 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 41.8 KW 36.9 KVAR 55.7 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: 1.8 KW .7 KVAR 1.9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-DGBH DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.41
===== PU BUS VOLTAGE: .966 ANGLE: -10.6 DEGREES
NET BRANCH DIVERSITY LOAD: 75.0 KW .0 KVAR

LOAD FROM: TRM-294MDGBH FEEDER AMPS: 93.3 VOLTAGE DROP: 10. %VD: 2.15
PROJECTED POWER FLOW: 75.0 KW .0 KVAR 75.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.7 KW .5 KVAR 1.7 KVA

==== BUS: TRM-DGVDP2 DESIGN VOLTS: 480 BUS VOLTS: 482 %VD: -.44
===== PU BUS VOLTAGE: 1.004 ANGLE: -8.9 DEGREES

LOAD FROM: TRM-26C5LGVP2 FEEDER AMPS: 7.2 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-FAN321 FEEDER AMPS: 7.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-DISTPNL1 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.64
===== PU BUS VOLTAGE: .974 ANGLE: -10.2 DEGREES
NET BRANCH DIVERSITY LOAD: 15.5 KW 15.6 KVAR

LOAD FROM: TRM-26A1DRDP1 FEEDER AMPS: 27.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 15.5 KW 15.6 KVAR 22.0 KVA PF: .70 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-EBB1-S DESIGN VOLTS: 120 BUS VOLTS: 114 %VD: 4.60
===== PU BUS VOLTAGE: .954 ANGLE: -10.3 DEGREES

LOAD FROM: BUS-26AAL3DP1B TRANSF AMPS: 111.3 VOLTAGE DROP: 3. %VD: 2.31
PROJECTED POWER FLOW: 19.9 KW 9.6 KVAR 22.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

LOAD TO: TRM-EPF5 FEEDER AMPS: 111.3 VOLTAGE DROP: 0. %VD: .37
PROJECTED POWER FLOW: 19.9 KW 9.6 KVAR 22.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-EDG21AL DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -10.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.8 KW 5.4 KVAR

LOAD FROM: TRM-29A3EED21A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDG22AL DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .77
===== PU BUS VOLTAGE: .992 ANGLE: -9.5 DEGREES
NET BRANCH DIVERSITY LOAD: 5.2 KW 5.5 KVAR

LOAD FROM: TRM-24A2CED22A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.5 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDG23AL DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.93
===== PU BUS VOLTAGE: .971 ANGLE: -10.8 DEGREES

LOAD TO: BUS-EDG23AL(A) TRANSF AMPS: 2.4 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.8 KW .9 KVAR 2.0 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-EDG23AL(B) FEEDER AMPS: 9.0 VOLTAGE DROP: 1. %VD: .30
PROJECTED POWER FLOW: 4.9 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-26B6BRREDA FEEDER AMPS: 11.3 VOLTAGE DROP: 1. %VD: .29
PROJECTED POWER FLOW: 6.6 KW 6.3 KVAR 9.1 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDGVDP1 DESIGN VOLTS: 480 BUS VOLTS: 457 %VD: 4.80
===== PU BUS VOLTAGE: .952 ANGLE: -9.7 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.2 KVAR

LOAD FROM: TRM-26B5MRLEDV FEEDER AMPS: 7.6 VOLTAGE DROP: 11. %VD: 2.22
PROJECTED POWER FLOW: 4.3 KW 4.2 KVAR 6.0 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD BUS: TRM-EDN2(N) *** ISOLATED BUS ***

==== BUS: TRM-EDVDP1 DESIGN VOLTS: 480 BUS VOLTS: 449 %VD: 6.52\$
===== PU BUS VOLTAGE: .935 ANGLE: -8.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 7.4 KVAR

LOAD FROM: TRM-26B5MRREDV FEEDER AMPS: 13.5 VOLTAGE DROP: 19. %VD: 3.92\$
PROJECTED POWER FLOW: 7.5 KW 7.4 KVAR 10.5 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-EF215 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.60
===== PU BUS VOLTAGE: .984 ANGLE: -10.0 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: TRM-29A3GEF215 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EPF5 DESIGN VOLTS: 120 BUS VOLTS: 114 %VD: 4.97
===== PU BUS VOLTAGE: .950 ANGLE: -10.3 DEGREES
NET BRANCH DIVERSITY LOAD: 19.8 KW 9.6 KVAR

LOAD FROM: TRM-EBB1-S FEEDER AMPS: 111.3 VOLTAGE DROP: 0. %VD: .37
PROJECTED POWER FLOW: 19.8 KW 9.6 KVAR 22.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-EPV21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -10.3 DEGREES

LOAD TO: BUS-EPV21 TRANSF AMPS: 10.3 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.4 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD FROM: TRM-26A1DEPV21 FEEDER AMPS: 10.3 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-EPX3 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.45
===== PU BUS VOLTAGE: .975 ANGLE: -10.3 DEGREES

LOAD TO: BUS-EPX3 TRANSF AMPS: 21.1 VOLTAGE DROP: 13. %VD: 2.63
PROJECTED POWER FLOW: 15.4 KW 7.4 KVAR 17.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .4 KW .2 KVAR .5 KVA

LOAD FROM: TRM-26A6HEPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 2. %VD: .36
PROJECTED POWER FLOW: 15.4 KW 7.4 KVAR 17.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-ETEF21 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.76
===== PU BUS VOLTAGE: .972 ANGLE: -10.1 DEGREES
NET BRANCH DIVERSITY LOAD: 7.4 KW 6.1 KVAR

LOAD FROM: TRM-26A1BEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 3. %VD: .62
PROJECTED POWER FLOW: 7.4 KW 6.1 KVAR 9.6 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-ETEF22 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.23
===== PU BUS VOLTAGE: .968 ANGLE: -10.6 DEGREES
NET BRANCH DIVERSITY LOAD: 7.4 KW 6.1 KVAR

LOAD FROM: TRM-26B1BEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 7.4 KW 6.1 KVAR 9.6 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-FAN321 DESIGN VOLTS: 480 BUS VOLTS: 482 %VD: -.43
===== PU BUS VOLTAGE: 1.004 ANGLE: -8.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-DGVDP2 FEEDER AMPS: 7.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-HRSSP1 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.08
===== PU BUS VOLTAGE: .969 ANGLE: -9.6 DEGREES
NET BRANCH DIVERSITY LOAD: 12.1 KW 9.1 KVAR

LOAD FROM: TRM-296BHRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 9. %VD: 1.80
PROJECTED POWER FLOW: 12.1 KW 9.1 KVAR 15.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-IAC21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.07
===== PU BUS VOLTAGE: .979 ANGLE: -10.1 DEGREES
NET BRANCH DIVERSITY LOAD: 56.3 KW 37.8 KVAR

LOAD FROM: TRM-29A3LIAC21 FEEDER AMPS: 83.2 VOLTAGE DROP: 4. %VD: .81
PROJECTED POWER FLOW: 56.3 KW 37.8 KVAR 67.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .6 KW .2 KVAR .6 KVA

==== BUS: TRM-IAC22 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.33
===== PU BUS VOLTAGE: .977 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 56.3 KW 38.3 KVAR

LOAD FROM: TRM-24A3CCMP22 FEEDER AMPS: 83.8 VOLTAGE DROP: 8. %VD: 1.58
PROJECTED POWER FLOW: 56.3 KW 38.3 KVAR 68.1 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.1 KW .3 KVAR 1.2 KVA

==== BUS: TRM-IACCWP22 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -9.4 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW .9 KVAR

LOAD FROM: TRM-24A4AIAC22 FEEDER AMPS: 2.3 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-IACLGCP21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.65
===== PU BUS VOLTAGE: .984 ANGLE: -10.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.6 KW 2.8 KVAR

LOAD FROM: TRM-29A3CIAC21 FEEDER AMPS: 4.6 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-IAD DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -9.6 DEGREES

LOAD TO: BUS-245DRIAD TRANSF AMPS: 2.7 VOLTAGE DROP: 17. %VD: 3.44\$
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD FROM: TRM-245DRIAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-IPHCF22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.78
===== PU BUS VOLTAGE: .982 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-242FIPCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-IPHCF24 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.79
===== PU BUS VOLTAGE: .982 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243FIPCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .93
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-IPHCF26 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.74
===== PU BUS VOLTAGE: .983 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244FIPCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .87
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD BUS: TRM-LTRFSW22 *** ISOLATED BUS ***

==== BUS: TRM-PABEF21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.09
===== PU BUS VOLTAGE: .989 ANGLE: -9.1 DEGREES
NET BRANCH DIVERSITY LOAD: 93.0 KW 62.0 KVAR

LOAD FROM: TRM-26C2BPAB21 FEEDER AMPS: 135.9 VOLTAGE DROP: 8. %VD: 1.66
PROJECTED POWER FLOW: 93.0 KW 62.0 KVAR 111.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.5 KW 1.2 KVAR 1.9 KVA

==== BUS: TRM-PRHTR21P DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR21S DESIGN VOLTS: 480 BUS VOLTS: 484 %VD: -.92
===== PU BUS VOLTAGE: 1.009 ANGLE: -8.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR22P DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-PRHTR22S DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.27
===== PU BUS VOLTAGE: 1.003 ANGLE: -9.2 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR23P DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR23S DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -10.1 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-PRHTR24P *** ISOLATED BUS ***

LOAD BUS: TRM-PRHTR24S *** ISOLATED BUS ***

==== BUS: TRM-PWMUP21 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.90
===== PU BUS VOLTAGE: .981 ANGLE: -8.1 DEGREES
NET BRANCH DIVERSITY LOAD: 17.2 KW 12.9 KVAR

LOAD FROM: TRM-26C3HPWP21 FEEDER AMPS: 26.4 VOLTAGE DROP: 12. %VD: 2.48
PROJECTED POWER FLOW: 17.2 KW 12.9 KVAR 21.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

==== BUS: TRM-RCS DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.64
===== PU BUS VOLTAGE: .984 ANGLE: -9.4 DEGREES

LOAD TO: BUS-RCS TRANSF AMPS: 6.9 VOLTAGE DROP: 4. %VD: .86
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-246BRRCNTS FEEDER AMPS: 6.9 VOLTAGE DROP: 4. %VD: .83
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-RVF21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.12
===== PU BUS VOLTAGE: .979 ANGLE: -9.1 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242HRVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.28
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-RVF22 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 1.99
===== PU BUS VOLTAGE: .980 ANGLE: -9.1 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242KRVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 5. %VD: 1.14
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RVF23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.88
===== PU BUS VOLTAGE: .981 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242MRVF23 FEEDER AMPS: 20.4 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RVF24 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.76
===== PU BUS VOLTAGE: .982 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-243HRVF24 FEEDER AMPS: 20.4 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-RVF25 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.75
===== PU BUS VOLTAGE: .982 ANGLE: -9.2 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-243KRVF25 FEEDER AMPS: 20.4 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RWSP11 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-RWSP12 DESIGN VOLTS: 480 BUS VOLTS: 490 %VD: -2.09
===== PU BUS VOLTAGE: 1.021 ANGLE: -8.1 DEGREES
NET BRANCH DIVERSITY LOAD: 401.1 KW 274.7 KVAR

LOAD FROM: BUS-RWSP12 FEEDER AMPS: 572.7 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 401.1 KW 274.7 KVAR 486.2 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .7 KW 1.2 KVAR 1.4 KVA

==== BUS: TRM-SATAUXL DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.48
===== PU BUS VOLTAGE: .965 ANGLE: -9.0 DEGREES
NET BRANCH DIVERSITY LOAD: 20.2 KW 9.8 KVAR

LOAD FROM: BUS-0801 FEEDER AMPS: 27.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 20.2 KW 9.8 KVAR 22.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-SCWSH21 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-SCWSH22 DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -3.92
===== PU BUS VOLTAGE: 1.039 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-SCWSH23 DESIGN VOLTS: 480 BUS VOLTS: 490 %VD: -2.17
===== PU BUS VOLTAGE: 1.022 ANGLE: -8.0 DEGREES
NET BRANCH DIVERSITY LOAD: 118.4 KW 67.1 KVAR

LOAD FROM: BUS-SCWSH23 FEEDER AMPS: 160.2 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 118.4 KW 67.1 KVAR 136.1 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .2 KVAR .2 KVA

==== BUS: TRM-SFP21 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .84
===== PU BUS VOLTAGE: .992 ANGLE: -9.1 DEGREES
NET BRANCH DIVERSITY LOAD: 75.3 KW 47.2 KVAR

LOAD FROM: TRM-26C1ASFP21 FEEDER AMPS: 107.7 VOLTAGE DROP: 7. %VD: 1.41
PROJECTED POWER FLOW: 75.3 KW 47.2 KVAR 88.9 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 1.0 KW .8 KVAR 1.3 KVA

==== BUS: TRM-SHT21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.41
===== PU BUS VOLTAGE: .986 ANGLE: -10.2 DEGREES

LOAD TO: BUS-SHT21 TRANSF AMPS: 27.6 VOLTAGE DROP: 14. %VD: 2.91
PROJECTED POWER FLOW: 18.2 KW 13.4 KVAR 22.6 KVA PF: .81 LAGGING
LOSSES THRU TRANSF: .7 KW .2 KVAR .7 KVA

LOAD FROM: TRM-294BRSHT21 FEEDER AMPS: 27.6 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 18.2 KW 13.4 KVAR 22.6 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-SHT22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.42
===== PU BUS VOLTAGE: .986 ANGLE: -10.3 DEGREES

LOAD TO: BUS-SHT22 TRANSF AMPS: 26.5 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .7 KW .3 KVAR .7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-294BLSHT22 FEEDER AMPS: 26.5 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-SPHTR DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.77
===== PU BUS VOLTAGE: .982 ANGLE: -10.1 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: TRM-291ERSPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-TRS-11 DESIGN VOLTS: 480 BUS VOLTS: 497 %VD: -3.53
===== PU BUS VOLTAGE: 1.035 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-TRS-PANEL FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-TRS-12 DESIGN VOLTS: 480 BUS VOLTS: 497 %VD: -3.53
===== PU BUS VOLTAGE: 1.035 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-TRS-PANEL FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-TRS-PANEL DESIGN VOLTS: 480 BUS VOLTS: 498 %VD: -3.71
===== PU BUS VOLTAGE: 1.037 ANGLE: -7.0 DEGREES

LOAD FROM: BUS-212IHFEED FEEDER AMPS: 14.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-2131HFEED FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-TRS-11 FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-TRS-12 FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-UATAL DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.54
===== PU BUS VOLTAGE: .965 ANGLE: -9.7 DEGREES
NET BRANCH DIVERSITY LOAD: 27.0 KW 13.1 KVAR

LOAD FROM: TRM-292BLUATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 11. %VD: 2.28
PROJECTED POWER FLOW: 27.0 KW 13.1 KVAR 30.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .0 KVAR .8 KVA

==== BUS: TRM-VREGINV DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -9.6 DEGREES
NET BRANCH DIVERSITY LOAD: 1.3 KW .7 KVAR

LOAD FROM: TRM-244DVRINV FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .17
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-WEF21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.53
===== PU BUS VOLTAGE: .985 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244HWEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .67
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-WEF213 DESIGN VOLTS: 480 BUS VOLTS: 483 %VD: -.53
===== PU BUS VOLTAGE: 1.005 ANGLE: -8.9 DEGREES
NET BRANCH DIVERSITY LOAD: 1.5 KW 1.8 KVAR

LOAD FROM: TRM-26C5AEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-WEF216 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.60
===== PU BUS VOLTAGE: .984 ANGLE: -10.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: TRM-294HWEF216 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-WEF22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.39
===== PU BUS VOLTAGE: .986 ANGLE: -9.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244KWEF22 FEEDER AMPS: 13.5 VOLTAGE DROP: 3. %VD: .52
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WEF23 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.29
===== PU BUS VOLTAGE: .987 ANGLE: -9.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244MWEF23 FEEDER AMPS: 13.5 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-WEF24 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.33
===== PU BUS VOLTAGE: .987 ANGLE: -9.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243BWEF24 FEEDER AMPS: 13.5 VOLTAGE DROP: 2. %VD: .47
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WEF25 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -9.3 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243DWEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .61
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM26AAM3CIA DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.44
===== PU BUS VOLTAGE: .976 ANGLE: -10.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: BUS-26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .13
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUCHANAN 138kv	138000.00	1.0250	BUS-00001	345000.00	.0000
BUS-00002	345000.00	.0000	BUS-00003	345000.00	.0000
BUS-0000BUCHAN	345000.00	.0000	BUS-0001	22000.00	.0000
BUS-0002	22000.00	.0000	BUS-0003	22000.00	.0000
BUS-0004	22000.00	.0000	BUS-0005	22000.00	.0000
BUS-0006	22000.00	.0000	BUS-00100	6900.00	.0000
BUS-00101	6900.00	.0000	BUS-00102	6900.00	.0000
BUS-00104	6900.00	1.0398	BUS-00105	6900.00	1.0400
BUS-00106	6900.00	.0000	BUS-00107	6900.00	1.0395
BUS-00108	6900.00	.0000	BUS-00109	6900.00	1.0398
BUS-00110	6900.00	1.0398	BUS-00111	6900.00	.0000
BUS-00112	6900.00	1.0400	BUS-00113	6900.00	.0000
BUS-00114	6900.00	1.0399	BUS-00115	6900.00	1.0402
BUS-00134RW1	6900.00	1.0395	BUS-00200	6900.00	1.0451
BUS-00201	6900.00	1.0402	BUS-00202	6900.00	1.0399
BUS-00203	6900.00	1.0402	BUS-0801	480.00	.9715
BUS-1	6900.00	1.0395	BUS-1079	138000.00	1.0243
BUS-120VDP	120.00	.9665	BUS-131RCP21	6900.00	1.0395
BUS-132CP21	6900.00	1.0395	BUS-133CWP21	6900.00	1.0395
BUS-2	6900.00	1.0398	BUS-212IHFEED	480.00	1.0390
BUS-2131EHCP12	480.00	1.0233	BUS-2131HFEED	480.00	1.0371
BUS-2131LSCPWR	480.00	1.0233	BUS-2131PSCHTR	480.00	1.0233
BUS-213HTP21A	480.00	1.0233	BUS-21RW1	480.00	1.0392
BUS-223SST#2	6900.00	1.0398	BUS-224CWP23	6900.00	1.0398
BUS-226RCP24	6900.00	1.0398	BUS-22RW3	480.00	1.0236
BUS-245DRIAD	208.00	.9568	BUS-26AAL3DP1	480.00	.9783
BUS-26AAL3DP1B	480.00	.9771	BUS-26AAL4H2O2	480.00	.9783
BUS-26AAM3CIA	480.00	.9769	BUS-26BBA2SREF	480.00	.9730
BUS-26BBB3DP2	480.00	.9741	BUS-26BBB3DP2B	480.00	.9737
BUS-26BBB4H2O2	480.00	.9741	BUS-2A	480.00	1.0027
BUS-3	6900.00	1.0398	BUS-31ARW3	6900.00	1.0398
BUS-32CWP26	6900.00	1.0398	BUS-33SST#3	6900.00	1.0398
BUS-34RCP23	6900.00	1.0398	BUS-3A	480.00	1.0092
BUS-4	6900.00	1.0400	BUS-410CP23	6900.00	1.0400
BUS-411CWP24	6900.00	1.0400	BUS-49RCP22	6900.00	1.0400
BUS-5	6900.00	1.0399	BUS-518SST#5	6900.00	1.0399
BUS-519CWP25	6900.00	1.0399	BUS-5A	480.00	.9902
BUS-6	6900.00	1.0402	BUS-616CWP22	6900.00	1.0402
BUS-617SST#6	6900.00	1.0402	BUS-6A	480.00	.9828

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUS-CCRVDP21	480.00	1.0018	BUS-EDG23AL(A)	208.00	.9687
BUS-EDG23AL(B)	480.00	.9676	BUS-EPV21	208.00	.9639
BUS-EPX3	208.00	.9492	BUS-MCC 212	480.00	1.0392
BUS-MCC 213	480.00	1.0236	BUS-R45DP	208.00	.9478
BUS-RCS	120.00	.9750	BUS-RP1-C2	120.00	.9731
BUS-RWSP11	480.00	1.0392	BUS-RWSP12	480.00	1.0236
BUS-SCWSH21	480.00	1.0392	BUS-SCWSH22	480.00	1.0392
BUS-SCWSH23	480.00	1.0236	BUS-SHT21	208.00	.9568
BUS-SHT22	208.00	.9551	HT-LTG-22	480.00	1.0092
HT-RW1	6900.00	1.0395	HT-RW3	6900.00	1.0388
HT-SST#2	6900.00	1.0395	HT-SST#3	6900.00	1.0395
HT-SST#5	6900.00	1.0394	HT-SST#6	6900.00	1.0397
LT-AUTO-XFMR	6900.00	.0000	LT-LTG-22	208.00	1.0092
LT-LTG23	208.00	.0000	LT-RW1	480.00	1.0392
LT-RW3	480.00	1.0237	LT-SST#2	480.00	1.0032
LT-SST#3	480.00	1.0097	LT-SST#5	480.00	.9910
LT-SST#6	480.00	.9836	LT-XFMR-DP2	120.00	.9664
MCC 21	480.00	1.0027	MCC 210	480.00	1.0027
MCC 212	480.00	1.0390	MCC 213	480.00	1.0233
MCC 22	480.00	1.0092	MCC 23	480.00	1.0027
MCC 25	480.00	1.0092	MCC 26AA	480.00	.9783
MCC 26BB	480.00	.9741	MCC 28	480.00	.9902
MCC 28A	480.00	1.0027	MCC-211	480.00	1.0092
MCC-24	480.00	.9919	MCC-24A	480.00	.9928
MCC-26A	480.00	.9791	MCC-26B	480.00	.9745
MCC-26C	480.00	1.0058	MCC-27A	480.00	.9828
MCC-29	480.00	.9874	MCC-29A	480.00	.9877
MT-AFP21	480.00	.9941	MT-AFP23	480.00	.9690
MT-CCP21	480.00	.9715	MT-CCP22	480.00	.9789
MT-CCP23	480.00	.9597	MT-CHP21	480.00	.9902
MT-CHP22	480.00	1.0092	MT-CHP23	480.00	.9828
MT-CP21	6900.00	1.0381	MT-CP23	6900.00	1.0384
MT-CRF21	480.00	.9797	MT-CRF22	480.00	.9676
MT-CRF23	480.00	.9752	MT-CRF24	480.00	.9822
MT-CRF25	480.00	.9509	MT-CSP21	480.00	.9739
MT-CSP22	480.00	.9660	MT-CWP21	6900.00	1.0383
MT-CWP22	6900.00	1.0388	MT-CWP23	6900.00	1.0385
MT-CWP24	6900.00	1.0384	MT-CWP25	6900.00	1.0384
MT-CWP26	6900.00	1.0382	MT-RCP21	6900.00	1.0375

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
 Computer Run: LF SI (Total Auto) Case 1
 Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
MT-RCP22	6900.00	1.0377	MT-RCP23	6900.00	1.0376
MT-RCP24	6900.00	1.0370	MT-RHR21	480.00	.9957
MT-RHR22	480.00	.9684	MT-RMG21	480.00	1.0027
MT-RMG22	480.00	.9828	MT-RP21	480.00	.9902
MT-RP22	480.00	.9828	MT-SAC	480.00	.9902
MT-SIP21	480.00	.9777	MT-SIP22	480.00	.9896
MT-SIP23	480.00	.9696	MT-SWP21	480.00	.9902
MT-SWP22	480.00	.0000	MT-SWP23	480.00	.9828
MT-SWP24	480.00	.9676	MT-SWP25	480.00	1.0002
MT-SWP26	480.00	.9623	MT-TAO	480.00	.9828
PR HTR DP-21	480.00	1.0092	PR HTR DP-22	480.00	1.0027
PR HTR DP-23	480.00	.9902	PR HTR DP-24	480.00	.0000
SPLICE BOX	6900.00	.0000	TRM-120VDP	480.00	1.0018
TRM-2131EHCP12	480.00	1.0222	TRM-213HTP21A	480.00	1.0206
TRM-213SC28HTR	480.00	1.0184	TRM-213SC28PWR	480.00	1.0183
TRM-242BRSATAL	480.00	.9919	TRM-242FIPCF22	480.00	.9913
TRM-242HRVF21	480.00	.9915	TRM-242KRVF22	480.00	.9915
TRM-242MRVF23	480.00	.9915	TRM-243BWEF24	480.00	.9914
TRM-243DWEF25	480.00	.9914	TRM-243FIPCF24	480.00	.9913
TRM-243HRVF24	480.00	.9915	TRM-243KRVF25	480.00	.9916
TRM-244DVRINV	480.00	.9919	TRM-244FIPCF26	480.00	.9913
TRM-244HWEF21	480.00	.9914	TRM-244KWEF22	480.00	.9914
TRM-244MWEF23	480.00	.9914	TRM-245DRIAD	480.00	.9919
TRM-245MCLGWP2	480.00	.9917	TRM-246BRRCNTS	480.00	.9919
TRM-24A1AMCC24	480.00	.9928	TRM-24A2A-CC2	480.00	.9857
TRM-24A2AR45DP	480.00	.9928	TRM-24A2CED22A	480.00	.9928
TRM-24A2EBCH22	480.00	.9928	TRM-24A3CCMP22	480.00	.9925
TRM-24A4AIAC22	480.00	.9921	TRM-26A1BEF21	480.00	.9786
TRM-26A1DEPV21	480.00	.9791	TRM-26A1DRDP1	480.00	.9781
TRM-26A6HEPX3	480.00	.9791	TRM-26A6HRBAHT	480.00	.9791
TRM-26A6KRCP21	480.00	.9785	TRM-26AAL4H2O2	480.00	.9752
TRM-26B1BEF22	480.00	.9740	TRM-26B5KRAC22	480.00	.9744
TRM-26B5MRLEDV	480.00	.9742	TRM-26B5MRREDV	480.00	.9740
TRM-26B6BRREDA	480.00	.9736	TRM-26B7DHVAC	480.00	.9745
TRM-26B7MBAP22	480.00	.9742	TRM-26BBA2SREF	480.00	.9710
TRM-26BBB3DP2	120.00	.9650	TRM-26BBB4H2O2	480.00	.9708
TRM-26C1ASFP21	480.00	1.0057	TRM-26C1DBF21	480.00	1.0017
TRM-26C1HBUVF	480.00	1.0018	TRM-26C1M120DP	480.00	1.0018
TRM-26C2BPAB21	480.00	1.0057	TRM-26C3ABT21H	480.00	1.0058

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-26C3FBC23	480.00	1.0058	TRM-26C3HPWP21	480.00	1.0058
TRM-26C3NBAP21	480.00	1.0057	TRM-26C4FVDP21	480.00	1.0058
TRM-26C5AEF213	480.00	1.0058	TRM-26C5LGVP2	480.00	1.0056
TRM-291ERSPHTR	480.00	.9874	TRM-292BLUATAL	480.00	.9874
TRM-294BLSHT22	480.00	.9874	TRM-294BRSH21	480.00	.9874
TRM-294HWEF216	480.00	.9863	TRM-294MDGBH	480.00	.9874
TRM-296BHRSSP1	480.00	.9871	TRM-29A1AMC29	480.00	.9877
TRM-29A3CIAC21	480.00	.9869	TRM-29A3EED21A	480.00	.9877
TRM-29A3GEF215	480.00	.9866	TRM-29A3JBCH21	480.00	.9877
TRM-29A3LIAC21	480.00	.9875	TRM-2A21CMC28A	480.00	1.0027
TRM-2A22APHBG	480.00	1.0027	TRM-2A22BMC24A	480.00	1.0023
TRM-2A22CCCP22	480.00	1.0025	TRM-2A23CRMG21	480.00	1.0027
TRM-2A24ASWP22	480.00	.0000	TRM-2A24BSIP22	480.00	1.0025
TRM-2A24CMC210	480.00	1.0027	TRM-2A25ASWP25	480.00	1.0025
TRM-2A25BMC23	480.00	1.0027	TRM-2A26CCRF23	480.00	1.0025
TRM-2AMC21	480.00	1.0027	TRM-2ATIE3A&6A	480.00	1.0092
TRM-3A1CMCC211	480.00	1.0092	TRM-3A2AMCC26C	480.00	1.0092
TRM-3A2BMCC25	480.00	1.0092	TRM-3A2CLTSW24	480.00	1.0092
TRM-3A3ACRF24	480.00	1.0092	TRM-3A3BMCC22	480.00	1.0092
TRM-3A3CSWP25	480.00	1.0002	TRM-3A4APHBG21	480.00	1.0092
TRM-3A4CSIP22	480.00	.9896	TRM-3A5ASWP22	480.00	.0000
TRM-3A5BCHP22	480.00	1.0092	TRM-3A5CRHR21	480.00	1.0092
TRM-3A6CAFP21	480.00	1.0092	TRM-3ATIE2A&6A	480.00	.9902
TRM-5A15ASIP21	480.00	.9900	TRM-5A15BCSP21	480.00	.9900
TRM-5A15CCRF21	480.00	.9900	TRM-5A16APHBG	480.00	.9902
TRM-5A16BMCC28	480.00	.9902	TRM-5A16CRP21	480.00	.9902
TRM-5A17ACCP21	480.00	.9901	TRM-5A17BMC26A	480.00	.9902
TRM-5A17CLTSED	480.00	.0000	TRM-5A18ACRF22	480.00	.9900
TRM-5A18BCHP21	480.00	.9902	TRM-5A18CSAC	480.00	.9902
TRM-5A19AMC29A	480.00	.9901	TRM-5A19BSWP24	480.00	.9900
TRM-5A19CSWP21	480.00	.9902	TRM-6A10ASIP23	480.00	.9825
TRM-6A10BMC27A	480.00	.9828	TRM-6A10CCRF25	480.00	.9826
TRM-6A11ARHR22	480.00	.9826	TRM-6A11ARP22	480.00	.9828
TRM-6A11BCHP23	480.00	.9828	TRM-6A12ACSP22	480.00	.9825
TRM-6A12BTAO	480.00	.9828	TRM-6A12CCCP23	480.00	.9826
TRM-6A7BT2A&3A	480.00	1.0092	TRM-6A7CRMG22	480.00	.9828
TRM-6A8ALTSW22	480.00	.0000	TRM-6A8BSWP26	480.00	.9826
TRM-6A8CSWP23	480.00	.9828	TRM-6A9APHCG24	480.00	.0000
TRM-6A9BMC26B	480.00	.9826	TRM-6A9CAFP23	480.00	.9825

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-ACCP21	480.00	.9673	TRM-ACCP22	480.00	.9638
TRM-BAHT	480.00	.9770	TRM-BAPP22	480.00	.9629
TRM-BATCH21	480.00	.9773	TRM-BATCH22	480.00	.9765
TRM-BATCH23	480.00	1.0036	TRM-BATK21HTR	480.00	.9790
TRM-BAXFERP21	480.00	.9713	TRM-BF21	480.00	1.0012
TRM-BKR-SST#2	480.00	1.0030	TRM-BKR-SST#3	480.00	1.0095
TRM-BKR-SST#5	480.00	.9907	TRM-BKR-SST#6	480.00	.9833
TRM-BUVF	480.00	1.0013	TRM-CLGWP22	480.00	.9843
TRM-CRHVACDP	480.00	.9438	TRM-DGBH	480.00	.9659
TRM-DGVDP2	480.00	1.0044	TRM-DISTPNL1	480.00	.9736
TRM-EBB1-S	120.00	.9540	TRM-EDG21AL	480.00	.9874
TRM-EDG22AL	480.00	.9923	TRM-EDG23AL	480.00	.9707
TRM-EDGVDP1	480.00	.9520	TRM-EDN2 (N)	480.00	.0000
TRM-EDVDP1	480.00	.9348	TRM-EF215	480.00	.9840
TRM-EPF5	120.00	.9503	TRM-EPV21	480.00	.9769
TRM-EPX3	480.00	.9755	TRM-ETEF21	480.00	.9724
TRM-ETEF22	480.00	.9677	TRM-FAN321	480.00	1.0043
TRM-HRSSP1	480.00	.9692	TRM-IAC21	480.00	.9793
TRM-IAC22	480.00	.9767	TRM-IACCWP22	480.00	.9881
TRM-IACLGCP21	480.00	.9835	TRM-IAD	480.00	.9912
TRM-IPHCF22	480.00	.9822	TRM-IPHCF24	480.00	.9821
TRM-IPHCF26	480.00	.9826	TRM-LTRFSW22	480.00	.0000
TRM-PABEF21	480.00	.9891	TRM-PRHTR21P	480.00	1.0092
TRM-PRHTR21S	480.00	1.0092	TRM-PRHTR22P	480.00	1.0027
TRM-PRHTR22S	480.00	1.0027	TRM-PRHTR23P	480.00	.9902
TRM-PRHTR23S	480.00	.9902	TRM-PRHTR24P	480.00	.0000
TRM-PRHTR24S	480.00	.0000	TRM-PWMUP21	480.00	.9810
TRM-RCS	480.00	.9836	TRM-RVF21	480.00	.9788
TRM-RVF22	480.00	.9801	TRM-RVF23	480.00	.9812
TRM-RVF24	480.00	.9824	TRM-RVF25	480.00	.9825
TRM-RWSP11	480.00	1.0392	TRM-RWSP12	480.00	1.0209
TRM-SATAUXL	480.00	.9652	TRM-SCWSH21	480.00	1.0392
TRM-SCWSH22	480.00	1.0392	TRM-SCWSH23	480.00	1.0217
TRM-SFP21	480.00	.9916	TRM-SHT21	480.00	.9859
TRM-SHT22	480.00	.9858	TRM-SPHTR	480.00	.9823
TRM-TRS-11	480.00	1.0353	TRM-TRS-12	480.00	1.0353
TRM-TRS-PANEL	480.00	1.0371	TRM-UATAL	480.00	.9646
TRM-VREGINV	480.00	.9902	TRM-WEF21	480.00	.9847
TRM-WEF213	480.00	1.0053	TRM-WEF216	480.00	.9840

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-WEF22	480.00	.9861	TRM-WEF23	480.00	.9871
TRM-WEF24	480.00	.9867	TRM-WEF25	480.00	.9853
TRM26AAM3CIA	480.00	.9756			

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUCHANAN 138kV	BUS-1079	FDR	.07	179.95	44086.96	UNKNOWN
BUS-00001	BUS-0001	TX2	.07	179.95	44086.96	8.13
BUS-00001	BUS-00002	FDR	.00	.00	.00	UNKNOWN
BUS-00003	BUS-0003	TX2	.00	.00	.00	.00
BUS-0005	BUS-00100	TX2	.00	.00	.00	.00
BUS-0005	BUS-0002	FDR	.00	.00	.00	UNKNOWN
BUS-00104	BUS-00107	FDR	.03	679.55	8444.61	56.63
BUS-00104	BUS-00109	FDR	.00	616.78	7664.57	51.40
BUS-00105	BUS-00112	FDR	.00	678.43	8432.77	56.54
BUS-00105	BUS-00110	FDR	.03	644.28	8008.26	53.69
BUS-00107	BUS-1	FDR	.00	679.55	8442.45	33.98
BUS-00109	BUS-2	FDR	.00	616.78	7664.52	30.84
BUS-00110	BUS-3	FDR	.00	644.28	8006.31	32.21
BUS-00112	BUS-4	FDR	.00	678.43	8432.71	33.92
BUS-00114	BUS-00104	FDR	.01	1296.33	16110.87	64.82
BUS-00115	BUS-6	FDR	.00	1322.71	16442.76	66.14
BUS-00115	BUS-00105	FDR	.01	1322.71	16442.76	66.14
BUS-00134RW1	HT-RW1	FDR	.00	.98	12.16	.44
BUS-00200	BUS-00201	FDR	.49	3203.40	40010.09	80.09
BUS-00201	BUS-00202	FDR	.03	1576.20	19594.64	78.81
BUS-00201	BUS-00203	FDR	.00	1627.21	20228.75	81.36
BUS-00202	BUS-5	FDR	.00	1576.20	19589.57	78.81
BUS-00203	BUS-6	FDR	.00	1627.21	20228.48	81.36
BUS-0801	TRM-SATAUXL	FDR	.63	27.91	22.55	55.83
BUS-1	BUS-131RCP21	FDR	.00	392.39	4874.90	32.70
BUS-1	BUS-132CP21	FDR	.00	202.82	2519.68	16.90
BUS-1	BUS-133CWP21	FDR	.00	89.68	1114.17	7.47
BUS-1	BUS-00134RW1	FDR	.00	.98	12.16	.08
BUS-1079	BUS-00200	TX2	-2.08	179.95	44057.43	102.46
BUS-131RCP21	MT-RCP21	FDR	.21	392.39	4874.89	76.94
BUS-132CP21	MT-CP21	FDR	.14	202.82	2519.68	61.46
BUS-133CWP21	MT-CWP21	FDR	.12	89.68	1114.17	17.58
BUS-2	BUS-226RCP24	FDR	.00	392.56	4878.17	32.71

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-2	BUS-223SST#2	FDR	.00	140.85	1750.25	11.74
BUS-2	BUS-224CWP23	FDR	.00	89.67	1114.25	7.47
BUS-212IHFEED	TRM-TRS-PANEL	FDR	.18	14.07	12.16	28.15
BUS-2131EHCP12	TRM-2131EHCP12	FDR	.10	1.53	1.30	6.11
BUS-2131LSCPWR	TRM-213SC28PWR	FDR	.50	3.54	3.01	10.12
BUS-2131PSCHTR	TRM-213SC28HTR	FDR	.49	3.54	3.01	10.12
BUS-213HTP21A	TRM-213HTP21A	FDR	.27	11.79	10.03	10.25
BUS-21RW1	BUS-MCC 212	FDR	.00	14.07	12.16	1.86
BUS-223SST#2	HT-SST#2	FDR	.03	140.85	1750.24	27.62
BUS-224CWP23	MT-CWP23	FDR	.13	89.67	1114.24	17.58
BUS-226RCP24	MT-RCP24	FDR	.28	392.56	4878.16	76.97
BUS-22RW3	BUS-RWSP12	FDR	.00	572.76	487.41	113.64
BUS-22RW3	BUS-SCWSH23	FDR	.00	160.23	136.35	31.79
BUS-22RW3	BUS-MCC 213	FDR	.00	20.29	17.27	2.68
BUS-26AAL3DP1	BUS-26AAL3DP1B	FDR	.12	27.85	22.65	24.21
BUS-26AAL3DP1B	TRM-EBB1-S	TX2	2.31	27.85	22.62	50.27
BUS-26AAL4H2O2	TRM-26AAL4H2O2	FDR	.31	1.85	1.50	7.40
BUS-26AAM3CIA	TRM26AAM3CIA	FDR	.13	3.34	2.71	13.36
BUS-26BBA2SREF	TRM-26BBA2SREF	FDR	.20	5.34	4.32	15.26
BUS-26BBB3DP2	BUS-26BBB3DP2B	FDR	.04	9.97	8.08	8.67
BUS-26BBB3DP2B	LT-XFMR-DP2	TX2	.73	9.97	8.07	17.94
BUS-26BBB4H2O2	TRM-26BBB4H2O2	FDR	.33	1.86	1.51	7.43
BUS-2A	TRM-2A26CCRF23	FDR	.02	353.91	295.01	67.03
BUS-2A	TRM-2A22CCCP22	FDR	.02	313.93	261.69	71.35
BUS-2A	TRM-2A25ASWP25	FDR	.02	381.49	318.01	75.69
BUS-2A	TRM-2A24BSIP22	FDR	.02	422.22	351.96	70.37
BUS-2A	TRM-2A22APHBG	FDR	.00	.00	.00	.00
BUS-2A	TRM-2A21CMC28A	FDR	.00	.00	.00	.00
BUS-2A	TRM-2A24CMC210	FDR	.00	.00	.00	.00
BUS-2A	TRM-2A22BMC24A	FDR	.03	556.40	463.81	70.25
BUS-2A	TRM-2A25BMC23	FDR	.00	.00	.00	.00
BUS-2A	TRM-2AMC21	FDR	.00	.00	.00	.00
BUS-3	BUS-34RCP23	FDR	.00	392.34	4875.42	32.69
BUS-3	BUS-32CWP26	FDR	.00	89.69	1114.54	7.47
BUS-3	BUS-33SST#3	FDR	.00	116.23	1444.37	9.69
BUS-3	BUS-31ARW3	FDR	.00	52.36	650.72	4.36
BUS-31ARW3	HT-RW3	FDR	.10	52.36	650.72	23.27
BUS-32CWP26	MT-CWP26	FDR	.16	89.69	1114.54	17.59
BUS-33SST#3	HT-SST#3	FDR	.03	116.23	1444.36	22.79

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-34RCP23	MT-RCP23	FDR	.22	392.34	4875.41	76.93
BUS-3A	TRM-3A6CAFP21	FDR	.00	541.40	454.26	82.03
BUS-3A	TRM-3A5CRHR21	FDR	.00	421.46	353.62	70.24
BUS-3A	TRM-3A3ACRF24	FDR	.00	351.38	294.83	66.55
BUS-3A	TRM-3A5BCHP22	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A4APHBG21	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A2CLTSW24	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A3BMCC22	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A2BMCC25	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A2AMCC26C	FDR	.00	357.90	300.30	47.34
BUS-3A	TRM-3A1CMCC211	FDR	.00	.00	.00	.00
BUS-4	BUS-49RCP22	FDR	.00	392.29	4876.04	32.69
BUS-4	BUS-410CP23	FDR	.00	202.76	2520.24	16.90
BUS-4	BUS-411CWP24	FDR	.00	89.67	1114.57	7.47
BUS-410CP23	MT-CP23	FDR	.17	202.76	2520.23	39.76
BUS-411CWP24	MT-CWP24	FDR	.16	89.67	1114.56	17.58
BUS-49RCP22	MT-RCP22	FDR	.23	392.29	4876.03	76.92
BUS-5	BUS-00114	FDR	.00	1296.33	16111.04	64.82
BUS-5	BUS-518SST#5	FDR	.00	195.49	2429.61	9.77
BUS-5	BUS-519CWP25	FDR	.00	89.67	1114.47	7.47
BUS-518SST#5	HT-SST#5	FDR	.05	195.49	2429.61	38.33
BUS-519CWP25	MT-CWP25	FDR	.15	89.67	1114.47	17.58
BUS-5A	TRM-5A15ASIP21	FDR	.02	427.33	351.80	71.22
BUS-5A	TRM-5A15BCSP21	FDR	.02	478.33	393.79	72.47
BUS-5A	TRM-5A15CCRF21	FDR	.02	352.28	290.01	66.72
BUS-5A	TRM-5A18ACRF22	FDR	.02	356.70	293.66	67.56
BUS-5A	TRM-5A17ACCP21	FDR	.02	316.33	260.42	71.89
BUS-5A	TRM-5A19CSWP21	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A19BSWP24	FDR	.02	394.34	324.64	78.24
BUS-5A	TRM-5A18CSAC	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A16APHBG	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A16CRP21	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A18BCHP21	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A17BMC26A	FDR	.01	120.98	99.60	44.48
BUS-5A	TRM-5A16BMCC28	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A19AMC29A	FDR	.02	366.59	301.80	46.29
BUS-6	BUS-617SST#6	FDR	.00	219.92	2733.91	18.33
BUS-6	BUS-616CWP22	FDR	.00	89.64	1114.35	7.47
BUS-616CWP22	MT-CWP22	FDR	.14	89.64	1114.35	17.58

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-617SST#6	HT-SST#6	FDR	.05	219.92	2733.90	43.12
BUS-6A	TRM-6A10ASIP23	FDR	.02	465.39	380.25	77.57
BUS-6A	TRM-6A12ACSP22	FDR	.02	482.21	393.99	73.06
BUS-6A	TRM-6A10CCRF25	FDR	.02	362.97	296.56	68.74
BUS-6A	TRM-6A11ARHR22	FDR	.02	433.35	354.07	72.22
BUS-6A	TRM-6A12CCCP23	FDR	.02	320.21	261.63	72.78
BUS-6A	TRM-6A8CSWP23	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A8BSWP26	FDR	.02	396.52	323.98	78.68
BUS-6A	TRM-6A9CAFP23	FDR	.03	550.91	450.12	83.47
BUS-6A	TRM-6A11ARP22	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A11BCHP23	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A9BMC26B	FDR	.01	156.06	127.51	44.33
BUS-6A	TRM-6A10BMC27A	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A12BTAO	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A7CRMG22	FDR	.00	.00	.00	.00
BUS-CCRVDP21	TRM-26C1DBF21	FDR	.01	9.79	8.16	UNKNOWN
BUS-CCRVDP21	TRM-26C1M120DP	FDR	.00	1.00	.83	UNKNOWN
BUS-CCRVDP21	TRM-26C1HBUVF	FDR	.00	9.48	7.89	UNKNOWN
BUS-MCC 212	MCC 212	FDR	.02	14.07	12.16	6.12
BUS-MCC 213	MCC 213	FDR	.03	20.29	17.27	8.82
BUS-RCS	BUS-RP1-C2	FDR	.19	27.69	5.61	42.60
BUS-RWSP12	TRM-RWSP12	FDR	.26	572.76	487.41	75.36
BUS-SCWSH23	TRM-SCWSH23	FDR	.18	160.23	136.35	69.67
HT-LTG-22	LT-LTG-22	TX2	.00	.00	.00	.00
HT-RW1	LT-RW1	TX2	.03	.98	12.16	.97
HT-RW3	LT-RW3	TX2	1.51	52.37	650.12	52.01
HT-SST#2	LT-SST#2	TX2	3.63	140.85	1749.76	65.63
HT-SST#3	LT-SST#3	TX2	2.99	116.23	1444.01	54.16
HT-SST#5	LT-SST#5	TX2	4.84	195.50	2428.39	91.09
HT-SST#6	LT-SST#6	TX2	5.61	219.93	2732.57	102.50
LT-RW1	BUS-21RW1	FDR	.00	14.07	12.16	.88
LT-RW3	BUS-22RW3	FDR	.01	752.74	640.66	47.05
LT-SST#2	TRM-BKR-SST#2	FDR	.02	2024.67	1688.67	67.49
LT-SST#3	TRM-BKR-SST#3	FDR	.02	1670.82	1402.53	55.69
LT-SST#5	TRM-BKR-SST#5	FDR	.03	2810.20	2315.21	93.67
LT-SST#6	TRM-BKR-SST#6	FDR	.03	3161.39	2585.22	105.38
LT-XFMR-DP2	TRM-26BBB3DP2	FDR	.13	39.88	8.01	22.79
MCC 212	BUS-212IHFEED	FDR	.00	14.07	12.16	UNKNOWN
MCC 213	BUS-2131EHCP12	FDR	.00	1.53	1.30	UNKNOWN

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
MCC 213	BUS-2131LSCPWR	FDR	.00	3.54	3.01	UNKNOWN
MCC 213	BUS-2131PSCHTR	FDR	.00	3.54	3.01	UNKNOWN
MCC 213	BUS-213HTP21A	FDR	.00	11.79	10.03	UNKNOWN
MCC 26AA	BUS-26AAM3CIA	FDR	.14	3.34	2.72	UNKNOWN
MCC 26AA	BUS-26AAL3DP1	FDR	.00	27.85	22.65	UNKNOWN
MCC 26AA	BUS-26AAL4H2O2	FDR	.00	1.85	1.50	UNKNOWN
MCC 26BB	BUS-26BBA2SREF	FDR	.11	5.34	4.33	UNKNOWN
MCC 26BB	BUS-26BBB3DP2	FDR	.00	9.97	8.08	UNKNOWN
MCC 26BB	BUS-26BBB4H2O2	FDR	.00	1.86	1.51	UNKNOWN
MCC-24	TRM-242FIPCF22	FDR	.06	13.64	11.25	UNKNOWN
MCC-24	TRM-242BRSATAL	FDR	.00	27.91	23.02	UNKNOWN
MCC-24	TRM-242HRVF21	FDR	.04	20.54	16.94	UNKNOWN
MCC-24	TRM-246BRRCNTS	FDR	.00	6.92	5.71	UNKNOWN
MCC-24	TRM-242KRVF22	FDR	.04	20.51	16.92	UNKNOWN
MCC-24	TRM-242MRVF23	FDR	.04	20.49	16.90	UNKNOWN
MCC-24	TRM-245MCLGWP2	FDR	.02	120.73	99.56	UNKNOWN
MCC-24	TRM-243BWEF24	FDR	.06	13.58	11.20	UNKNOWN
MCC-24	TRM-243DWEF25	FDR	.06	13.60	11.22	UNKNOWN
MCC-24	TRM-244DVRINV	FDR	.00	1.82	1.50	UNKNOWN
MCC-24	TRM-243FIPCF24	FDR	.06	13.65	11.25	UNKNOWN
MCC-24	TRM-243HRVF24	FDR	.04	20.46	16.88	UNKNOWN
MCC-24	TRM-243KRVF25	FDR	.03	20.46	16.87	UNKNOWN
MCC-24	TRM-244HWEF21	FDR	.06	13.61	11.22	UNKNOWN
MCC-24	TRM-244FIPCF26	FDR	.06	13.64	11.25	UNKNOWN
MCC-24	TRM-244KWEF22	FDR	.06	13.59	11.21	UNKNOWN
MCC-24	TRM-244MWEF23	FDR	.06	13.58	11.20	UNKNOWN
MCC-24	TRM-245DRIAD	FDR	.00	2.77	2.28	UNKNOWN
MCC-24A	TRM-24A1AMCC24	FDR	.00	370.33	305.66	UNKNOWN
MCC-24A	TRM-24A2CED22A	FDR	.00	9.15	7.55	UNKNOWN
MCC-24A	TRM-24A2AR45DP	FDR	.00	30.46	25.14	UNKNOWN
MCC-24A	TRM-24A3CCMP22	FDR	.03	83.84	69.20	UNKNOWN
MCC-24A	TRM-24A2EBCH22	FDR	.00	61.59	50.83	UNKNOWN
MCC-24A	TRM-24A4AIAC22	FDR	.06	2.34	1.93	UNKNOWN
MCC-26A	MCC 26AA	FDR	.08	32.75	26.66	14.24
MCC-26A	TRM-26A1BEF21	FDR	.05	11.85	9.65	UNKNOWN
MCC-26A	TRM-26A1DEPV21	FDR	.00	10.40	8.46	UNKNOWN
MCC-26A	TRM-26A1DRDP1	FDR	.10	27.21	22.15	UNKNOWN
MCC-26A	TRM-26A6HRBAHT	FDR	.00	14.48	11.79	UNKNOWN
MCC-26A	TRM-26A6KRCP21	FDR	.06	6.48	5.27	UNKNOWN

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1

Computer Run: LF SI (Total Auto) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
MCC-26A	TRM-26A6HEPX3	FDR	.00	21.12	17.19	UNKNOWN
MCC-26B	MCC 26BB	FDR	.04	16.05	13.00	6.98
MCC-26B	TRM-26B1BEF22	FDR	.05	11.91	9.65	UNKNOWN
MCC-26B	TRM-26B7DHVAC	FDR	.00	70.99	57.52	UNKNOWN
MCC-26B	TRM-26B6BRREDA	FDR	.09	11.31	9.17	UNKNOWN
MCC-26B	TRM-26B5MRLEDV	FDR	.03	7.64	6.19	UNKNOWN
MCC-26B	TRM-26B5MRREDV	FDR	.05	13.54	10.97	UNKNOWN
MCC-26B	TRM-26B7MBAP22	FDR	.03	18.16	14.72	UNKNOWN
MCC-26B	TRM-26B5KRAC22	FDR	.01	6.49	5.26	UNKNOWN
MCC-26C	TRM-26C4FVDP21	FDR	.00	20.23	16.91	UNKNOWN
MCC-26C	TRM-26C1ASFP21	FDR	.01	107.79	90.14	UNKNOWN
MCC-26C	TRM-26C2BPAB21	FDR	.01	136.00	113.72	UNKNOWN
MCC-26C	TRM-26C3HPWP21	FDR	.01	26.40	22.08	UNKNOWN
MCC-26C	TRM-26C5LGVDP2	FDR	.03	7.25	6.07	UNKNOWN
MCC-26C	TRM-26C3ABT21H	FDR	.00	12.90	10.79	UNKNOWN
MCC-26C	TRM-26C3NBAP21	FDR	.01	14.59	12.20	UNKNOWN
MCC-26C	TRM-26C5AEF213	FDR	.00	2.82	2.36	UNKNOWN
MCC-26C	TRM-26C3FBC23	FDR	.00	33.29	27.84	UNKNOWN
MCC-29	TRM-294HWEF216	FDR	.11	3.29	2.70	UNKNOWN
MCC-29	TRM-296BHRSSP1	FDR	.02	18.73	15.38	UNKNOWN
MCC-29	TRM-294MDGBH	FDR	.00	93.40	76.67	UNKNOWN
MCC-29	TRM-294BRSHT21	FDR	.00	27.62	22.67	UNKNOWN
MCC-29	TRM-294BLSHT22	FDR	.00	26.54	21.78	UNKNOWN
MCC-29	TRM-292BLUATAL	FDR	.00	37.41	30.71	UNKNOWN
MCC-29	TRM-291ERSPHTR	FDR	.00	12.24	10.05	UNKNOWN
MCC-29A	TRM-29A3CIAC21	FDR	.09	4.65	3.82	UNKNOWN
MCC-29A	TRM-29A3JBCH21	FDR	.00	61.54	50.53	UNKNOWN
MCC-29A	TRM-29A3LIAC21	FDR	.03	83.26	68.37	UNKNOWN
MCC-29A	TRM-29A3GEF215	FDR	.11	3.29	2.71	UNKNOWN
MCC-29A	TRM-29A3EED21A	FDR	.00	8.85	7.27	UNKNOWN
MCC-29A	TRM-29A1AMC29	FDR	.00	210.17	172.59	26.27
TRM-120VDP	BUS-120VDP	TX2	3.53	1.00	.83	82.92
TRM-242BRSATAL	BUS-0801	FDR	2.04	27.91	23.02	55.83
TRM-242FIPCF22	TRM-IPHCF22	FDR	.91	13.64	11.25	54.58
TRM-242HRVF21	TRM-RVF21	FDR	1.28	20.54	16.93	41.08
TRM-242KRVF22	TRM-RVF22	FDR	1.14	20.51	16.91	41.02
TRM-242MRVF23	TRM-RVF23	FDR	1.03	20.49	16.89	40.98
TRM-243BWEF24	TRM-WEF24	FDR	.47	13.58	11.20	38.81
TRM-243DWEF25	TRM-WEF25	FDR	.61	13.60	11.21	38.87

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-243FIPCF24	TRM-IPHCF24	FDR	.93	13.65	11.25	54.59
TRM-243HRVF24	TRM-RVF24	FDR	.92	20.46	16.87	40.93
TRM-243KRVF25	TRM-RVF25	FDR	.92	20.46	16.87	40.92
TRM-244DVRINV	TRM-VREGINV	FDR	.17	1.82	1.50	5.21
TRM-244FIPCF26	TRM-IPHCF26	FDR	.87	13.64	11.24	54.56
TRM-244HWEF21	TRM-WEF21	FDR	.67	13.61	11.22	38.89
TRM-244KWEF22	TRM-WEF22	FDR	.52	13.59	11.20	38.83
TRM-244MWEF23	TRM-WEF23	FDR	.43	13.58	11.19	38.79
TRM-245DRIAD	TRM-IAD	FDR	.07	2.77	2.28	11.06
TRM-245MCLGWP2	TRM-CLGWP22	FDR	.74	120.73	99.54	52.49
TRM-246BRRCNTS	TRM-RCS	FDR	.83	6.92	5.71	19.78
TRM-24A1AMCC24	MCC-24	FDR	.09	370.33	305.66	77.96
TRM-24A2A-CC2	BUS-R45DP	TX2	3.79	30.46	24.96	83.20
TRM-24A2AR45DP	TRM-24A2A-CC2	FDR	.71	30.46	25.14	121.83
TRM-24A2CED22A	TRM-EDG22AL	FDR	.05	9.15	7.55	14.08
TRM-24A2EBCH22	TRM-BATCH22	FDR	1.63	61.59	50.83	72.46
TRM-24A3CCMP22	TRM-IAC22	FDR	1.58	83.84	69.18	72.91
TRM-24A4AIAC22	TRM-IACCWP22	FDR	.40	2.34	1.93	9.37
TRM-26A1BEF21	TRM-ETEF21	FDR	.62	11.85	9.64	33.87
TRM-26A1DEPV21	TRM-EPV21	FDR	.22	10.40	8.46	16.00
TRM-26A1DRDP1	TRM-DISTPNL1	FDR	.45	27.21	22.12	23.66
TRM-26A6HEPX3	TRM-EPX3	FDR	.36	21.12	17.19	32.49
TRM-26A6HRBAHT	TRM-BAHT	FDR	.21	14.48	11.79	17.03
TRM-26A6KRCP21	TRM-ACCP21	FDR	1.11	6.48	5.27	25.91
TRM-26B1BEF22	TRM-ETEF22	FDR	.63	11.91	9.64	34.03
TRM-26B5KRAC22	TRM-ACCP22	FDR	1.06	6.49	5.26	25.96
TRM-26B5MRLEDV	TRM-EDGVDP1	FDR	2.22	7.64	6.19	30.56
TRM-26B5MRREDV	TRM-EDVDP1	FDR	3.92	13.54	10.96	54.16
TRM-26B6BRREDA	TRM-EDG23AL	FDR	.29	11.31	9.16	13.31
TRM-26B7DHVAC	TRM-CRHVACDP	FDR	3.07	70.99	57.52	54.61
TRM-26B7MBAP22	TRM-BAPP22	FDR	1.13	18.16	14.71	72.66
TRM-26C1ASFP21	TRM-SFP21	FDR	1.41	107.79	90.13	46.87
TRM-26C1DBF21	TRM-BF21	FDR	.05	9.79	8.16	39.17
TRM-26C1HBUVF	TRM-BUVF	FDR	.05	9.48	7.89	37.90
TRM-26C1M120DP	TRM-120VDP	FDR	.00	1.00	.83	9.96
TRM-26C2BPAB21	TRM-PABEF21	FDR	1.66	136.00	113.71	59.13
TRM-26C3ABT21H	TRM-BATK21HTR	FDR	2.68	12.90	10.79	36.86
TRM-26C3FBC23	TRM-BATCH23	FDR	.23	33.29	27.84	51.22
TRM-26C3HPWP21	TRM-PWMUP21	FDR	2.48	26.40	22.08	52.81

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-26C3NBAP21	TRM-BAXFERP21	FDR	3.44	14.59	12.20	41.70
TRM-26C4FVDP21	BUS-CCRVP21	FDR	.40	20.23	16.91	17.59
TRM-26C5AEF213	TRM-WEF213	FDR	.05	2.82	2.36	11.27
TRM-26C5LGVDP2	TRM-DGVDP2	FDR	.12	7.25	6.06	4.14
TRM-291ERSPHTR	TRM-SPHTR	FDR	.51	12.24	10.05	48.98
TRM-292BLUATAL	TRM-UATAL	FDR	2.28	37.41	30.71	106.88
TRM-294BLSHT22	TRM-SHT22	FDR	.16	26.54	21.78	40.82
TRM-294BRSHT21	TRM-SHT21	FDR	.15	27.62	22.67	42.49
TRM-294HWEF216	TRM-WEF216	FDR	.23	3.29	2.70	13.18
TRM-294MDGBH	TRM-DGBH	FDR	2.15	93.40	76.67	81.22
TRM-296BHRSSP1	TRM-HRSSP1	FDR	1.80	18.73	15.37	37.46
TRM-29A1AMC29	MCC-29	FDR	.03	210.17	172.59	44.25
TRM-29A3CIAC21	TRM-IACLGCP21	FDR	.34	4.65	3.82	18.61
TRM-29A3EED21A	TRM-EDG21AL	FDR	.04	8.85	7.27	13.62
TRM-29A3GEF215	TRM-EF215	FDR	.26	3.29	2.70	13.18
TRM-29A3JBCH21	TRM-BATCH21	FDR	1.04	61.54	50.53	94.67
TRM-29A3LIAC21	TRM-IAC21	FDR	.81	83.26	68.35	72.40
TRM-2A22BMC24A	MCC-24A	FDR	.95	556.40	463.65	58.57
TRM-2A22CCCP22	MT-CCP22	FDR	2.36	313.93	261.65	66.09
TRM-2A24BSIP22	MT-SIP22	FDR	1.29	422.22	351.89	55.55
TRM-2A25ASWP25	MT-SWP25	FDR	.22	381.49	317.95	61.53
TRM-2A26CCRF23	MT-CRF23	FDR	2.72	353.91	294.96	57.08
TRM-3A2AMCC26C	MCC-26C	FDR	.34	357.90	300.30	37.67
TRM-3A3ACRF24	MT-CRF24	FDR	2.70	351.38	294.83	56.67
TRM-3A5CRHR21	MT-RHR21	FDR	1.35	421.46	353.62	55.45
TRM-3A6CAFP21	MT-AFP21	FDR	1.51	541.40	454.26	71.24
TRM-5A15ASIP21	MT-SIP21	FDR	1.23	427.33	351.73	56.23
TRM-5A15BCSP21	MT-CSP21	FDR	1.61	478.33	393.70	62.94
TRM-5A15CCRF21	MT-CRF21	FDR	1.03	352.28	289.96	56.82
TRM-5A17ACCP21	MT-CCP21	FDR	1.86	316.33	260.38	66.60
TRM-5A17BMC26A	MCC-26A	FDR	1.11	120.98	99.59	39.03
TRM-5A18ACRF22	MT-CRF22	FDR	2.24	356.70	293.60	57.53
TRM-5A19AMC29A	MCC-29A	FDR	.23	366.59	301.75	38.59
TRM-5A19BSWP24	MT-SWP24	FDR	2.24	394.34	324.57	63.60
TRM-6A10ASIP23	MT-SIP23	FDR	1.29	465.39	380.17	61.24
TRM-6A10CCRF25	MT-CRF25	FDR	3.17	362.97	296.50	58.54
TRM-6A11ARHR22	MT-RHR22	FDR	1.41	433.35	353.99	57.02
TRM-6A12ACSP22	MT-CSP22	FDR	1.65	482.21	393.90	63.45
TRM-6A12CCCP23	MT-CCP23	FDR	2.29	320.21	261.59	67.41

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (Total Auto) Case 1
Computer Run: LF SI (Total Auto) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-6A8BSWP26	MT-SWP26	FDR	2.02	396.52	323.91	63.96
TRM-6A9BMC26B	MCC-26B	FDR	.82	156.06	127.49	50.34
TRM-6A9CAFP23	MT-AFP23	FDR	1.34	550.91	449.98	72.49
TRM-BKR-SST#2	BUS-2A	FDR	.04	2024.67	1688.35	56.24
TRM-BKR-SST#3	BUS-3A	FDR	.03	1670.82	1402.31	46.41
TRM-BKR-SST#5	BUS-5A	FDR	.05	2810.20	2314.59	78.06
TRM-BKR-SST#6	BUS-6A	FDR	.05	3161.39	2584.43	83.63
TRM-DGVDP2	TRM-FAN321	FDR	.00	7.25	6.06	29.01
TRM-EBB1-S	TRM-EPF5	FDR	.37	111.38	22.08	63.65
TRM-EDG23AL	BUS-EDG23AL (A)	TX2	.20	2.44	1.97	4.38
TRM-EDG23AL	BUS-EDG23AL (B)	FDR	.30	9.00	7.26	13.85
TRM-EDN2 (N)	LT-LTG23	TX2	.00	.00	.00	.00
TRM-EPV21	BUS-EPV21	TX2	1.29	10.40	8.45	28.15
TRM-EPX3	BUS-EPX3	TX2	2.63	21.12	17.13	57.09
TRM-IAD	BUS-245DRIAD	TX2	3.44	2.77	2.28	75.97
TRM-PRHTR21P	TRM-PRHTR21S	TX2	.00	.00	.00	.00
TRM-PRHTR22P	TRM-PRHTR22S	TX2	.00	.00	.00	.00
TRM-PRHTR23P	TRM-PRHTR23S	TX2	.00	.00	.00	.00
TRM-PRHTR24P	TRM-PRHTR24S	TX2	.00	.00	.00	.00
TRM-RCS	BUS-RCS	TX2	.86	6.92	5.66	18.87
TRM-SHT21	BUS-SHT21	TX2	2.91	27.62	22.64	75.47
TRM-SHT22	BUS-SHT22	TX2	3.07	26.54	21.75	72.49
TRM-TRS-PANEL	TRM-TRS-11	FDR	.19	7.04	6.07	28.15
TRM-TRS-PANEL	TRM-TRS-12	FDR	.19	7.04	6.07	28.15

NOTE: FDR RATING% = % AMPS RATING BASED ON LIBRARY FLA OR BRANCH INPUT FLA
TX2 RATING% = % KVA RATING BASED ON TRANSFORMER FL KVA

395 BUSES

*** T O T A L S Y S T E M L O S S E S ***

587. KW 7416. KVAR

WARNING STUDY CONTAINS 26 VOLTAGE CRITERIA VIOLATIONS
VIOLATIONS DENOTED BY (\$) AT BUS AND BRANCH %VD LOCATIONS

ENCLOSURE 7 TO NL-09-010

DAPPER RUN FOR SAFETY INJECTION (SI) AUTOMATIC-
MANUAL LOADING

ENTERGY NUCLEAR OPERATIONS, INC
INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
DOCKET No. 50-247

Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi
Dec 16, 2003 14:27:37□

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL
INTERPRETATION AND APPLICATION BY A REGISTERED ENGINEER ONLY

SKM POWER*TOOLS FOR WINDOWS
LOAD FLOW AND VOLTAGE DROP ANALYSIS REPORT
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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

*** SOLUTION COMMENTS ***

=====

SOLUTION PARAMETERS

BRANCH VOLTAGE CRITERIA : 3.00 %
BUS VOLTAGE CRITERIA : 5.00 %

ACCELERATION FACTOR FOR 'PV' GENERATORS : 1.00
ACCELERATION FACTOR FOR CONSTANT KVA LOADS: 1.00
EXACT(ITERATIVE) SOLUTION : YES

UTILITY IMPEDANCE : NO
TRANSFORMER PHASE SHIFT : NO

ALL PU VALUES ARE EXPRESSED ON A 100 MVA BASE

LOAD FLOW IS BASED ON DIRECTLY CONNECTED LOADS.
AND WITH APPLIED FIRST LEVEL DEMAND OR LOAD FACTORS.
LOAD ANALYSIS INCLUDES ALL LOADS.

<<PERCENT VOLTAGE DROPS ARE BASED ON NOMINAL DESIGN VOLTAGES>>

SWING GENERATORS

SOURCE NAME	VOLTAGE	ANGLE
=====		
UTIL-138KVS	1.054	.00

LARGEST LOAD:	2516.16 KVA	
CONVERGENCE CRITERIA:	.126 KVA	
LARGEST BUS MISMATCH	MT-CP23	202.037 KVA
LARGEST BUS MISMATCH	MT-CP23	4.908 KVA
LARGEST BUS MISMATCH	BUS-LP21	.794 KVA
LARGEST BUS MISMATCH	BUS-LP21	.211 KVA
LARGEST BUS MISMATCH	BUS-LP21	.057 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS (SWING GENERATORS)

SOURCE	VOLTAGE	ANGLE	KW	KVAR	VD% (UTILITY IMPEDANCE)
UTIL-138kVSY	1.054	.00	17583.71	15006.68	Gen Z Ignored

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUCHANAN 138kV DESIGN VOLTS: 138000 BUS VOLTS: 145452 %VD: -5.40
===== PU BUS VOLTAGE: 1.054 ANGLE: .0 DEGREES
*** SWING GENERATOR: UTIL-138kVSY 17583.7 KW 15006.7 KVAR

LOAD TO: BUS-1079 FEEDER AMPS: 91.7 VOLTAGE DROP: 48. %VD: .04
PROJECTED POWER FLOW: 17583.7 KW 15006.7 KVAR 23116.8 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: 5.3 KW 5.6 KVAR 7.7 KVA

LOAD BUS: BUS-00001 *** ISOLATED BUS ***

LOAD BUS: BUS-00002 *** ISOLATED BUS ***

LOAD BUS: BUS-00003 *** ISOLATED BUS ***

LOAD BUS: BUS-0000BUCHAN *** ISOLATED BUS ***

LOAD BUS: BUS-0001 *** ISOLATED BUS ***

LOAD BUS: BUS-0002 *** ISOLATED BUS ***

LOAD BUS: BUS-0003 *** ISOLATED BUS ***

LOAD BUS: BUS-0004 *** ISOLATED BUS ***

LOAD BUS: BUS-0005 *** ISOLATED BUS ***

LOAD BUS: BUS-0006 *** ISOLATED BUS ***

LOAD BUS: BUS-00100 *** ISOLATED BUS ***

LOAD BUS: BUS-00101 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD BUS: BUS-00102 *** ISOLATED BUS ***

==== BUS: BUS-00104 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD TO: BUS-00107 FEEDER AMPS: 288.6 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 2837.4 KW 2209.8 KVAR 3596.4 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD TO: BUS-00109 FEEDER AMPS: 251.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2505.3 KW 1888.9 KVAR 3137.6 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-00114 FEEDER AMPS: 540.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 5342.7 KW 4098.7 KVAR 6733.8 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .5 KVAR .5 KVA

==== BUS: BUS-00105 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD TO: BUS-00110 FEEDER AMPS: 305.3 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 3008.6 KW 2329.6 KVAR 3805.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD TO: BUS-00112 FEEDER AMPS: 287.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2829.4 KW 2201.4 KVAR 3584.9 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-00115 FEEDER AMPS: 592.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 5838.0 KW 4531.0 KVAR 7390.0 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD BUS: BUS-00106 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00107 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00104 FEEDER AMPS: 288.6 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 2837.3 KW 2209.2 KVAR 3596.0 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD TO: BUS-1 FEEDER AMPS: 288.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2837.3 KW 2209.2 KVAR 3596.0 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD BUS: BUS-00108 *** ISOLATED BUS ***

==== BUS: BUS-00109 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00104 FEEDER AMPS: 251.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2505.3 KW 1888.9 KVAR 3137.6 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-2 FEEDER AMPS: 251.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2505.3 KW 1888.9 KVAR 3137.6 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-00110 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00105 FEEDER AMPS: 305.3 VOLTAGE DROP: 1. %VD: .01
PROJECTED POWER FLOW: 3008.5 KW 2329.0 KVAR 3804.6 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD TO: BUS-3 FEEDER AMPS: 305.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 3008.5 KW 2329.0 KVAR 3804.6 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD BUS: BUS-00111 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00112 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-00105 FEEDER AMPS: 287.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2829.3 KW 2201.4 KVAR 3584.9 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-4 FEEDER AMPS: 287.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2829.3 KW 2201.4 KVAR 3584.9 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD BUS: BUS-00113 *** ISOLATED BUS ***

==== BUS: BUS-00114 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.27
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD TO: BUS-00104 FEEDER AMPS: 540.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 5342.7 KW 4099.2 KVAR 6734.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .5 KVAR .5 KVA

LOAD FROM: BUS-5 FEEDER AMPS: 540.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5342.7 KW 4099.2 KVAR 6734.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-00115 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD TO: BUS-00105 FEEDER AMPS: 592.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 5838.0 KW 4531.5 KVAR 7390.4 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .1 KW .6 KVAR .6 KVA

LOAD FROM: BUS-6 FEEDER AMPS: 592.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5838.0 KW 4531.5 KVAR 7390.4 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00134RW1 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-00200 DESIGN VOLTS: 6900 BUS VOLTS: 7216 %VD: -4.58
===== PU BUS VOLTAGE: 1.046 ANGLE: -3.1 DEGREES

LOAD TO: BUS-00201 FEEDER AMPS: 1761.7 VOLTAGE DROP: 20. %VD: .29
PROJECTED POWER FLOW: 17507.7 KW 13352.1 KVAR 22018.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: 4.3 KW 95.7 KVAR 95.8 KVA

LOAD FROM: BUS-1079 TRANSF AMPS: 87.4 VOLTAGE DROP: 54. %VD: .79
PROJECTED POWER FLOW: 17507.7 KW 13352.1 KVAR 22018.1 KVA PF: .80 LAGGING
LOSSES THRU TRANSF: 70.7 KW 1648.9 KVAR 1650.5 KVA

==== BUS: BUS-00201 DESIGN VOLTS: 6900 BUS VOLTS: 7196 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-00200 FEEDER AMPS: 1761.7 VOLTAGE DROP: 20. %VD: .29
PROJECTED POWER FLOW: 17503.4 KW 13256.4 KVAR 21956.8 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: 4.3 KW 95.7 KVAR 95.8 KVA

LOAD TO: BUS-00202 FEEDER AMPS: 844.3 VOLTAGE DROP: 1. %VD: .02
PROJECTED POWER FLOW: 8417.5 KW 6314.7 KVAR 10522.8 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .3 KW 2.3 KVAR 2.3 KVA

LOAD TO: BUS-00203 FEEDER AMPS: 917.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9085.9 KW 6941.7 KVAR 11434.2 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-00202 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.27
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-00201 FEEDER AMPS: 844.3 VOLTAGE DROP: 1. %VD: .02
PROJECTED POWER FLOW: 8417.2 KW 6312.4 KVAR 10521.2 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .3 KW 2.3 KVAR 2.3 KVA

LOAD TO: BUS-5 FEEDER AMPS: 844.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8417.2 KW 6312.4 KVAR 10521.2 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

==== BUS: BUS-00203 DESIGN VOLTS: 6900 BUS VOLTS: 7196 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-00201 FEEDER AMPS: 917.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9085.9 KW 6941.6 KVAR 11434.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-6 FEEDER AMPS: 917.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9085.9 KW 6941.6 KVAR 11434.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

==== BUS: BUS-0798 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .40
===== PU BUS VOLTAGE: .996 ANGLE: -6.2 DEGREES

LOAD FROM: TRM-233MCPSP21 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CPSP212 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0799 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .40
===== PU BUS VOLTAGE: .996 ANGLE: -6.1 DEGREES

LOAD FROM: TRM-236BCPSP24 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CPSP24 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-0801 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.05
===== PU BUS VOLTAGE: .969 ANGLE: -5.9 DEGREES

LOAD FROM: TRM-242BRSATAL FEEDER AMPS: 27.9 VOLTAGE DROP: 10. %VD: 2.05
PROJECTED POWER FLOW: 20.3 KW 9.8 KVAR 22.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .5 KW .0 KVAR .5 KVA

LOAD TO: TRM-SATAUXL FEEDER AMPS: 27.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 20.3 KW 9.8 KVAR 22.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: BUS-0804 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .95
===== PU BUS VOLTAGE: .991 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-255ELHTR22 FEEDER AMPS: 31.5 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 23.4 KW 11.3 KVAR 26.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD TO: TRM-HTTR22 FEEDER AMPS: 31.5 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 23.4 KW 11.3 KVAR 26.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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 Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
 Computer Run: LF SI (Total Auto + Manual) Case 1
 Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-1 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
 ===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00107 FEEDER AMPS: 288.6 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 2837.3 KW 2209.2 KVAR 3595.9 KVA PF: .79 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-00134RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-132CP21 FEEDER AMPS: 202.2 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 2146.2 KW 1319.9 KVAR 2519.6 KVA PF: .85 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-133CWP21 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 682.3 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-1079 DESIGN VOLTS: 138000 BUS VOLTS: 145404 %VD: -5.36
 ===== PU BUS VOLTAGE: 1.054 ANGLE: .0 DEGREES

LOAD FROM: BUCHANAN 138KV FEEDER AMPS: 91.7 VOLTAGE DROP: 48. %VD: .04
 PROJECTED POWER FLOW: 17578.4 KW 15001.1 KVAR 23109.1 KVA PF: .76 LAGGING
 LOSSES THRU FEEDER: 5.3 KW 5.6 KVAR 7.7 KVA

LOAD TO: BUS-00200 TRANSF AMPS: 91.7 VOLTAGE DROP: 1090. %VD: .79
 PROJECTED POWER FLOW: 17578.4 KW 15001.1 KVAR 23109.1 KVA PF: .76 LAGGING
 LOSSES THRU TRANSF: 70.7 KW 1648.9 KVAR 1650.5 KVA

==== BUS: BUS-1130 DESIGN VOLTS: 120 BUS VOLTS: 113 %VD: 6.12\$
 ===== PU BUS VOLTAGE: .939 ANGLE: -8.2 DEGREES
 NET BRANCH DIVERSITY LOAD: 8.1 KW 3.9 KVAR

LOAD FROM: TRM-FCVENC TRANSF AMPS: 46.1 VOLTAGE DROP: 2. %VD: 1.53
 PROJECTED POWER FLOW: 8.1 KW 3.9 KVAR 9.0 KVA PF: .90 LAGGING
 LOSSES THRU TRANSF: .0 KW .3 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-120VDP DESIGN VOLTS: 120 BUS VOLTS: 115 %VD: 4.45
===== PU BUS VOLTAGE: .956 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-120VDP TRANSF AMPS: 4.0 VOLTAGE DROP: 4. %VD: 3.57\$
PROJECTED POWER FLOW: .7 KW .3 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-132CP21 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: 202.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.2 KW 1319.9 KVAR 2519.6 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CP21 FEEDER AMPS: 202.2 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 2146.2 KW 1319.9 KVAR 2519.6 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.5 KW 2.6 KVAR 3.6 KVA

==== BUS: BUS-133CWP21 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-1 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.3 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP21 FEEDER AMPS: 89.4 VOLTAGE DROP: 8. %VD: .12
PROJECTED POWER FLOW: 682.3 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.4 KVA

==== BUS: BUS-2 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00109 FEEDER AMPS: 251.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2505.3 KW 1888.9 KVAR 3137.6 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-223SST#2 FEEDER AMPS: 167.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1822.9 KW 1008.1 KVAR 2083.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-224CWP23 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-212IHFEED DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.19
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-TRS-PANEL FEEDER AMPS: 14.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-2131EHCP12 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.62
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-2131LSCPWR DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.62
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213SC28PWR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .50
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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 Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
 Computer Run: LF SI (Total Auto + Manual) Case 1
 Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-2131PSCHTR DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.62
 ===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213SC28HTR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .48
 PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-213HTP21A DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.62
 ===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: MCC 213 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 1. %VD: .27
 PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-21RW1 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
 ===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD TO: BUS-MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-RWSP11 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-SCWSH21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-SCWSH22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: LT-RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-223SST#2 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-2 FEEDER AMPS: 167.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1822.9 KW 1008.1 KVAR 2083.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#2 FEEDER AMPS: 167.1 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1822.9 KW 1008.1 KVAR 2083.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .5 KVAR .7 KVA

==== BUS: BUS-224CWP23 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-2 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP23 FEEDER AMPS: 89.4 VOLTAGE DROP: 9. %VD: .13
PROJECTED POWER FLOW: 682.4 KW 880.8 KVAR 1114.2 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.5 KVA

==== BUS: BUS-22RW3 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.65
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD TO: BUS-MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-RWSP12 FEEDER AMPS: 571.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-SCWSH23 FEEDER AMPS: 159.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: LT-RW3 FEEDER AMPS: 750.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 533.9 KW 353.9 KVAR 640.6 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-245DRIAD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.53
===== PU BUS VOLTAGE: .955 ANGLE: -6.2 DEGREES
NET BRANCH DIVERSITY LOAD: 2.0 KW 1.0 KVAR

LOAD FROM: TRM-IAD TRANSF AMPS: 6.3 VOLTAGE DROP: 7. %VD: 3.45\$
PROJECTED POWER FLOW: 2.0 KW 1.0 KVAR 2.2 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-255ERA DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.46
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-255ER FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 11.8 KW 11.6 KVAR 16.6 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF217 FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF218 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF219 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-255ERB DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.45
===== PU BUS VOLTAGE: .986 ANGLE: -6.0 DEGREES

LOAD TO: BUS-BAFWB33 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-BAFWB34 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-255ER FEEDER AMPS: 29.9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 24.5 KW .0 KVAR 24.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAFWB32 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.0 KW .0 KVAR 7.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26AAL3DP1 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.1 DEGREES

LOAD TO: BUS-26AAL3DP1B FEEDER AMPS: 27.9 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 26AA FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26AAL3DP1B DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.51
===== PU BUS VOLTAGE: .975 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-26AAL3DP1 FEEDER AMPS: 27.9 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EBB1-S TRANSF AMPS: 27.9 VOLTAGE DROP: 11. %VD: 2.32
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-26AAL4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.1 DEGREES

LOAD FROM: MCC 26AA FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26AAL4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26AAM3CIA DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.53
===== PU BUS VOLTAGE: .975 ANGLE: -7.0 DEGREES

LOAD FROM: MCC 26AA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .14
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .13
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26BBA2SREF DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.84
===== PU BUS VOLTAGE: .972 ANGLE: -7.4 DEGREES

LOAD FROM: MCC 26BB FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-26BBB3DP2 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.73
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD TO: BUS-26BBB3DP2B FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 26BB FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-26BBB3DP2B DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.78
===== PU BUS VOLTAGE: .972 ANGLE: -7.6 DEGREES

LOAD FROM: BUS-26BBB3DP2 FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: LT-XFMR-DP2 TRANSF AMPS: 9.9 VOLTAGE DROP: 4. %VD: .73
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-26BBB4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.73
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD FROM: MCC 26BB FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 2. %VD: .33
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-2A DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-2A21CMC28A FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A22APHBG FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A22BMC24A FEEDER AMPS: 557.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 384.4 KW 259.6 KVAR 463.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: TRM-2A22CCCP22 FEEDER AMPS: 314.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.2 KVAR 261.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-2A23CRMG21 FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LEADING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A24BSIP22 FEEDER AMPS: 423.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.9 KW 148.9 KVAR 352.0 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-2A24CMC210 FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.9 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A25ASWP25 FEEDER AMPS: 382.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 281.2 KW 148.4 KVAR 318.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-2A25BMC23 FEEDER AMPS: 75.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 60.8 KW 14.8 KVAR 62.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-2A25CLTRF FEEDER AMPS: 179.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 149.6 KW .3 KVAR 149.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-2A26CCRF23 FEEDER AMPS: 354.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 256.6 KW 145.7 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-2AMC21 FEEDER AMPS: 120.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 92.9 KW 37.1 KVAR 100.0 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#2 FEEDER AMPS: 2403.1 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1792.3 KW 886.1 KVAR 1999.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW 1.7 KVAR 1.7 KVA

==== BUS: BUS-3 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00110 FEEDER AMPS: 305.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 3008.5 KW 2328.9 KVAR 3804.6 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-31ARW3 FEEDER AMPS: 52.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 536.3 KW 368.4 KVAR 650.6 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-32CWP26 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-33SST#3 FEEDER AMPS: 167.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1789.6 KW 1079.5 KVAR 2089.9 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-31ARW3 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 52.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 536.3 KW 368.4 KVAR 650.6 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: HT-RW3 FEEDER AMPS: 52.2 VOLTAGE DROP: 7. %VD: .09
PROJECTED POWER FLOW: 536.3 KW 368.4 KVAR 650.6 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

==== BUS: BUS-32CWP26 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP26 FEEDER AMPS: 89.4 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.8 KVA

==== BUS: BUS-33SST#3 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.26
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-3 FEEDER AMPS: 167.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1789.6 KW 1079.5 KVAR 2089.9 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#3 FEEDER AMPS: 167.7 VOLTAGE DROP: 3. %VD: .04
PROJECTED POWER FLOW: 1789.6 KW 1079.5 KVAR 2089.9 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

==== BUS: BUS-3A DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: TRM-2ATIE3A&6A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LEADING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A1CMCC211 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-3A2AMCC26C FEEDER AMPS: 361.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 255.3 KW 158.3 KVAR 300.4 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A2BMCC25 FEEDER AMPS: 77.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 60.4 KW 23.2 KVAR 64.7 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A2CLTSW24 FEEDER AMPS: 222.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 164.0 KW 85.9 KVAR 185.1 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A3ACRF24 FEEDER AMPS: 355.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 256.6 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A3BMCC22 FEEDER AMPS: 39.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 29.6 KW 13.5 KVAR 32.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A4APHBG21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A5ASWP22 FEEDER AMPS: 382.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A5BCHP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A5CRHR21 FEEDER AMPS: 425.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 319.1 KW 152.6 KVAR 353.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-3A6CAFP21 FEEDER AMPS: 547.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 392.5 KW 228.9 KVAR 454.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-6A7BT2A&3A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#3 FEEDER AMPS: 2411.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1758.8 KW 956.5 KVAR 2002.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW 1.7 KVAR 1.7 KVA

==== BUS: BUS-4 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-00112 FEEDER AMPS: 287.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2829.3 KW 2201.3 KVAR 3584.9 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-410CP23 FEEDER AMPS: 202.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.6 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-411CWP24 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-410CP23 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-4 FEEDER AMPS: 202.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2146.6 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CP23 FEEDER AMPS: 202.2 VOLTAGE DROP: 12. %VD: .17
PROJECTED POWER FLOW: 2146.6 KW 1320.4 KVAR 2520.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.9 KW 3.0 KVAR 4.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-411CWP24 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-4 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP24 FEEDER AMPS: 89.4 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 682.7 KW 881.0 KVAR 1114.6 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.9 KVA

==== BUS: BUS-5 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.27
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD TO: BUS-00114 FEEDER AMPS: 540.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5342.7 KW 4099.2 KVAR 6734.1 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-00202 FEEDER AMPS: 844.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8417.2 KW 6312.3 KVAR 10521.2 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: BUS-518SST#5 FEEDER AMPS: 219.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2391.9 KW 1332.1 KVAR 2737.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-519CWP25 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.6 KW 880.9 KVAR 1114.5 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-518SST#5 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.27
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-5 FEEDER AMPS: 219.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2391.9 KW 1332.1 KVAR 2737.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#5 FEEDER AMPS: 219.7 VOLTAGE DROP: 4. %VD: .06
PROJECTED POWER FLOW: 2391.9 KW 1332.1 KVAR 2737.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.2 KVAR 1.6 KVA

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 Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
 Computer Run: LF SI (Total Auto + Manual) Case 1
 Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-519CWP25 DESIGN VOLTS: 6900 BUS VOLTS: 7194 %VD: -4.27
 ===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-5 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: 682.6 KW 880.9 KVAR 1114.5 KVA PF: .61 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP25 FEEDER AMPS: 89.4 VOLTAGE DROP: 10. %VD: .15
 PROJECTED POWER FLOW: 682.6 KW 880.9 KVAR 1114.5 KVA PF: .61 LAGGING
 LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.8 KVA

==== BUS: BUS-5A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
 ===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

LOAD FROM: TRM-3ATIE2A&6A FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LEADING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A15ASIP21 FEEDER AMPS: 428.2 VOLTAGE DROP: 0. %VD: .02
 PROJECTED POWER FLOW: 318.9 KW 148.7 KVAR 351.8 KVA PF: .91 LAGGING
 LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-5A15BCSP21 FEEDER AMPS: 479.3 VOLTAGE DROP: 0. %VD: .02
 PROJECTED POWER FLOW: 354.9 KW 170.8 KVAR 393.8 KVA PF: .90 LAGGING
 LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-5A15CCRF21 FEEDER AMPS: 353.0 VOLTAGE DROP: 0. %VD: .02
 PROJECTED POWER FLOW: 251.2 KW 144.9 KVAR 290.0 KVA PF: .87 LAGGING
 LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-5A16APHBG FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A16BMCC28 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A16CRP21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
 PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
 LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-5A17ACCP21 FEEDER AMPS: 317.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.2 KW 121.9 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-5A17BMC26A FEEDER AMPS: 121.2 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A17CLTSED FEEDER AMPS: 183.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 150.9 KW 5.4 KVAR 151.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A18ACRF22 FEEDER AMPS: 357.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 255.5 KW 144.8 KVAR 293.7 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-5A18BCHP21 FEEDER AMPS: 174.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 127.7 KW 65.2 KVAR 143.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A18CSAC FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-5A19AMC29A FEEDER AMPS: 367.1 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 278.6 KW 115.6 KVAR 301.6 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-5A19BSWP24 FEEDER AMPS: 395.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.6 KW 154.4 KVAR 324.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-5A19CSWP21 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-BKR-SST#5 FEEDER AMPS: 3158.3 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2339.3 KW 1122.1 KVAR 2594.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW 3.0 KVAR 3.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-6 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD TO: BUS-00115 FEEDER AMPS: 592.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5838.0 KW 4531.6 KVAR 7390.4 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: BUS-00203 FEEDER AMPS: 917.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9085.9 KW 6941.4 KVAR 11434.0 KVA PF: .79 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: BUS-616CWP22 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.3 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-617SST#6 FEEDER AMPS: 239.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2565.3 KW 1528.9 KVAR 2986.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-616CWP22 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-6 FEEDER AMPS: 89.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.3 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CWP22 FEEDER AMPS: 89.4 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 682.5 KW 880.9 KVAR 1114.3 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.6 KVA

==== BUS: BUS-617SST#6 DESIGN VOLTS: 6900 BUS VOLTS: 7195 %VD: -4.28
===== PU BUS VOLTAGE: 1.043 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-6 FEEDER AMPS: 239.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2565.3 KW 1528.9 KVAR 2986.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-SST#6 FEEDER AMPS: 239.6 VOLTAGE DROP: 4. %VD: .05
PROJECTED POWER FLOW: 2565.3 KW 1528.9 KVAR 2986.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.2 KVAR 1.6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-6A DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD TO: TRM-6A10ASIP23 FEEDER AMPS: 466.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 344.5 KW 160.9 KVAR 380.3 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-6A10BMC27A FEEDER AMPS: 285.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 225.4 KW 59.0 KVAR 233.0 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-6A10CCRF25 FEEDER AMPS: 363.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 257.9 KW 146.5 KVAR 296.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: TRM-6A11ARHR22 FEEDER AMPS: 433.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 319.3 KW 153.1 KVAR 354.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD FROM: TRM-6A11ARP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-6A11BCHP23 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A12ACSP22 FEEDER AMPS: 482.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 355.0 KW 170.9 KVAR 394.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: TRM-6A12CCCP23 FEEDER AMPS: 320.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.0 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: TRM-6A7CRMG22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A8BSWP26 FEEDER AMPS: 397.1 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.3 KW 153.5 KVAR 324.0 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-6A8CSWP23 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A9BMC26B FEEDER AMPS: 156.2 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-6A9CAFP23 FEEDER AMPS: 551.7 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 388.9 KW 226.7 KVAR 450.1 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD FROM: TRM-BKR-SST#6 FEEDER AMPS: 3444.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 2502.8 KW 1278.1 KVAR 2810.3 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW 3.6 KVAR 3.6 KVA

==== BUS: BUS-BAFWB33 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.45
===== PU BUS VOLTAGE: .986 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERB FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AFWB33 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-BAFWB34 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.45
===== PU BUS VOLTAGE: .986 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERB FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AFWB34 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 8.8 KW .0 KVAR 8.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-CCRVPD21 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

LOAD TO: TRM-26C1DBF21 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C1HBUVF FEEDER AMPS: 9.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C1M120DP FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-26C4FVDP21 FEEDER AMPS: 20.4 VOLTAGE DROP: 2. %VD: .41
PROJECTED POWER FLOW: 12.6 KW 11.2 KVAR 16.8 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-CO2U DESIGN VOLTS: 120 BUS VOLTS: 115 %VD: 4.26
===== PU BUS VOLTAGE: .957 ANGLE: -5.7 DEGREES
NET BRANCH DIVERSITY LOAD: 18.0 KW 8.7 KVAR

LOAD FROM: TRM-CO2U TRANSF AMPS: 100.5 VOLTAGE DROP: 4. %VD: 3.13\$
PROJECTED POWER FLOW: 18.0 KW 8.7 KVAR 20.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .2 KVAR .7 KVA

==== BUS: BUS-EDG23AL(A) DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
===== PU BUS VOLTAGE: .967 ANGLE: -7.4 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW .9 KVAR

LOAD FROM: TRM-EDG23AL TRANSF AMPS: 5.6 VOLTAGE DROP: 0. %VD: .20
PROJECTED POWER FLOW: 1.8 KW .9 KVAR 2.0 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-EDG23AL(B) DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.38
===== PU BUS VOLTAGE: .966 ANGLE: -7.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.8 KW 5.4 KVAR

LOAD FROM: TRM-EDG23AL FEEDER AMPS: 9.0 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.2 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-EPV21 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.83
===== PU BUS VOLTAGE: .962 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 3.6 KVAR

LOAD FROM: TRM-EPV21 TRANSF AMPS: 24.0 VOLTAGE DROP: 3. %VD: 1.30
PROJECTED POWER FLOW: 7.5 KW 3.6 KVAR 8.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-EPX3 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.30\$
===== PU BUS VOLTAGE: .947 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 15.0 KW 7.3 KVAR

LOAD FROM: TRM-EPX3 TRANSF AMPS: 48.8 VOLTAGE DROP: 5. %VD: 2.64
PROJECTED POWER FLOW: 15.0 KW 7.3 KVAR 16.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .4 KW .2 KVAR .5 KVA

==== BUS: BUS-HTTR22 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.02
===== PU BUS VOLTAGE: .960 ANGLE: -5.8 DEGREES
NET BRANCH DIVERSITY LOAD: 22.7 KW 11.0 KVAR

LOAD FROM: TRM-HTTR22 TRANSF AMPS: 72.8 VOLTAGE DROP: 5. %VD: 2.62
PROJECTED POWER FLOW: 22.7 KW 11.0 KVAR 25.2 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .3 KVAR .7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-HTTRC21 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.82
===== PU BUS VOLTAGE: .972 ANGLE: -6.7 DEGREES
NET BRANCH DIVERSITY LOAD: 7.9 KW .0 KVAR

LOAD FROM: TRM-HTTRC21 TRANSF AMPS: 22.5 VOLTAGE DROP: 2. %VD: 1.13
PROJECTED POWER FLOW: 7.9 KW .0 KVAR 7.9 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

==== BUS: BUS-HTXFMR24 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.38
===== PU BUS VOLTAGE: .956 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.2 KW .0 KVAR

LOAD FROM: TRM-HTRC24 TRANSF AMPS: 35.3 VOLTAGE DROP: 3. %VD: 1.62
PROJECTED POWER FLOW: 12.2 KW .0 KVAR 12.2 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .2 KW .1 KVAR .2 KVA

==== BUS: BUS-LP21 DESIGN VOLTS: 120 BUS VOLTS: 95 %VD: 21.16\$
===== PU BUS VOLTAGE: .788 ANGLE: -5.7 DEGREES
NET BRANCH DIVERSITY LOAD: 46.2 KW 22.4 KVAR

LOAD FROM: TRM-LP21 TRANSF AMPS: 313.2 VOLTAGE DROP: 23. %VD: 19.50\$
PROJECTED POWER FLOW: 46.2 KW 22.4 KVAR 51.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: 11.8 KW 4.8 KVAR 12.7 KVA

==== BUS: BUS-LP223 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.82\$
===== PU BUS VOLTAGE: .942 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 16.5 KW 8.0 KVAR

LOAD FROM: TRM-LP223 TRANSF AMPS: 54.0 VOLTAGE DROP: 5. %VD: 2.57
PROJECTED POWER FLOW: 16.5 KW 8.0 KVAR 18.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-MCC 212 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-21RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-MCC 213 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.65
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-R45DP DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.42\$
===== PU BUS VOLTAGE: .946 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 21.6 KW 10.5 KVAR

LOAD FROM: TRM-24A2A-CC2 TRANSF AMPS: 70.4 VOLTAGE DROP: 8. %VD: 3.80\$
PROJECTED POWER FLOW: 21.6 KW 10.5 KVAR 24.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

==== BUS: BUS-RCS DESIGN VOLTS: 120 BUS VOLTS: 117 %VD: 2.70
===== PU BUS VOLTAGE: .973 ANGLE: -6.2 DEGREES

LOAD TO: BUS-RP1-C2 FEEDER AMPS: 27.7 VOLTAGE DROP: 0. %VD: .19
PROJECTED POWER FLOW: 5.1 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-RCS TRANSF AMPS: 27.7 VOLTAGE DROP: 1. %VD: .86
PROJECTED POWER FLOW: 5.1 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-RP1-C2 DESIGN VOLTS: 120 BUS VOLTS: 117 %VD: 2.89
===== PU BUS VOLTAGE: .971 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 2.4 KVAR

LOAD FROM: BUS-RCS FEEDER AMPS: 27.7 VOLTAGE DROP: 0. %VD: .19
PROJECTED POWER FLOW: 5.0 KW 2.4 KVAR 5.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: BUS-RWSP11 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-RWSP12 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.65
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 571.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RWSP12 FEEDER AMPS: 571.1 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 401.8 KW 275.9 KVAR 487.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .7 KW 1.2 KVAR 1.4 KVA

==== BUS: BUS-SCWSH21 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-SCWSH22 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-SCWSH23 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.65
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD FROM: BUS-22RW3 FEEDER AMPS: 159.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SCWSH23 FEEDER AMPS: 159.7 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 118.6 KW 67.3 KVAR 136.4 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .2 KVAR .2 KVA

==== BUS: BUS-SHT21 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.52
===== PU BUS VOLTAGE: .955 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.5 KW 13.1 KVAR

LOAD FROM: TRM-SHT21 TRANSF AMPS: 63.6 VOLTAGE DROP: 6. %VD: 2.90
PROJECTED POWER FLOW: 17.5 KW 13.1 KVAR 21.9 KVA PF: .80 LAGGING
LOSSES THRU TRANSF: .7 KW .2 KVAR .7 KVA

==== BUS: BUS-SHT22 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.70
===== PU BUS VOLTAGE: .953 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 21.0 KW .0 KVAR

LOAD FROM: TRM-SHT22 TRANSF AMPS: 61.1 VOLTAGE DROP: 6. %VD: 3.06\$
PROJECTED POWER FLOW: 21.0 KW .0 KVAR 21.0 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .7 KW .3 KVAR .7 KVA

==== BUS: BUS-STRIPH24 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.76
===== PU BUS VOLTAGE: .952 ANGLE: -7.9 DEGREES
NET BRANCH DIVERSITY LOAD: 13.8 KW .0 KVAR

LOAD FROM: TRM-STRIPH24 TRANSF AMPS: 40.2 VOLTAGE DROP: 4. %VD: 1.84
PROJECTED POWER FLOW: 13.8 KW .0 KVAR 13.8 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .3 KW .1 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-STRIPHTR23 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.57
===== PU BUS VOLTAGE: .954 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 13.3 KW .0 KVAR

LOAD FROM: TRM-STRIPHTR23 TRANSF AMPS: 38.6 VOLTAGE DROP: 4. %VD: 1.77
PROJECTED POWER FLOW: 13.3 KW .0 KVAR 13.3 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .2 KW .1 KVAR .3 KVA

==== BUS: BUS-WCAS DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.70\$
===== PU BUS VOLTAGE: .943 ANGLE: -5.8 DEGREES
NET BRANCH DIVERSITY LOAD: 21.6 KW 10.5 KVAR

LOAD FROM: TRM-WCAS TRANSF AMPS: 70.6 VOLTAGE DROP: 8. %VD: 3.81\$
PROJECTED POWER FLOW: 21.6 KW 10.5 KVAR 24.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

==== BUS: HT-LTG-22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.48
===== PU BUS VOLTAGE: .985 ANGLE: -6.5 DEGREES

LOAD TO: LT-LTG-22 TRANSF AMPS: 222.9 VOLTAGE DROP: 7. %VD: 1.42
PROJECTED POWER FLOW: 162.7 KW 83.0 KVAR 182.6 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .7 KW 4.5 KVAR 4.6 KVA

LOAD FROM: TRM-3A2CLTSW24 FEEDER AMPS: 222.9 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 162.7 KW 83.0 KVAR 182.6 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 1.3 KW 3.0 KVAR 3.2 KVA

==== BUS: HT-RW1 DESIGN VOLTS: 6900 BUS VOLTS: 7193 %VD: -4.25
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-00134RW1 FEEDER AMPS: .9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: LT-RW1 TRANSF AMPS: .9 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: HT-RW3 DESIGN VOLTS: 6900 BUS VOLTS: 7188 %VD: -4.17
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-31ARW3 FEEDER AMPS: 52.2 VOLTAGE DROP: 7. %VD: .09
PROJECTED POWER FLOW: 535.8 KW 368.1 KVAR 650.1 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .5 KW .3 KVAR .6 KVA

LOAD TO: LT-RW3 TRANSF AMPS: 52.2 VOLTAGE DROP: 104. %VD: 1.51
PROJECTED POWER FLOW: 535.8 KW 368.1 KVAR 650.1 KVA PF: .82 LAGGING
LOSSES THRU TRANSF: 1.8 KW 14.2 KVAR 14.3 KVA

==== BUS: HT-SST#2 DESIGN VOLTS: 6900 BUS VOLTS: 7192 %VD: -4.23
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-223SST#2 FEEDER AMPS: 167.1 VOLTAGE DROP: 2. %VD: .03
PROJECTED POWER FLOW: 1822.4 KW 1007.5 KVAR 2082.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .5 KVAR .7 KVA

LOAD TO: LT-SST#2 TRANSF AMPS: 167.1 VOLTAGE DROP: 282. %VD: 4.09\$
PROJECTED POWER FLOW: 1822.4 KW 1007.5 KVAR 2082.4 KVA PF: .88 LAGGING
LOSSES THRU TRANSF: 29.7 KW 119.5 KVAR 123.1 KVA

==== BUS: HT-SST#3 DESIGN VOLTS: 6900 BUS VOLTS: 7192 %VD: -4.23
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-33SST#3 FEEDER AMPS: 167.7 VOLTAGE DROP: 3. %VD: .04
PROJECTED POWER FLOW: 1789.0 KW 1078.9 KVAR 2089.2 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

LOAD TO: LT-SST#3 TRANSF AMPS: 167.7 VOLTAGE DROP: 296. %VD: 4.29\$
PROJECTED POWER FLOW: 1789.0 KW 1078.9 KVAR 2089.2 KVA PF: .86 LAGGING
LOSSES THRU TRANSF: 29.9 KW 120.5 KVAR 124.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: HT-SST#5 DESIGN VOLTS: 6900 BUS VOLTS: 7190 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD FROM: BUS-518SST#5 FEEDER AMPS: 219.7 VOLTAGE DROP: 4. %VD: .06
PROJECTED POWER FLOW: 2390.8 KW 1330.9 KVAR 2736.3 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.2 KVAR 1.6 KVA

LOAD TO: LT-SST#5 TRANSF AMPS: 219.7 VOLTAGE DROP: 367. %VD: 5.32\$
PROJECTED POWER FLOW: 2390.8 KW 1330.9 KVAR 2736.3 KVA PF: .87 LAGGING
LOSSES THRU TRANSF: 50.8 KW 205.5 KVAR 211.7 KVA

==== BUS: HT-SST#6 DESIGN VOLTS: 6900 BUS VOLTS: 7192 %VD: -4.23
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-617SST#6 FEEDER AMPS: 239.6 VOLTAGE DROP: 4. %VD: .05
PROJECTED POWER FLOW: 2564.2 KW 1527.7 KVAR 2984.8 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.2 KVAR 1.6 KVA

LOAD TO: LT-SST#6 TRANSF AMPS: 239.6 VOLTAGE DROP: 414. %VD: 6.01\$
PROJECTED POWER FLOW: 2564.2 KW 1527.7 KVAR 2984.8 KVA PF: .86 LAGGING
LOSSES THRU TRANSF: 60.5 KW 245.7 KVAR 253.0 KVA

LOAD BUS: LT-AUTO-XFMR *** ISOLATED BUS ***

==== BUS: LT-LTG-22 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.90
===== PU BUS VOLTAGE: .971 ANGLE: -7.7 DEGREES
NET BRANCH DIVERSITY LOAD: 162.0 KW 78.5 KVAR

LOAD FROM: HT-LTG-22 TRANSF AMPS: 514.5 VOLTAGE DROP: 3. %VD: 1.42
PROJECTED POWER FLOW: 162.0 KW 78.5 KVAR 180.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .7 KW 4.5 KVAR 4.6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: LT-LTG23 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.22
===== PU BUS VOLTAGE: .978 ANGLE: -8.9 DEGREES
NET BRANCH DIVERSITY LOAD: 149.4 KW .0 KVAR

LOAD FROM: TRM-EDN2(N) TRANSF AMPS: 424.1 VOLTAGE DROP: 1. %VD: .33
PROJECTED POWER FLOW: 149.4 KW .0 KVAR 149.4 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .5 KW 3.1 KVAR 3.1 KVA

==== BUS: LT-RW1 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD TO: BUS-21RW1 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: HT-RW1 TRANSF AMPS: .9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

==== BUS: LT-RW3 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.66
===== PU BUS VOLTAGE: 1.027 ANGLE: -4.3 DEGREES

LOAD TO: BUS-22RW3 FEEDER AMPS: 750.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 534.0 KW 354.0 KVAR 640.6 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD FROM: HT-RW3 TRANSF AMPS: 51.4 VOLTAGE DROP: 7. %VD: 1.51
PROJECTED POWER FLOW: 534.0 KW 354.0 KVAR 640.6 KVA PF: .83 LAGGING
LOSSES THRU TRANSF: 1.8 KW 14.2 KVAR 14.3 KVA

==== BUS: LT-SST#2 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.13
===== PU BUS VOLTAGE: 1.001 ANGLE: -5.9 DEGREES

LOAD FROM: HT-SST#2 TRANSF AMPS: 160.6 VOLTAGE DROP: 20. %VD: 4.09\$
PROJECTED POWER FLOW: 1792.7 KW 888.0 KVAR 2000.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: 29.7 KW 119.5 KVAR 123.1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-BKR-SST#2 FEEDER AMPS:2403.1 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1792.7 KW 888.0 KVAR 2000.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .4 KW .2 KVAR .5 KVA

==== BUS: LT-SST#3 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .06
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: HT-SST#3 TRANSF AMPS: 160.8 VOLTAGE DROP: 21. %VD: 4.29\$
PROJECTED POWER FLOW: 1759.2 KW 958.4 KVAR 2003.3 KVA PF: .88 LAGGING
LOSSES THRU TRANSF: 29.9 KW 120.5 KVAR 124.2 KVA

LOAD TO: TRM-BKR-SST#3 FEEDER AMPS:2411.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 1759.2 KW 958.4 KVAR 2003.3 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .4 KW .2 KVAR .5 KVA

==== BUS: LT-SST#5 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.11
===== PU BUS VOLTAGE: .989 ANGLE: -6.8 DEGREES

LOAD FROM: HT-SST#5 TRANSF AMPS: 208.4 VOLTAGE DROP: 26. %VD: 5.32\$
PROJECTED POWER FLOW: 2340.0 KW 1125.4 KVAR 2596.6 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: 50.8 KW 205.5 KVAR 211.7 KVA

LOAD TO: TRM-BKR-SST#5 FEEDER AMPS:3158.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2340.0 KW 1125.4 KVAR 2596.6 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .7 KW .4 KVAR .8 KVA

==== BUS: LT-SST#6 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.78
===== PU BUS VOLTAGE: .982 ANGLE: -7.0 DEGREES

LOAD FROM: HT-SST#6 TRANSF AMPS: 225.8 VOLTAGE DROP: 29. %VD: 6.01\$
PROJECTED POWER FLOW: 2503.7 KW 1282.1 KVAR 2812.8 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: 60.5 KW 245.7 KVAR 253.0 KVA

LOAD TO: TRM-BKR-SST#6 FEEDER AMPS:3444.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2503.7 KW 1282.1 KVAR 2812.8 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .8 KW .5 KVAR .9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: LT-XFMR-DP2 DESIGN VOLTS: 120 BUS VOLTS: 116 %VD: 3.51
===== PU BUS VOLTAGE: .965 ANGLE: -7.5 DEGREES

LOAD FROM: BUS-26BBB3DP2 TRANSF AMPS: 39.9 VOLTAGE DROP: 1. %VD: .73
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD TO: TRM-26BBB3DP2 FEEDER AMPS: 39.9 VOLTAGE DROP: 0. %VD: .13
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD TO: TRM-211DLSWPH FEEDER AMPS: 2.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW .0 KVAR 2.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-211DRREC21 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.2 KW 7.8 KVAR 18.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-211FLP21 FEEDER AMPS: 78.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 58.3 KW 27.3 KVAR 64.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213BRSC27H FEEDER AMPS: 8.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6.6 KW .0 KVAR 6.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213HSWSP26 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-213MHTTR21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.0 KW .0 KVAR 8.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2AMC21 FEEDER AMPS: 120.2 VOLTAGE DROP: 6. %VD: 1.15
PROJECTED POWER FLOW: 92.1 KW 36.0 KVAR 98.9 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .8 KW 1.1 KVAR 1.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC 210 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .02
===== PU BUS VOLTAGE: 1.000 ANGLE: -6.0 DEGREES

LOAD TO: TRM-2101FLP225 FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.8 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A24CMC210 FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 16.8 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 212 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.19
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES

LOAD TO: BUS-212IHFEED FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: BUS-MCC 212 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 213 DESIGN VOLTS: 480 BUS VOLTS: 493 %VD: -2.62
===== PU BUS VOLTAGE: 1.026 ANGLE: -4.3 DEGREES

LOAD TO: BUS-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-2131LSCPWR FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-2131PSCHTR FEEDER AMPS: 3.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: BUS-MCC 213 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.5 KW 10.7 KVAR 17.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 22 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.0 DEGREES

LOAD TO: TRM-221MLCO2U FEEDER AMPS: 25.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.8 KW 9.0 KVAR 20.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-223DMGHD FEEDER AMPS: 4.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 3.5 KW .0 KVAR 3.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-224BFLBC FEEDER AMPS: 8.5 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 6.4 KW 3.1 KVAR 7.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD TO: TRM-224FDPSP21 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A3BMCC22 FEEDER AMPS: 39.2 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 29.6 KW 13.4 KVAR 32.5 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

==== BUS: MCC 23 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.3 DEGREES

LOAD TO: TRM-231MMBFPOH FEEDER AMPS: 30.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW .0 KVAR 25.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-232CVRC2 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-233MCPSP21 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-234FWCAS FEEDER AMPS: 30.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.9 KW 10.9 KVAR 25.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-234HRCPTH FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9.4 KW .0 KVAR 9.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-236BCPSP24 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-236MSWSP27 FEEDER AMPS: 1.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A25BMC23 FEEDER AMPS: 75.2 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 60.7 KW 14.5 KVAR 62.4 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .4 KVA

==== BUS: MCC 25 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .44
===== PU BUS VOLTAGE: .996 ANGLE: -6.1 DEGREES

LOAD TO: TRM-255ELHTR22 FEEDER AMPS: 31.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 23.6 KW 11.3 KVAR 26.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-255ER FEEDER AMPS: 46.5 VOLTAGE DROP: 5. %VD: .97
PROJECTED POWER FLOW: 36.7 KW 11.7 KVAR 38.5 KVA PF: .95 LAGGING
LOSSES THRU FEEDER: .4 KW .1 KVAR .4 KVA

LOAD FROM: TRM-3A2BMCC25 FEEDER AMPS: 77.9 VOLTAGE DROP: 2. %VD: .31
PROJECTED POWER FLOW: 60.3 KW 23.0 KVAR 64.5 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC 26AA DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.1 DEGREES

LOAD TO: BUS-26AAL3DP1 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.4 KW 9.8 KVAR 22.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26AAL4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .14
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC-26A FEEDER AMPS: 32.8 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 23.3 KW 12.8 KVAR 26.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 26BB DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.73
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD TO: BUS-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .31 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26BBB3DP2 FEEDER AMPS: 9.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.3 KW 3.5 KVAR 8.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC-26B FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 9.8 KW 8.5 KVAR 13.0 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC 27-1 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 64.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 52.6 KW 2.1 KVAR 52.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-272MRRGS21 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-273DRBA22H FEEDER AMPS: 12.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-274BRRSH24 FEEDER AMPS: 17.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 14.2 KW .1 KVAR 14.2 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-27NT9MPABH FEEDER AMPS: 32.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 26.1 KW .0 KVAR 26.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MCC 27-2 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 12.1 KVAR 24.1 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-275FPABS21 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-276KPABS22 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-277MRLP223 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 17.2 KW 8.2 KVAR 19.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD BUS: MCC 27-3 *** ISOLATED BUS ***

==== BUS: MCC 28 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC 28A DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC-211 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MCC-24 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD TO: TRM-242BRSATAL FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242FIPCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242HRVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242KRVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-242MRVF23 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-243BWEF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243DWEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243FIPCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.3 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243HRVF24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-243KRVF25 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244DVRINV FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244FIPCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244HWEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244KWEF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-244MWEF23 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-245DRIAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-245MCLGWP2 FEEDER AMPS: 120.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.6 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-246BRRCNTS FEEDER AMPS: 6.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-24A1AMCC24 FEEDER AMPS: 371.0 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 249.3 KW 176.5 KVAR 305.4 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

==== BUS: MCC-24A DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .92
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD TO: TRM-24A1AMCC24 FEEDER AMPS: 371.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2AR45DP FEEDER AMPS: 30.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2CED22A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2EBCH22 FEEDER AMPS: 61.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A3CCMP22 FEEDER AMPS: 84.0 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-24A4AIAC22 FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-2A22BMC24A FEEDER AMPS: 557.5 VOLTAGE DROP: 5. %VD: .96
PROJECTED POWER FLOW: 382.3 KW 254.6 KVAR 459.3 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 2.1 KW 4.8 KVAR 5.2 KVA

==== BUS: MCC-26A DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -7.1 DEGREES

LOAD TO: MCC 26AA FEEDER AMPS: 32.8 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 23.4 KW 12.8 KVAR 26.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1BEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1DEPV21 FEEDER AMPS: 10.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A1DRDP1 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: 15.7 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6HEPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6HRBAHT FEEDER AMPS: 14.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26A6KRCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-5A17BMC26A FEEDER AMPS: 121.2 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 85.2 KW 49.4 KVAR 98.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .7 KW 1.0 KVAR 1.2 KVA

==== BUS: MCC-26B DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.70
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD TO: MCC 26BB FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 9.8 KW 8.5 KVAR 13.0 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B1BEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5KRAC22 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5MRLEDV FEEDER AMPS: 7.6 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B5MRREDV FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B6BRREDA FEEDER AMPS: 11.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B7DHVAC FEEDER AMPS: 71.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26B7MBAP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-6A9BMC26B FEEDER AMPS: 156.2 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 95.4 KW 82.9 KVAR 126.4 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW 1.5 KVAR 1.5 KVA

==== BUS: MCC-26C DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD TO: TRM-26C1ASFP21 FEEDER AMPS: 108.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 76.3 KW 48.1 KVAR 90.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C2BPAB21 FEEDER AMPS: 137.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 94.6 KW 63.3 KVAR 113.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3ABT21H FEEDER AMPS: 13.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3FBC23 FEEDER AMPS: 33.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3HPWP21 FEEDER AMPS: 26.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C3NBAP21 FEEDER AMPS: 14.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C4FVDP21 FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-26C5AEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-26C5LGVP2 FEEDER AMPS: 7.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A2AMCC26C FEEDER AMPS: 361.7 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 254.8 KW 157.2 KVAR 299.4 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .5 KW 1.1 KVAR 1.2 KVA

==== BUS: MCC-27 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD TO: MCC 27-1 FEEDER AMPS: 64.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 52.6 KW 2.1 KVAR 52.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 27-2 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 12.1 KVAR 24.1 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-271BRRFCVE FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.4 KW 4.2 KVAR 9.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-271KRPAB23 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-271MLRBALE FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-271MRRHT24 FEEDER AMPS: 15.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.4 KW .1 KVAR 12.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-272DRPAB25 FEEDER AMPS: 7.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.5 KW 4.1 KVAR 6.1 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-272KRWHT22 FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1.2 KW 1.4 KVAR 1.9 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-274BLRSH23 FEEDER AMPS: 16.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.6 KW .1 KVAR 13.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-278BLAFWPH FEEDER AMPS: 57.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 46.5 KW .3 KVAR 46.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-27A1AMCC27 FEEDER AMPS: 204.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 163.6 KW 28.6 KVAR 166.1 KVA PF: .99 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

==== BUS: MCC-27A DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.32
===== PU BUS VOLTAGE: .977 ANGLE: -7.4 DEGREES

LOAD TO: TRM-27A1AMCC27 FEEDER AMPS: 204.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 163.6 KW 28.6 KVAR 166.1 KVA PF: .99 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-27A4EBC24 FEEDER AMPS: 64.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 47.0 KW 22.2 KVAR 52.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-27A5E118V FEEDER AMPS: 19.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 14.1 KW 6.6 KVAR 15.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-6A10BMC27A FEEDER AMPS: 285.6 VOLTAGE DROP: 2. %VD: .44
PROJECTED POWER FLOW: 224.8 KW 57.4 KVAR 232.0 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .7 KW 1.6 KVAR 1.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-29 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD TO: TRM-291ERSPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-292BLUATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294BLSHT22 FEEDER AMPS: 26.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294BRSH21 FEEDER AMPS: 27.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.2 KW 13.4 KVAR 22.6 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294HWEF216 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-294MDGBH FEEDER AMPS: 93.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-296BHRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-29A1AMC29 FEEDER AMPS: 210.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 166.6 KW 44.4 KVAR 172.4 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MCC-29A DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.44
===== PU BUS VOLTAGE: .986 ANGLE: -7.0 DEGREES

LOAD TO: TRM-29A1AMC29 FEEDER AMPS: 210.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 166.6 KW 44.5 KVAR 172.4 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3CIAC21 FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3EED21A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3GEF215 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3JBCH21 FEEDER AMPS: 61.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-29A3LIAC21 FEEDER AMPS: 83.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 56.9 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-5A19AMC29A FEEDER AMPS: 367.1 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 278.2 KW 114.6 KVAR 300.9 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .4 KW .9 KVAR 1.0 KVA

==== BUS: MT-AFP21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.65
===== PU BUS VOLTAGE: .983 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 388.4 KW 222.2 KVAR

LOAD FROM: TRM-3A6CAFP21 FEEDER AMPS: 547.2 VOLTAGE DROP: 7. %VD: 1.53
PROJECTED POWER FLOW: 388.4 KW 222.2 KVAR 447.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.7 KVAR 7.9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-AFP23 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.24
===== PU BUS VOLTAGE: .968 ANGLE: -7.6 DEGREES
NET BRANCH DIVERSITY LOAD: 385.2 KW 220.4 KVAR

LOAD FROM: TRM-6A9CAFP23 FEEDER AMPS: 551.7 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 385.2 KW 220.4 KVAR 443.8 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 3.7 KW 6.0 KVAR 7.0 KVA

==== BUS: MT-CCP21 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.07
===== PU BUS VOLTAGE: .969 ANGLE: -7.7 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-5A17ACCP21 FEEDER AMPS: 317.0 VOLTAGE DROP: 9. %VD: 1.87
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 2.5 KW 5.8 KVAR 6.3 KVA

==== BUS: MT-CCP22 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-2A22CCCP22 FEEDER AMPS: 314.5 VOLTAGE DROP: 11. %VD: 2.37
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 3.3 KW 7.1 KVAR 7.8 KVA

==== BUS: MT-CCP23 DESIGN VOLTS: 480 BUS VOLTS: 460 %VD: 4.18
===== PU BUS VOLTAGE: .958 ANGLE: -8.1 DEGREES
NET BRANCH DIVERSITY LOAD: 227.6 KW 116.0 KVAR

LOAD FROM: TRM-6A12CCCP23 FEEDER AMPS: 320.6 VOLTAGE DROP: 11. %VD: 2.30
PROJECTED POWER FLOW: 227.6 KW 116.0 KVAR 255.5 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 3.3 KW 6.9 KVAR 7.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CHP21 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.40
===== PU BUS VOLTAGE: .976 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 126.6 KW 63.5 KVAR

LOAD FROM: TRM-5A18BCHP21 FEEDER AMPS: 174.5 VOLTAGE DROP: 6. %VD: 1.20
PROJECTED POWER FLOW: 126.6 KW 63.5 KVAR 141.6 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.8 KVAR 2.0 KVA

==== BUS: MT-CHP22 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-CHP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-CP21 DESIGN VOLTS: 6900 BUS VOLTS: 7183 %VD: -4.10
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.4 DEGREES
NET BRANCH DIVERSITY LOAD: 2143.8 KW 1317.3 KVAR

LOAD FROM: BUS-132CP21 FEEDER AMPS: 202.2 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 2143.8 KW 1317.3 KVAR 2516.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.5 KW 2.6 KVAR 3.6 KVA

==== BUS: MT-CP23 DESIGN VOLTS: 6900 BUS VOLTS: 7183 %VD: -4.11
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.4 DEGREES
NET BRANCH DIVERSITY LOAD: 2143.8 KW 1317.3 KVAR

LOAD FROM: BUS-410CP23 FEEDER AMPS: 202.2 VOLTAGE DROP: 12. %VD: .17
PROJECTED POWER FLOW: 2143.8 KW 1317.3 KVAR 2516.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 2.9 KW 3.0 KVAR 4.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CRF21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.24
===== PU BUS VOLTAGE: .978 ANGLE: -7.7 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-5A15CCRF21 FEEDER AMPS: 353.0 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .4 KW 5.3 KVAR 5.4 KVA

==== BUS: MT-CRF22 DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.46
===== PU BUS VOLTAGE: .965 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-5A18ACRF22 FEEDER AMPS: 357.5 VOLTAGE DROP: 11. %VD: 2.25
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.7 KW 5.3 KVAR 7.1 KVA

==== BUS: MT-CRF23 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.67
===== PU BUS VOLTAGE: .973 ANGLE: -6.5 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-2A26CCRF23 FEEDER AMPS: 354.6 VOLTAGE DROP: 13. %VD: 2.73
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.8 KW 6.1 KVAR 8.4 KVA

==== BUS: MT-CRF24 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.85
===== PU BUS VOLTAGE: .971 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-3A3ACRF24 FEEDER AMPS: 355.2 VOLTAGE DROP: 13. %VD: 2.73
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.8 KW 6.1 KVAR 8.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CRF25 DESIGN VOLTS: 480 BUS VOLTS: 456 %VD: 5.06\$
===== PU BUS VOLTAGE: .949 ANGLE: -7.6 DEGREES
NET BRANCH DIVERSITY LOAD: 250.8 KW 139.4 KVAR

LOAD FROM: TRM-6A10CCRF25 FEEDER AMPS: 363.5 VOLTAGE DROP: 15. %VD: 3.17\$
PROJECTED POWER FLOW: 250.8 KW 139.4 KVAR 286.9 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 7.1 KW 6.9 KVAR 9.9 KVA

==== BUS: MT-CSP21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.83
===== PU BUS VOLTAGE: .972 ANGLE: -7.5 DEGREES
NET BRANCH DIVERSITY LOAD: 350.9 KW 163.9 KVAR

LOAD FROM: TRM-5A15BCSP21 FEEDER AMPS: 479.3 VOLTAGE DROP: 8. %VD: 1.62
PROJECTED POWER FLOW: 350.9 KW 163.9 KVAR 387.3 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

==== BUS: MT-CSP22 DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.54
===== PU BUS VOLTAGE: .965 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 350.9 KW 163.9 KVAR

LOAD FROM: TRM-6A12ACSP22 FEEDER AMPS: 482.9 VOLTAGE DROP: 8. %VD: 1.65
PROJECTED POWER FLOW: 350.9 KW 163.9 KVAR 387.3 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.8 KVAR 7.9 KVA

==== BUS: MT-CWP21 DESIGN VOLTS: 6900 BUS VOLTS: 7185 %VD: -4.13
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-133CWP21 FEEDER AMPS: 89.4 VOLTAGE DROP: 8. %VD: .12
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CWP22 DESIGN VOLTS: 6900 BUS VOLTS: 7186 %VD: -4.14
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-616CWP22 FEEDER AMPS: 89.4 VOLTAGE DROP: 10. %VD: .14
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.6 KVA

==== BUS: MT-CWP23 DESIGN VOLTS: 6900 BUS VOLTS: 7185 %VD: -4.13
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-224CWP23 FEEDER AMPS: 89.4 VOLTAGE DROP: 9. %VD: .13
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.3 KW .7 KVAR 1.5 KVA

==== BUS: MT-CWP24 DESIGN VOLTS: 6900 BUS VOLTS: 7184 %VD: -4.12
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-411CWP24 FEEDER AMPS: 89.4 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.9 KVA

==== BUS: MT-CWP25 DESIGN VOLTS: 6900 BUS VOLTS: 7184 %VD: -4.12
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-519CWP25 FEEDER AMPS: 89.4 VOLTAGE DROP: 10. %VD: .15
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.5 KW .8 KVAR 1.8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-CWP26 DESIGN VOLTS: 6900 BUS VOLTS: 7183 %VD: -4.11
===== PU BUS VOLTAGE: 1.041 ANGLE: -3.3 DEGREES
NET BRANCH DIVERSITY LOAD: 681.1 KW 880.1 KVAR

LOAD FROM: BUS-32CWP26 FEEDER AMPS: 89.4 VOLTAGE DROP: 11. %VD: .16
PROJECTED POWER FLOW: 681.1 KW 880.1 KVAR 1112.8 KVA PF: .61 LAGGING
LOSSES THRU FEEDER: 1.6 KW .9 KVAR 1.8 KVA

==== BUS: MT-RHR21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.49
===== PU BUS VOLTAGE: .985 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 147.7 KVAR

LOAD FROM: TRM-3A5CRHR21 FEEDER AMPS: 425.9 VOLTAGE DROP: 7. %VD: 1.36
PROJECTED POWER FLOW: 316.1 KW 147.7 KVAR 348.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.0 KW 5.0 KVAR 5.8 KVA

==== BUS: MT-RHR22 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.30
===== PU BUS VOLTAGE: .967 ANGLE: -7.7 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 147.7 KVAR

LOAD FROM: TRM-6A11ARHR22 FEEDER AMPS: 433.9 VOLTAGE DROP: 7. %VD: 1.42
PROJECTED POWER FLOW: 316.1 KW 147.7 KVAR 348.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.2 KW 5.3 KVAR 6.1 KVA

==== BUS: MT-RMG21 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-RMG22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-RP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-RP22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SAC DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SIP21 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.44
===== PU BUS VOLTAGE: .976 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 144.0 KVAR

LOAD FROM: TRM-5A15ASIP21 FEEDER AMPS: 428.2 VOLTAGE DROP: 6. %VD: 1.23
PROJECTED POWER FLOW: 316.1 KW 144.0 KVAR 347.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.5 KVAR 5.3 KVA

==== BUS: MT-SIP22 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.24
===== PU BUS VOLTAGE: .988 ANGLE: -6.5 DEGREES
NET BRANCH DIVERSITY LOAD: 316.1 KW 144.0 KVAR

LOAD FROM: TRM-2A24BSIP22 FEEDER AMPS: 423.0 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 316.1 KW 144.0 KVAR 347.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.7 KVAR 5.5 KVA

LOAD FROM: TRM-3A4CSIP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-SIP23 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.19
===== PU BUS VOLTAGE: .968 ANGLE: -7.6 DEGREES
NET BRANCH DIVERSITY LOAD: 341.4 KW 155.5 KVAR

LOAD FROM: TRM-6A10ASIP23 FEEDER AMPS: 466.0 VOLTAGE DROP: 6. %VD: 1.30
PROJECTED POWER FLOW: 341.4 KW 155.5 KVAR 375.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.1 KW 5.2 KVAR 6.1 KVA

==== BUS: MT-SWP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SWP22 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .35
===== PU BUS VOLTAGE: .997 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-2A24ASWP22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-3A5ASWP22 FEEDER AMPS: 382.9 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

==== BUS: MT-SWP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: MT-SWP24 DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.45
===== PU BUS VOLTAGE: .965 ANGLE: -7.5 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-5A19BSWP24 FEEDER AMPS: 395.2 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 4.8 KW 6.6 KVAR 8.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: MT-SWP25 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .17
===== PU BUS VOLTAGE: .998 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-2A25ASWP25 FEEDER AMPS: 382.2 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

LOAD FROM: TRM-3A3CSWP25 FEEDER AMPS: .0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: MT-SWP26 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 3.92
===== PU BUS VOLTAGE: .961 ANGLE: -7.6 DEGREES
NET BRANCH DIVERSITY LOAD: 280.8 KW 147.7 KVAR

LOAD FROM: TRM-6A8BSWP26 FEEDER AMPS: 397.1 VOLTAGE DROP: 10. %VD: 2.03
PROJECTED POWER FLOW: 280.8 KW 147.7 KVAR 317.2 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 4.6 KW 5.6 KVAR 7.3 KVA

LOAD BUS: MT-TAO *** ISOLATED BUS ***

==== BUS: PR HTR DP-21 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: PR HTR DP-22 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: PR HTR DP-23 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: PR HTR DP-24 *** ISOLATED BUS ***

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD BUS: SPLICE BOX *** ISOLATED BUS ***

==== BUS: TRM-120VDP DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

LOAD TO: BUS-120VDP TRANSF AMPS: 1.0 VOLTAGE DROP: 17. %VD: 3.57\$
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

LOAD FROM: TRM-26C1M120DP FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-2101FLP225 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .02
===== PU BUS VOLTAGE: 1.000 ANGLE: -6.0 DEGREES

LOAD FROM: MCC 210 FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.8 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-LP225 TRANSF AMPS: 22.4 VOLTAGE DROP: 18. %VD: 3.73\$
PROJECTED POWER FLOW: 16.8 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .3 KVAR .7 KVA

==== BUS: TRM-211DLSWPH DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 2.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 2.4 KW .0 KVAR 2.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SWPHTRS FEEDER AMPS: 2.9 VOLTAGE DROP: 1. %VD: .30
PROJECTED POWER FLOW: 2.4 KW .0 KVAR 2.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-211DRREC21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.2 KW 7.8 KVAR 18.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CPREC21 FEEDER AMPS: 21.9 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 16.2 KW 7.8 KVAR 18.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-211FLP21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 78.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 58.3 KW 27.3 KVAR 64.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-LP21 FEEDER AMPS: 78.3 VOLTAGE DROP: 3. %VD: .58
PROJECTED POWER FLOW: 58.3 KW 27.3 KVAR 64.4 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .4 KW .1 KVAR .4 KVA

==== BUS: TRM-2131EHCP12 DESIGN VOLTS: 480 BUS VOLTS: 492 %VD: -2.51
===== PU BUS VOLTAGE: 1.025 ANGLE: -4.2 DEGREES
NET BRANCH DIVERSITY LOAD: .7 KW 1.1 KVAR

LOAD FROM: BUS-2131EHCP12 FEEDER AMPS: 1.5 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .7 KW 1.1 KVAR 1.3 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213BRSC27H DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 8.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 6.6 KW .0 KVAR 6.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-SC27HT FEEDER AMPS: 8.0 VOLTAGE DROP: 3. %VD: .65
PROJECTED POWER FLOW: 6.6 KW .0 KVAR 6.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213HSWSP26 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.12
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SWPSP26 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213HTP21A DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.34
===== PU BUS VOLTAGE: 1.023 ANGLE: -4.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: BUS-213HTP21A FEEDER AMPS: 11.7 VOLTAGE DROP: 1. %VD: .27
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213MHTTR21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC 21 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.0 KW .0 KVAR 8.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-HTTRC21 FEEDER AMPS: 9.7 VOLTAGE DROP: .3. %VD: .61
PROJECTED POWER FLOW: 8.0 KW .0 KVAR 8.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-213SC28HTR DESIGN VOLTS: 480 BUS VOLTS: 490 %VD: -2.13
===== PU BUS VOLTAGE: 1.021 ANGLE: -4.1 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: BUS-2131PSCHTR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .48
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-213SC28PWR DESIGN VOLTS: 480 BUS VOLTS: 490 %VD: -2.12
===== PU BUS VOLTAGE: 1.021 ANGLE: -4.1 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: BUS-2131LSCPWR FEEDER AMPS: 3.5 VOLTAGE DROP: 2. %VD: .50
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-221MLCO2U DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.0 DEGREES

LOAD FROM: MCC 22 FEEDER AMPS: 25.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.8 KW 9.0 KVAR 20.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CO2U FEEDER AMPS: 25.1 VOLTAGE DROP: 4. %VD: .86
PROJECTED POWER FLOW: 18.8 KW 9.0 KVAR 20.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-223DMGHD DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.0 DEGREES

LOAD FROM: MCC 22 FEEDER AMPS: 4.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 3.5 KW .0 KVAR 3.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-MGHD FEEDER AMPS: 4.2 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 3.5 KW .0 KVAR 3.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-224BFLBC DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -5.8 DEGREES

LOAD FROM: MCC 22 FEEDER AMPS: 8.5 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 6.3 KW 3.1 KVAR 7.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD TO: TRM-FLBC FEEDER AMPS: 8.5 VOLTAGE DROP: 1. %VD: .28
PROJECTED POWER FLOW: 6.3 KW 3.1 KVAR 7.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-224FDPSP21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .37
===== PU BUS VOLTAGE: .996 ANGLE: -5.9 DEGREES

LOAD FROM: MCC 22 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DPSP21 FEEDER AMPS: 2.0 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-231MMBFPOH DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.3 DEGREES

LOAD FROM: MCC 23 FEEDER AMPS: 30.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW .0 KVAR 25.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-MBFPOH FEEDER AMPS: 30.2 VOLTAGE DROP: 2. %VD: .32
PROJECTED POWER FLOW: 25.1 KW .0 KVAR 25.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-232CVRC2 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.3 DEGREES

LOAD FROM: MCC 23 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-VRC2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-233MCPSP21 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .30
===== PU BUS VOLTAGE: .997 ANGLE: -6.2 DEGREES

LOAD TO: BUS-0798 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 23 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-234FWCAS DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.3 DEGREES

LOAD FROM: MCC 23 FEEDER AMPS: 30.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.9 KW 10.9 KVAR 25.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WCAS FEEDER AMPS: 30.6 VOLTAGE DROP: 8. %VD: 1.62
PROJECTED POWER FLOW: 22.9 KW 10.9 KVAR 25.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-234HRCPTH DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .27
===== PU BUS VOLTAGE: .997 ANGLE: -6.3 DEGREES

LOAD FROM: MCC 23 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 9.4 KW .0 KVAR 9.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RCPHT FEEDER AMPS: 11.2 VOLTAGE DROP: 2. %VD: .49
PROJECTED POWER FLOW: 9.4 KW .0 KVAR 9.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-236BCPSP24 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .35
===== PU BUS VOLTAGE: .996 ANGLE: -6.2 DEGREES

LOAD TO: BUS-0799 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 23 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-236MSWSP27 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .45
===== PU BUS VOLTAGE: .995 ANGLE: -6.1 DEGREES

LOAD FROM: MCC 23 FEEDER AMPS: 1.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SWVPSP27 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-242BRSATL DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD TO: BUS-0801 FEEDER AMPS: 27.9 VOLTAGE DROP: 10. %VD: 2.05
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .5 KW .0 KVAR .5 KVA

LOAD FROM: MCC-24 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 20.8 KW 9.8 KVAR 23.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-242FIPCF22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-242HRVF21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.28
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-242KRVF22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.15
PROJECTED POWER FLOW: 13.2 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-242MRVF23 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF23 FEEDER AMPS: 20.5 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-243BWEF24 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 2. %VD: .47
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-243DWEF25 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .61
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-243FIPCF24 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .93
PROJECTED POWER FLOW: 8.8 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-243HRVF24 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.04
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF24 FEEDER AMPS: 20.5 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-243KRVF25 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.03
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 20.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RVF25 FEEDER AMPS: 20.5 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 13.1 KW 10.6 KVAR 16.9 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-244DVRINV DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 1.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-VREGINV FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 1.4 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-244FIPCF26 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IPHCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .87
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-244HWEF21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .67
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-244KWEF22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .52
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-244MWEF23 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.06
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF23 FEEDER AMPS: 13.6 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 8.7 KW 7.1 KVAR 11.2 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-245DRIAD DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 2.7 VOLTAGE DROP: .0 %VD: .00
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-245MCLGWP2 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.03
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 120.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.5 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CLGWP22 FEEDER AMPS: 120.9 VOLTAGE DROP: 4. %VD: .74
PROJECTED POWER FLOW: 84.2 KW 53.1 KVAR 99.5 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .6 KW .5 KVAR .7 KVA

==== BUS: TRM-246BRRCNTS DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.00
===== PU BUS VOLTAGE: .990 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24 FEEDER AMPS: 6.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-RCS FEEDER AMPS: 6.9 VOLTAGE DROP: 4. %VD: .83
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A1AMCC24 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .92
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD TO: MCC-24 FEEDER AMPS: 371.0 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

LOAD FROM: MCC-24A FEEDER AMPS: 371.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 249.4 KW 176.8 KVAR 305.7 KVA PF: .82 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-24A2A-CC2 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.62
===== PU BUS VOLTAGE: .984 ANGLE: -6.2 DEGREES

LOAD TO: BUS-R45DP TRANSF AMPS: 30.5 VOLTAGE DROP: 18. %VD: 3.80\$
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

LOAD FROM: TRM-24A2AR45DP FEEDER AMPS: 30.5 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-24A2AR45DP DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .92
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 30.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-24A2A-CC2 FEEDER AMPS: 30.5 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 22.7 KW 10.8 KVAR 25.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A2CED22A DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .92
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG22AL FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.6 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-24A2EBCH22 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .92
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 61.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH22 FEEDER AMPS: 61.7 VOLTAGE DROP: 8. %VD: 1.63
PROJECTED POWER FLOW: 45.8 KW 22.0 KVAR 50.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .9 KW .2 KVAR .9 KVA

==== BUS: TRM-24A3CCMP22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .94
===== PU BUS VOLTAGE: .991 ANGLE: -6.4 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 84.0 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAC22 FEEDER AMPS: 84.0 VOLTAGE DROP: 8. %VD: 1.59
PROJECTED POWER FLOW: 57.4 KW 38.6 KVAR 69.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.1 KW .3 KVAR 1.2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-24A4AIAC22 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .98
===== PU BUS VOLTAGE: .990 ANGLE: -6.3 DEGREES

LOAD FROM: MCC-24A FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IACCWP22 FEEDER AMPS: 2.3 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-255ELHTR22 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .44
===== PU BUS VOLTAGE: .996 ANGLE: -6.1 DEGREES

LOAD TO: BUS-0804 FEEDER AMPS: 31.5 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 23.6 KW 11.3 KVAR 26.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD FROM: MCC 25 FEEDER AMPS: 31.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 23.6 KW 11.3 KVAR 26.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-255ER DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.41
===== PU BUS VOLTAGE: .986 ANGLE: -6.0 DEGREES

LOAD TO: BUS-255ERA FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 11.8 KW 11.6 KVAR 16.6 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-255ERB FEEDER AMPS: 29.9 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 24.5 KW .0 KVAR 24.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD FROM: MCC 25 FEEDER AMPS: 46.5 VOLTAGE DROP: 5. %VD: .97
PROJECTED POWER FLOW: 36.3 KW 11.6 KVAR 38.1 KVA PF: .95 LAGGING
LOSSES THRU FEEDER: .4 KW .1 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26A1BEF21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.36
===== PU BUS VOLTAGE: .976 ANGLE: -7.1 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 11.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ETEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 3. %VD: .62
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26A1DEPV21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -7.1 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 10.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EPV21 FEEDER AMPS: 10.4 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26A1DRDP1 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.41
===== PU BUS VOLTAGE: .976 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: 15.6 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DISTPNL1 FEEDER AMPS: 27.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 15.6 KW 15.7 KVAR 22.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26A6HEPX3 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -7.1 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 21.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 2. %VD: .36
PROJECTED POWER FLOW: 15.5 KW 7.4 KVAR 17.2 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26A6HRBAHT DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.31
===== PU BUS VOLTAGE: .977 ANGLE: -7.1 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 14.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAHT FEEDER AMPS: 14.5 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26A6KRCP21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.37
===== PU BUS VOLTAGE: .976 ANGLE: -7.1 DEGREES

LOAD FROM: MCC-26A FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ACCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.12
PROJECTED POWER FLOW: 3.8 KW 3.7 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26AAL4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.69
===== PU BUS VOLTAGE: .973 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 1.2 KW .9 KVAR

LOAD FROM: BUS-26AAL4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26B1BEF22 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.75
===== PU BUS VOLTAGE: .973 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 11.9 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ETEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 7.5 KW 6.1 KVAR 9.6 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26B5KRAC22 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.71
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-ACCP22 FEEDER AMPS: 6.5 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 3.8 KW 3.6 KVAR 5.3 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26B5MRLEDV DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.73
===== PU BUS VOLTAGE: .973 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 7.6 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: TRM-EDGVDP1 FEEDER AMPS: 7.6 VOLTAGE DROP: 11. %VD: 2.22
PROJECTED POWER FLOW: 4.5 KW 4.2 KVAR 6.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-26B5MRREDV DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.75
===== PU BUS VOLTAGE: .973 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDVDP1 FEEDER AMPS: 13.5 VOLTAGE DROP: 19. %VD: 3.92\$
PROJECTED POWER FLOW: 8.1 KW 7.4 KVAR 11.0 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-26B6BRREDA DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.78
===== PU BUS VOLTAGE: .972 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 11.3 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG23AL FEEDER AMPS: 11.3 VOLTAGE DROP: 1. %VD: .29
PROJECTED POWER FLOW: 6.7 KW 6.3 KVAR 9.2 KVA PF: .73 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26B7DHVAC DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.70
===== PU BUS VOLTAGE: .973 ANGLE: -7.6 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 71.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-CRHHVACDP FEEDER AMPS: 71.1 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 43.6 KW 37.5 KVAR 57.5 KVA PF: .76 LAGGING
LOSSES THRU FEEDER: 1.8 KW .7 KVAR 2.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26B7MBAP22 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.73
===== PU BUS VOLTAGE: .973 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-26B FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAPP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 5. %VD: 1.13
PROJECTED POWER FLOW: 11.5 KW 9.2 KVAR 14.7 KVA PF: .78 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-26BBA2SREF DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.04
===== PU BUS VOLTAGE: .970 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.3 KW 4.1 KVAR

LOAD FROM: BUS-26BBA2SREF FEEDER AMPS: 5.3 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.3 KW 4.1 KVAR 4.3 KVA PF: .30 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26BBB3DP2 DESIGN VOLTS: 120 BUS VOLTS: 116 %VD: 3.64
===== PU BUS VOLTAGE: .964 ANGLE: -7.5 DEGREES
NET BRANCH DIVERSITY LOAD: 7.2 KW 3.5 KVAR

LOAD FROM: LT-XFMR-DP2 FEEDER AMPS: 39.9 VOLTAGE DROP: 0. %VD: .13
PROJECTED POWER FLOW: 7.2 KW 3.5 KVAR 8.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26BBB4H2O2 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.07
===== PU BUS VOLTAGE: .969 ANGLE: -7.4 DEGREES
NET BRANCH DIVERSITY LOAD: 1.2 KW .9 KVAR

LOAD FROM: BUS-26BBB4H2O2 FEEDER AMPS: 1.8 VOLTAGE DROP: 2. %VD: .33
PROJECTED POWER FLOW: 1.2 KW .9 KVAR 1.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C1ASFP21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .48
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 108.9 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 76.3 KW 48.1 KVAR 90.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SFP21 FEEDER AMPS: 108.9 VOLTAGE DROP: 7. %VD: 1.42
PROJECTED POWER FLOW: 76.3 KW 48.1 KVAR 90.2 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 1.0 KW .8 KVAR 1.3 KVA

==== BUS: TRM-26C1DBF21 DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BF21 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C1HBUVF DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: 9.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BUVF FEEDER AMPS: 9.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C1M120DP DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .88
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-CCRVDP21 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-120VDP FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .7 KW .4 KVAR .8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C2BPAB21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .48
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 137.4 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 94.5 KW 63.3 KVAR 113.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABEF21 FEEDER AMPS: 137.4 VOLTAGE DROP: 8. %VD: 1.68
PROJECTED POWER FLOW: 94.5 KW 63.3 KVAR 113.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.5 KW 1.2 KVAR 1.9 KVA

==== BUS: TRM-26C3ABT21H DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 13.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATK21HTR FEEDER AMPS: 13.0 VOLTAGE DROP: 13. %VD: 2.71
PROJECTED POWER FLOW: 10.8 KW .0 KVAR 10.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C3FBC23 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 33.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH23 FEEDER AMPS: 33.6 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 25.1 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-26C3HPWP21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 26.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PWMUP21 FEEDER AMPS: 26.6 VOLTAGE DROP: 12. %VD: 2.51
PROJECTED POWER FLOW: 17.9 KW 12.9 KVAR 22.1 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .7 KW .1 KVAR .7 KVA

==== BUS: TRM-26C3NBAP21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .48
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 14.7 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAXFERP21 FEEDER AMPS: 14.7 VOLTAGE DROP: 17. %VD: 3.48\$
PROJECTED POWER FLOW: 11.7 KW 3.5 KVAR 12.2 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-26C4FVDP21 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD TO: BUS-CCRVPD21 FEEDER AMPS: 20.4 VOLTAGE DROP: 2. %VD: .41
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD FROM: MCC-26C FEEDER AMPS: 20.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.7 KW 11.2 KVAR 16.9 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C5AEF213 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-26C5LGVPD2 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .50
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: MCC-26C FEEDER AMPS: 7.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DGVDP2 FEEDER AMPS: 7.3 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-271BRRFCVE DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.4 KW 4.2 KVAR 9.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-FCVENC FEEDER AMPS: 11.5 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 8.4 KW 4.2 KVAR 9.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-271KRPAB23 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.37
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABSP23 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-271MLRBALE DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BALER FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-271MRRHT24 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 15.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 12.4 KW .1 KVAR 12.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-HTRC24 FEEDER AMPS: 15.3 VOLTAGE DROP: 2. %VD: .42
PROJECTED POWER FLOW: 12.4 KW .1 KVAR 12.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-272DRPAB25 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 7.5 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.5 KW 4.1 KVAR 6.1 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PAB25(-1) FEEDER AMPS: 7.5 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 4.5 KW 4.1 KVAR 6.1 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-272KRWHT22 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.38
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 2.3 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 1.2 KW 1.4 KVAR 1.9 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WHTPSP22 FEEDER AMPS: 2.3 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 1.2 KW 1.4 KVAR 1.9 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-272MRRGS21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC 27-1 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-GASST21 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .28
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-273DRBA22H DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC 27-1 FEEDER AMPS: 12.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BAT22HTRS FEEDER AMPS: 12.9 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-274BLRSH23 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 16.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 13.6 KW .1 KVAR 13.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-STRIPHTR23 FEEDER AMPS: 16.7 VOLTAGE DROP: 2. %VD: .46
PROJECTED POWER FLOW: 13.6 KW .1 KVAR 13.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-274BRRSH24 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC 27-1 FEEDER AMPS: 17.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 14.2 KW .1 KVAR 14.2 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-STRIPH24 FEEDER AMPS: 17.4 VOLTAGE DROP: 3. %VD: .57
PROJECTED POWER FLOW: 14.2 KW .1 KVAR 14.2 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-275FPABS21 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.40
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC 27-2 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABSTP21 FEEDER AMPS: 3.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-276KPABS22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.40
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES

LOAD FROM: MCC 27-2 FEEDER AMPS: 3.2 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABSTP22 FEEDER AMPS: 3.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-277MRLP223 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC 27-2 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 17.2 KW 8.2 KVAR 19.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-LP223 FEEDER AMPS: 23.4 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 17.2 KW 8.2 KVAR 19.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-278BLAFWPH DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC-27 FEEDER AMPS: 57.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 46.5 KW .3 KVAR 46.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AFWPHH FEEDER AMPS: 57.2 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 46.5 KW .3 KVAR 46.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.5 KW .3 KVAR 1.5 KVA

LOAD BUS: TRM-278DBAPRHT *** ISOLATED BUS ***

==== BUS: TRM-27A1AMCC27 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.32
===== PU BUS VOLTAGE: .977 ANGLE: -7.4 DEGREES

LOAD TO: MCC-27 FEEDER AMPS: 204.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 163.6 KW 28.6 KVAR 166.1 KVA PF: .99 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: MCC-27A FEEDER AMPS: 204.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 163.6 KW 28.6 KVAR 166.1 KVA PF: .99 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-27A4EBC24 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.32
===== PU BUS VOLTAGE: .977 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27A FEEDER AMPS: 64.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 47.0 KW 22.2 KVAR 52.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH24 FEEDER AMPS: 64.0 VOLTAGE DROP: 18. %VD: 3.74\$
PROJECTED POWER FLOW: 47.0 KW 22.2 KVAR 52.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 2.0 KW .4 KVAR 2.1 KVA

==== BUS: TRM-27A5E118V DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.32
===== PU BUS VOLTAGE: .977 ANGLE: -7.4 DEGREES

LOAD FROM: MCC-27A FEEDER AMPS: 19.1 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 14.1 KW 6.6 KVAR 15.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-INV 24 FEEDER AMPS: 19.1 VOLTAGE DROP: 18. %VD: 3.69\$
PROJECTED POWER FLOW: 14.1 KW 6.6 KVAR 15.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-27NT9MPABH DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
===== PU BUS VOLTAGE: .977 ANGLE: -7.5 DEGREES

LOAD FROM: MCC 27-1 FEEDER AMPS: 32.0 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 26.1 KW .0 KVAR 26.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-PABHTRDP FEEDER AMPS: 32.0 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 26.1 KW .0 KVAR 26.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-291ERSPHTR DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 12.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-292BLUATAL DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 37.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-UATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 11. %VD: 2.28
PROJECTED POWER FLOW: 27.8 KW 13.1 KVAR 30.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .0 KVAR .8 KVA

==== BUS: TRM-294BLSHT22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 26.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SHT22 FEEDER AMPS: 26.4 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-294BRSHT21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 27.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 18.2 KW 13.4 KVAR 22.6 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-SHT21 FEEDER AMPS: 27.5 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 18.2 KW 13.4 KVAR 22.6 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-294HWEF216 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.58
===== PU BUS VOLTAGE: .984 ANGLE: -6.9 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-WEF216 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-294MDGBH DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 93.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-DGBH FEEDER AMPS: 93.6 VOLTAGE DROP: 10. %VD: 2.16
PROJECTED POWER FLOW: 76.7 KW .5 KVAR 76.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.7 KW .5 KVAR 1.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-296BHRSSP1 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.50
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29 FEEDER AMPS: 18.7 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-HRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 9. %VD: 1.80
PROJECTED POWER FLOW: 12.4 KW 9.1 KVAR 15.4 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-29A1AMC29 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.44
===== PU BUS VOLTAGE: .986 ANGLE: -7.0 DEGREES

LOAD TO: MCC-29 FEEDER AMPS: 210.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 166.6 KW 44.5 KVAR 172.4 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD FROM: MCC-29A FEEDER AMPS: 210.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 166.6 KW 44.5 KVAR 172.4 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3CIAC21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.53
===== PU BUS VOLTAGE: .985 ANGLE: -6.9 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IACLGCP21 FEEDER AMPS: 4.6 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-29A3EED21A DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.44
===== PU BUS VOLTAGE: .986 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDG21AL FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3GEF215 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.55
===== PU BUS VOLTAGE: .984 ANGLE: -6.9 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EF215 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-29A3JBCH21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.44
===== PU BUS VOLTAGE: .986 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 61.6 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-BATCH21 FEEDER AMPS: 61.6 VOLTAGE DROP: 5. %VD: 1.04
PROJECTED POWER FLOW: 45.6 KW 21.9 KVAR 50.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-29A3LIAC21 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.47
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES

LOAD FROM: MCC-29A FEEDER AMPS: 83.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 56.8 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-IAC21 FEEDER AMPS: 83.4 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 56.8 KW 38.0 KVAR 68.4 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .6 KW .2 KVAR .6 KVA

==== BUS: TRM-2A21CMC28A DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A22APHBG DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A22BMC24A DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.04
===== PU BUS VOLTAGE: 1.000 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 557.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 384.4 KW 259.3 KVAR 463.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: MCC-24A FEEDER AMPS: 557.5 VOLTAGE DROP: 5. %VD: .96
PROJECTED POWER FLOW: 384.4 KW 259.3 KVAR 463.7 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 2.1 KW 4.8 KVAR 5.2 KVA

==== BUS: TRM-2A22CCCP22 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.06
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 314.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 123.1 KVAR 261.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-CCP22 FEEDER AMPS: 314.5 VOLTAGE DROP: 11. %VD: 2.37
PROJECTED POWER FLOW: 230.9 KW 123.1 KVAR 261.7 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 3.3 KW 7.1 KVAR 7.8 KVA

==== BUS: TRM-2A23CRMG21 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A24ASWP22 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .35
===== PU BUS VOLTAGE: .997 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-2A24BSIP22 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.05
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 423.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.9 KW 148.7 KVAR 351.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-SIP22 FEEDER AMPS: 423.0 VOLTAGE DROP: 6. %VD: 1.29
PROJECTED POWER FLOW: 318.9 KW 148.7 KVAR 351.9 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.7 KVAR 5.5 KVA

==== BUS: TRM-2A24CMC210 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 16.9 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 210 FEEDER AMPS: 22.4 VOLTAGE DROP: 0. %VD: .09
PROJECTED POWER FLOW: 16.9 KW 8.1 KVAR 18.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-2A25ASWP25 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.05
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 382.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-SWP25 FEEDER AMPS: 382.2 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

==== BUS: TRM-2A25BMC23 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 75.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 60.8 KW 14.8 KVAR 62.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 23 FEEDER AMPS: 75.2 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 60.8 KW 14.8 KVAR 62.6 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .4 KVA

==== BUS: TRM-2A25CLTRF DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 179.8 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 149.6 KW .3 KVAR 149.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-LTRFSW22 FEEDER AMPS: 179.8 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 149.6 KW .3 KVAR 149.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .2 KW .3 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-2A26CCRF23 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.05
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 354.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 256.6 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF23 FEEDER AMPS: 354.6 VOLTAGE DROP: 13. %VD: 2.73
PROJECTED POWER FLOW: 256.6 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.8 KW 6.1 KVAR 8.4 KVA

==== BUS: TRM-2AMC21 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-2A FEEDER AMPS: 120.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 92.9 KW 37.1 KVAR 100.0 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 21 FEEDER AMPS: 120.2 VOLTAGE DROP: 6. %VD: 1.15
PROJECTED POWER FLOW: 92.9 KW 37.1 KVAR 100.0 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .8 KW 1.1 KVAR 1.4 KVA

==== BUS: TRM-2ATIE3A&6A DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A1CMCC211 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A2AMCC26C DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 361.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 255.3 KW 158.3 KVAR 300.4 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MCC-26C FEEDER AMPS: 361.7 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 255.3 KW 158.3 KVAR 300.4 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .5 KW 1.1 KVAR 1.2 KVA

==== BUS: TRM-3A2BMCC25 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 77.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 60.4 KW 23.2 KVAR 64.7 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 25 FEEDER AMPS: 77.9 VOLTAGE DROP: 2. %VD: .31
PROJECTED POWER FLOW: 60.4 KW 23.2 KVAR 64.7 KVA PF: .93 LAGGING
LOSSES THRU FEEDER: .1 KW .3 KVAR .3 KVA

==== BUS: TRM-3A2CLTSW24 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 222.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 164.0 KW 85.9 KVAR 185.1 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: HT-LTG-22 FEEDER AMPS: 222.9 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 164.0 KW 85.9 KVAR 185.1 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 1.3 KW 3.0 KVAR 3.2 KVA

==== BUS: TRM-3A3ACRF24 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 355.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 256.6 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CRF24 FEEDER AMPS: 355.2 VOLTAGE DROP: 13. %VD: 2.73
PROJECTED POWER FLOW: 256.6 KW 145.6 KVAR 295.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 5.8 KW 6.1 KVAR 8.4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-3A3BMCC22 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 39.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 29.6 KW 13.5 KVAR 32.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC 22 FEEDER AMPS: 39.2 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 29.6 KW 13.5 KVAR 32.6 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

==== BUS: TRM-3A3CSWP25 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .17
===== PU BUS VOLTAGE: .998 ANGLE: -6.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A4APHBG21 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A4CSIP22 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.24
===== PU BUS VOLTAGE: .988 ANGLE: -6.5 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A5ASWP22 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 382.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-SWP22 FEEDER AMPS: 382.9 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 281.2 KW 148.3 KVAR 317.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .5 KW .6 KVAR .8 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-3A5BCHP22 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-3A5CRHR21 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 425.9 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 319.1 KW 152.6 KVAR 353.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-RHR21 FEEDER AMPS: 425.9 VOLTAGE DROP: 7. %VD: 1.36
PROJECTED POWER FLOW: 319.1 KW 152.6 KVAR 353.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 3.0 KW 5.0 KVAR 5.8 KVA

==== BUS: TRM-3A6CAFP21 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-3A FEEDER AMPS: 547.2 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 392.5 KW 228.9 KVAR 454.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-AFP21 FEEDER AMPS: 547.2 VOLTAGE DROP: 7. %VD: 1.53
PROJECTED POWER FLOW: 392.5 KW 228.9 KVAR 454.4 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.7 KVAR 7.9 KVA

==== BUS: TRM-3ATIE2A&6A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A15ASIP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 428.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 318.9 KW 148.5 KVAR 351.8 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-SIP21 FEEDER AMPS: 428.2 VOLTAGE DROP: 6. %VD: 1.23
PROJECTED POWER FLOW: 318.9 KW 148.5 KVAR 351.8 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 2.8 KW 4.5 KVAR 5.3 KVA

==== BUS: TRM-5A15BCSP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 479.3 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 354.9 KW 170.5 KVAR 393.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-CSP21 FEEDER AMPS: 479.3 VOLTAGE DROP: 8. %VD: 1.62
PROJECTED POWER FLOW: 354.9 KW 170.5 KVAR 393.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 4.0 KW 6.6 KVAR 7.7 KVA

==== BUS: TRM-5A15CCRF21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 353.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 251.2 KW 144.8 KVAR 290.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF21 FEEDER AMPS: 353.0 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 251.2 KW 144.8 KVAR 290.0 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .4 KW 5.3 KVAR 5.4 KVA

==== BUS: TRM-5A16APHBG DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A16BMCC28 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-5A16CRP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A17ACCP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 317.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.2 KW 121.8 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CCP21 FEEDER AMPS: 317.0 VOLTAGE DROP: 9. %VD: 1.87
PROJECTED POWER FLOW: 230.2 KW 121.8 KVAR 260.4 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 2.5 KW 5.8 KVAR 6.3 KVA

==== BUS: TRM-5A17BMC26A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.20
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 121.2 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC-26A FEEDER AMPS: 121.2 VOLTAGE DROP: 5. %VD: 1.11
PROJECTED POWER FLOW: 85.9 KW 50.3 KVAR 99.6 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .7 KW 1.0 KVAR 1.2 KVA

==== BUS: TRM-5A17CLTSED DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 183.7 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 150.9 KW 5.4 KVAR 151.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-EDN2(N) FEEDER AMPS: 183.7 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 150.9 KW 5.4 KVAR 151.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.0 KW 2.3 KVAR 2.5 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-5A18ACRF22 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 357.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 255.5 KW 144.7 KVAR 293.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF22 FEEDER AMPS: 357.5 VOLTAGE DROP: 11. %VD: 2.25
PROJECTED POWER FLOW: 255.5 KW 144.7 KVAR 293.6 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 4.7 KW 5.3 KVAR 7.1 KVA

==== BUS: TRM-5A18BCHP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.20
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 174.5 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 127.7 KW 65.2 KVAR 143.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MT-CHP21 FEEDER AMPS: 174.5 VOLTAGE DROP: 6. %VD: 1.20
PROJECTED POWER FLOW: 127.7 KW 65.2 KVAR 143.4 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.8 KVAR 2.0 KVA

==== BUS: TRM-5A18CSAC DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-5A19AMC29A DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 367.1 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 278.6 KW 115.5 KVAR 301.6 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MCC-29A FEEDER AMPS: 367.1 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 278.6 KW 115.5 KVAR 301.6 KVA PF: .92 LAGGING
LOSSES THRU FEEDER: .4 KW .9 KVAR 1.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-5A19BSWP24 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.21
===== PU BUS VOLTAGE: .988 ANGLE: -6.9 DEGREES

LOAD FROM: BUS-5A FEEDER AMPS: 395.2 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.6 KW 154.3 KVAR 324.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-SWP24 FEEDER AMPS: 395.2 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 285.6 KW 154.3 KVAR 324.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.8 KW 6.6 KVAR 8.2 KVA

==== BUS: TRM-5A19CSWP21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A10ASIP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 466.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 344.5 KW 160.8 KVAR 380.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-SIP23 FEEDER AMPS: 466.0 VOLTAGE DROP: 6. %VD: 1.30
PROJECTED POWER FLOW: 344.5 KW 160.8 KVAR 380.2 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: 3.1 KW 5.2 KVAR 6.1 KVA

==== BUS: TRM-6A10BMC27A DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.88
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 285.6 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 225.4 KW 58.9 KVAR 233.0 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MCC-27A FEEDER AMPS: 285.6 VOLTAGE DROP: 2. %VD: .44
PROJECTED POWER FLOW: 225.4 KW 58.9 KVAR 233.0 KVA PF: .97 LAGGING
LOSSES THRU FEEDER: .7 KW 1.6 KVAR 1.7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-6A10CCRF25 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 363.5 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 257.9 KW 146.4 KVAR 296.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CRF25 FEEDER AMPS: 363.5 VOLTAGE DROP: 15. %VD: 3.17\$
PROJECTED POWER FLOW: 257.9 KW 146.4 KVAR 296.5 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: 7.1 KW 6.9 KVAR 9.9 KVA

==== BUS: TRM-6A11ARHR22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 433.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 319.3 KW 152.9 KVAR 354.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

LOAD TO: MT-RHR22 FEEDER AMPS: 433.9 VOLTAGE DROP: 7. %VD: 1.42
PROJECTED POWER FLOW: 319.3 KW 152.9 KVAR 354.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 3.2 KW 5.3 KVAR 6.1 KVA

==== BUS: TRM-6A11ARP22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A11BCHP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A12ACSP22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 482.9 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 355.0 KW 170.7 KVAR 393.9 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .2 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-CSP22 FEEDER AMPS: 482.9 VOLTAGE DROP: 8. %VD: 1.65
PROJECTED POWER FLOW: 355.0 KW 170.7 KVAR 393.9 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 4.1 KW 6.8 KVAR 7.9 KVA

LOAD BUS: TRM-6A12BTAO *** ISOLATED BUS ***

==== BUS: TRM-6A12CCCP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.88
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 320.6 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 230.9 KW 122.9 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

LOAD TO: MT-CCP23 FEEDER AMPS: 320.6 VOLTAGE DROP: 11. %VD: 2.30
PROJECTED POWER FLOW: 230.9 KW 122.9 KVAR 261.6 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 3.3 KW 6.9 KVAR 7.7 KVA

==== BUS: TRM-6A7BT2A&3A DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A7CRMG22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A8ALTSW22 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .09
===== PU BUS VOLTAGE: .999 ANGLE: -6.1 DEGREES

**** NO LOAD SPECIFIED ****

==== BUS: TRM-6A8BSWP26 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 397.1 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: 285.3 KW 153.3 KVAR 323.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: .0 KW .1 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: MT-SWP26 FEEDER AMPS: 397.1 VOLTAGE DROP: 10. %VD: 2.03
PROJECTED POWER FLOW: 285.3 KW 153.3 KVAR 323.9 KVA PF: .88 LAGGING
LOSSES THRU FEEDER: 4.6 KW 5.6 KVAR 7.3 KVA

==== BUS: TRM-6A8CSWP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.87
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-6A9APHCG24 *** ISOLATED BUS ***

==== BUS: TRM-6A9BMC26B DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.88
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 156.2 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: MCC-26B FEEDER AMPS: 156.2 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 95.6 KW 84.4 KVAR 127.5 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: .1 KW 1.5 KVAR 1.5 KVA

==== BUS: TRM-6A9CAFP23 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.90
===== PU BUS VOLTAGE: .981 ANGLE: -7.1 DEGREES

LOAD FROM: BUS-6A FEEDER AMPS: 551.7 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 388.9 KW 226.4 KVAR 450.0 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: .0 KW .3 KVAR .3 KVA

LOAD TO: MT-AFP23 FEEDER AMPS: 551.7 VOLTAGE DROP: 6. %VD: 1.35
PROJECTED POWER FLOW: 388.9 KW 226.4 KVAR 450.0 KVA PF: .86 LAGGING
LOSSES THRU FEEDER: 3.7 KW 6.0 KVAR 7.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-AAFWBF217 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.52
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERA FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF217 FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AAFWBF218 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.51
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERA FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF218 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AAFWBF219 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.51
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERA FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AAFWBF219 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-ACCP21 DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.48
===== PU BUS VOLTAGE: .965 ANGLE: -6.5 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 3.7 KVAR

LOAD FROM: TRM-26A6KRCP21 FEEDER AMPS: 6.4 VOLTAGE DROP: 5. %VD: 1.12
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-ACCP22 DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.77
===== PU BUS VOLTAGE: .962 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 3.6 KVAR

LOAD FROM: TRM-26B5KRAC22 FEEDER AMPS: 6.5 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 3.7 KW 3.6 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-AFWB32 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.51
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 7.0 KW .0 KVAR

LOAD FROM: TRM-BAFWB32 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 7.0 KW .0 KVAR 7.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AFWB33 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.52
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.8 KW .0 KVAR

LOAD FROM: BUS-BAFWB33 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 8.7 KW .0 KVAR 8.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-AFWB34 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.52
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.8 KW .0 KVAR

LOAD FROM: BUS-BAFWB34 FEEDER AMPS: 10.6 VOLTAGE DROP: 0. %VD: .08
PROJECTED POWER FLOW: 8.7 KW .0 KVAR 8.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AFWBF217 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.56
===== PU BUS VOLTAGE: .984 ANGLE: -5.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-AAFWBF217 FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AFWBF218 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.55
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 3.7 KVAR

LOAD FROM: TRM-AAFWBF218 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-AFWBF219 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.55
===== PU BUS VOLTAGE: .985 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 3.7 KVAR

LOAD FROM: TRM-AAFWBF219 FEEDER AMPS: 6.4 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 3.7 KW 3.7 KVAR 5.2 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-AFWPHH DESIGN VOLTS: 480 BUS VOLTS: 454 %VD: 5.41\$
===== PU BUS VOLTAGE: .946 ANGLE: -7.8 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW .0 KVAR

LOAD FROM: TRM-278BLAFWPH FEEDER AMPS: 57.2 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 45.0 KW .0 KVAR 45.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.5 KW .3 KVAR 1.5 KVA

==== BUS: TRM-BAFWB32 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.45
===== PU BUS VOLTAGE: .986 ANGLE: -6.0 DEGREES

LOAD FROM: BUS-255ERB FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 7.0 KW .0 KVAR 7.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-AFWB32 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 7.0 KW .0 KVAR 7.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BAHT DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.52
===== PU BUS VOLTAGE: .975 ANGLE: -7.1 DEGREES
NET BRANCH DIVERSITY LOAD: 11.8 KW .0 KVAR

LOAD FROM: TRM-26A6HRBAHT FEEDER AMPS: 14.5 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 11.8 KW .0 KVAR 11.8 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BALER DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.44
===== PU BUS VOLTAGE: .976 ANGLE: -7.4 DEGREES
NET BRANCH DIVERSITY LOAD: 2.6 KW 2.8 KVAR

LOAD FROM: TRM-271MLRBALE FEEDER AMPS: 4.6 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-BAPP22 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 3.86
===== PU BUS VOLTAGE: .961 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 9.2 KVAR

LOAD FROM: TRM-26B7MBAP22 FEEDER AMPS: 18.1 VOLTAGE DROP: 5. %VD: 1.13
PROJECTED POWER FLOW: 11.3 KW 9.2 KVAR 14.5 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

LOAD BUS: TRM-BAPRHTR *** ISOLATED BUS ***

==== BUS: TRM-BAT22HTRS DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.77
===== PU BUS VOLTAGE: .972 ANGLE: -7.5 DEGREES
NET BRANCH DIVERSITY LOAD: 10.5 KW .0 KVAR

LOAD FROM: TRM-273DRBA22H FEEDER AMPS: 12.9 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BATCH21 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.48
===== PU BUS VOLTAGE: .975 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW 21.8 KVAR

LOAD FROM: TRM-29A3JBCH21 FEEDER AMPS: 61.6 VOLTAGE DROP: 5. %VD: 1.04
PROJECTED POWER FLOW: 45.0 KW 21.8 KVAR 50.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .6 KW .1 KVAR .6 KVA

==== BUS: TRM-BATCH22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.55
===== PU BUS VOLTAGE: .975 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW 21.8 KVAR

LOAD FROM: TRM-24A2EBCH22 FEEDER AMPS: 61.7 VOLTAGE DROP: 8. %VD: 1.63
PROJECTED POWER FLOW: 45.0 KW 21.8 KVAR 50.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .9 KW .2 KVAR .9 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-BATCH23 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .70
===== PU BUS VOLTAGE: .993 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 25.0 KW 12.1 KVAR

LOAD FROM: TRM-26C3FBC23 FEEDER AMPS: 33.6 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 25.0 KW 12.1 KVAR 27.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-BATCH24 DESIGN VOLTS: 480 BUS VOLTS: 451 %VD: 6.06\$
===== PU BUS VOLTAGE: .939 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 45.0 KW 21.8 KVAR

LOAD FROM: TRM-27A4EBC24 FEEDER AMPS: 64.0 VOLTAGE DROP: 18. %VD: 3.74\$
PROJECTED POWER FLOW: 45.0 KW 21.8 KVAR 50.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: 2.0 KW .4 KVAR 2.1 KVA

==== BUS: TRM-BATK21HTR DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.18
===== PU BUS VOLTAGE: .968 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 10.5 KW .0 KVAR

LOAD FROM: TRM-26C3ABT21H FEEDER AMPS: 13.0 VOLTAGE DROP: 13. %VD: 2.71
PROJECTED POWER FLOW: 10.5 KW .0 KVAR 10.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-BAXFERP21 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 3.95
===== PU BUS VOLTAGE: .960 ANGLE: -5.5 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 3.5 KVAR

LOAD FROM: TRM-26C3NBAP21 FEEDER AMPS: 14.7 VOLTAGE DROP: 17. %VD: 3.48\$
PROJECTED POWER FLOW: 11.3 KW 3.5 KVAR 11.8 KVA PF: .96 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-BF21 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .94

===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES

NET BRANCH DIVERSITY LOAD: 6.0 KW 5.5 KVAR

LOAD FROM: TRM-26C1DBF21 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: .05

PROJECTED POWER FLOW: 6.0 KW 5.5 KVAR 8.2 KVA PF: .74 LAGGING

LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-BKR-SST#2 DESIGN VOLTS: 480 BUS VOLTS: 481 %VD: -.11

===== PU BUS VOLTAGE: 1.001 ANGLE: -5.9 DEGREES

LOAD TO: BUS-2A FEEDER AMPS:2403.1 VOLTAGE DROP: 0. %VD: .04

PROJECTED POWER FLOW: 1792.3 KW 887.8 KVAR 2000.1 KVA PF: .90 LAGGING

LOSSES THRU FEEDER: .0 KW 1.7 KVAR 1.7 KVA

LOAD FROM: LT-SST#2 FEEDER AMPS:2403.1 VOLTAGE DROP: 0. %VD: .02

PROJECTED POWER FLOW: 1792.3 KW 887.8 KVAR 2000.1 KVA PF: .90 LAGGING

LOSSES THRU FEEDER: .4 KW .2 KVAR .5 KVA

==== BUS: TRM-BKR-SST#3 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .08

===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES

LOAD TO: BUS-3A FEEDER AMPS:2411.0 VOLTAGE DROP: 0. %VD: .04

PROJECTED POWER FLOW: 1758.8 KW 958.2 KVAR 2002.8 KVA PF: .88 LAGGING

LOSSES THRU FEEDER: .0 KW 1.7 KVAR 1.7 KVA

LOAD FROM: LT-SST#3 FEEDER AMPS:2411.0 VOLTAGE DROP: 0. %VD: .02

PROJECTED POWER FLOW: 1758.8 KW 958.2 KVAR 2002.8 KVA PF: .88 LAGGING

LOSSES THRU FEEDER: .4 KW .2 KVAR .5 KVA

==== BUS: TRM-BKR-SST#5 DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.14

===== PU BUS VOLTAGE: .989 ANGLE: -6.8 DEGREES

LOAD TO: BUS-5A FEEDER AMPS:3158.3 VOLTAGE DROP: 0. %VD: .05

PROJECTED POWER FLOW: 2339.3 KW 1125.1 KVAR 2595.8 KVA PF: .90 LAGGING

LOSSES THRU FEEDER: .0 KW 3.0 KVAR 3.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: LT-SST#5 FEEDER AMPS:3158.3 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2339.3 KW 1125.1 KVAR 2595.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .7 KW .4 KVAR .8 KVA

==== BUS: TRM-BKR-SST#6 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.81
===== PU BUS VOLTAGE: .982 ANGLE: -7.0 DEGREES

LOAD TO: BUS-6A FEEDER AMPS:3444.5 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: 2502.8 KW 1281.6 KVAR 2811.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW 3.6 KVAR 3.6 KVA

LOAD FROM: LT-SST#6 FEEDER AMPS:3444.5 VOLTAGE DROP: 0. %VD: .03
PROJECTED POWER FLOW: 2502.8 KW 1281.6 KVAR 2811.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .8 KW .5 KVAR .9 KVA

==== BUS: TRM-BUVF DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .93
===== PU BUS VOLTAGE: .991 ANGLE: -5.9 DEGREES
NET BRANCH DIVERSITY LOAD: 5.8 KW 5.3 KVAR

LOAD FROM: TRM-26C1HBUVF FEEDER AMPS: 9.5 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.8 KW 5.3 KVAR 7.9 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-CLGWP22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.77
===== PU BUS VOLTAGE: .982 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 83.6 KW 52.6 KVAR

LOAD FROM: TRM-245MCLGWP2 FEEDER AMPS: 120.9 VOLTAGE DROP: 4. %VD: .74
PROJECTED POWER FLOW: 83.6 KW 52.6 KVAR 98.8 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: .6 KW .5 KVAR .7 KVA

==== BUS: TRM-CO2U DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.13
===== PU BUS VOLTAGE: .989 ANGLE: -5.8 DEGREES

LOAD TO: BUS-CO2U TRANSF AMPS: 25.1 VOLTAGE DROP: 15. %VD: 3.13\$
PROJECTED POWER FLOW: 18.6 KW 9.0 KVAR 20.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .2 KVAR .7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-221MLCO2U FEEDER AMPS: 25.1 VOLTAGE DROP: 4. %VD: .86
PROJECTED POWER FLOW: 18.6 KW 9.0 KVAR 20.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-CPREC21 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.29
===== PU BUS VOLTAGE: .987 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 16.2 KW 7.8 KVAR

LOAD FROM: TRM-211DRREC21 FEEDER AMPS: 21.9 VOLTAGE DROP: 1. %VD: .21
PROJECTED POWER FLOW: 16.2 KW 7.8 KVAR 18.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-CPSP212 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .41
===== PU BUS VOLTAGE: .996 ANGLE: -6.2 DEGREES

LOAD FROM: BUS-0798 FEEDER AMPS: 1.1 VOLTAGE DROP: 0. %VD: .01
PROJECTED POWER FLOW: .6 KW .7 KVAR 1.0 KVA PF: .63 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-CPSP24 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .42
===== PU BUS VOLTAGE: .996 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: .9 KW 1.4 KVAR

LOAD FROM: BUS-0799 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .02
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-CRHVACDP DESIGN VOLTS: 480 BUS VOLTS: 452 %VD: 5.77\$
===== PU BUS VOLTAGE: .942 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 41.8 KW 36.9 KVAR

LOAD FROM: TRM-26B7DHVAC FEEDER AMPS: 71.1 VOLTAGE DROP: 15. %VD: 3.07\$
PROJECTED POWER FLOW: 41.8 KW 36.9 KVAR 55.7 KVA PF: .75 LAGGING
LOSSES THRU FEEDER: 1.8 KW .7 KVAR 2.0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-DGBH DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.63
===== PU BUS VOLTAGE: .964 ANGLE: -7.4 DEGREES
NET BRANCH DIVERSITY LOAD: 75.0 KW .0 KVAR

LOAD FROM: TRM-294MDGBH FEEDER AMPS: 93.6 VOLTAGE DROP: 10. %VD: 2.16
PROJECTED POWER FLOW: 75.0 KW .0 KVAR 75.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.7 KW .5 KVAR 1.7 KVA

==== BUS: TRM-DGVDP2 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .62
===== PU BUS VOLTAGE: .994 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-26C5LGVP2 FEEDER AMPS: 7.3 VOLTAGE DROP: 1. %VD: .12
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-FAN321 FEEDER AMPS: 7.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-DISTPNL1 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.86
===== PU BUS VOLTAGE: .971 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 15.5 KW 15.6 KVAR

LOAD FROM: TRM-26A1DRDP1 FEEDER AMPS: 27.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 15.5 KW 15.6 KVAR 22.0 KVA PF: .70 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-DPSP21 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .52
===== PU BUS VOLTAGE: .995 ANGLE: -5.8 DEGREES
NET BRANCH DIVERSITY LOAD: .9 KW 1.4 KVAR

LOAD FROM: TRM-224FDPSP21 FEEDER AMPS: 2.0 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-EBB1-S DESIGN VOLTS: 120 BUS VOLTS: 114 %VD: 4.82
===== PU BUS VOLTAGE: .952 ANGLE: -7.0 DEGREES

LOAD FROM: BUS-26AAL3DP1B TRANSF AMPS: 111.6 VOLTAGE DROP: 3. %VD: 2.32
PROJECTED POWER FLOW: 19.9 KW 9.6 KVAR 22.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

LOAD TO: TRM-EPF5 FEEDER AMPS: 111.6 VOLTAGE DROP: 0. %VD: .37
PROJECTED POWER FLOW: 19.9 KW 9.6 KVAR 22.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-EDG21AL DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.48
===== PU BUS VOLTAGE: .985 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 4.8 KW 5.4 KVAR

LOAD FROM: TRM-29A3EED21A FEEDER AMPS: 8.8 VOLTAGE DROP: 0. %VD: .04
PROJECTED POWER FLOW: 4.8 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDG22AL DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: .97
===== PU BUS VOLTAGE: .990 ANGLE: -6.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.2 KW 5.5 KVAR

LOAD FROM: TRM-24A2CED22A FEEDER AMPS: 9.1 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 5.2 KW 5.5 KVAR 7.5 KVA PF: .69 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDG23AL DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.08
===== PU BUS VOLTAGE: .969 ANGLE: -7.4 DEGREES

LOAD TO: BUS-EDG23AL(A) TRANSF AMPS: 2.4 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.8 KW .9 KVAR 2.0 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

LOAD TO: BUS-EDG23AL(B) FEEDER AMPS: 9.0 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 4.9 KW 5.4 KVAR 7.3 KVA PF: .67 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-26B6BRREDA FEEDER AMPS: 11.3 VOLTAGE DROP: 1. %VD: .29
PROJECTED POWER FLOW: 6.6 KW 6.3 KVAR 9.1 KVA PF: .72 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EDGVDP1 DESIGN VOLTS: 480 BUS VOLTS: 456 %VD: 4.94
===== PU BUS VOLTAGE: .951 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.2 KVAR

LOAD FROM: TRM-26B5MRLEDV FEEDER AMPS: 7.6 VOLTAGE DROP: 11. %VD: 2.22
PROJECTED POWER FLOW: 4.3 KW 4.2 KVAR 6.0 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-EDN2 (N) DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.90
===== PU BUS VOLTAGE: .981 ANGLE: -7.7 DEGREES

LOAD TO: LT-LTG23 TRANSF AMPS: 183.7 VOLTAGE DROP: 2. %VD: .33
PROJECTED POWER FLOW: 149.9 KW 3.1 KVAR 149.9 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .5 KW 3.1 KVAR 3.1 KVA

LOAD FROM: TRM-5A17CLTSED FEEDER AMPS: 183.7 VOLTAGE DROP: 3. %VD: .71
PROJECTED POWER FLOW: 149.9 KW 3.1 KVAR 149.9 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: 1.0 KW 2.3 KVAR 2.5 KVA

==== BUS: TRM-EDVDP1 DESIGN VOLTS: 480 BUS VOLTS: 448 %VD: 6.67\$
===== PU BUS VOLTAGE: .933 ANGLE: -5.4 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 7.4 KVAR

LOAD FROM: TRM-26B5MRREDV FEEDER AMPS: 13.5 VOLTAGE DROP: 19. %VD: 3.92\$
PROJECTED POWER FLOW: 7.5 KW 7.4 KVAR 10.5 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-EF215 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.81
===== PU BUS VOLTAGE: .982 ANGLE: -6.7 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: TRM-29A3GEF215 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-EPF5 DESIGN VOLTS: 120 BUS VOLTS: 114 %VD: 5.19\$
===== PU BUS VOLTAGE: .948 ANGLE: -7.0 DEGREES
NET BRANCH DIVERSITY LOAD: 19.8 KW 9.6 KVAR

LOAD FROM: TRM-EBB1-S FEEDER AMPS: 111.6 VOLTAGE DROP: 0. %VD: .37
PROJECTED POWER FLOW: 19.8 KW 9.6 KVAR 22.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-EPV21 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.53
===== PU BUS VOLTAGE: .975 ANGLE: -7.1 DEGREES

LOAD TO: BUS-EPV21 TRANSF AMPS: 10.4 VOLTAGE DROP: 6. %VD: 1.30
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.4 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD FROM: TRM-26A1DEPV21 FEEDER AMPS: 10.4 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 7.6 KW 3.7 KVAR 8.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-EPX3 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.67
===== PU BUS VOLTAGE: .973 ANGLE: -7.0 DEGREES

LOAD TO: BUS-EPX3 TRANSF AMPS: 21.1 VOLTAGE DROP: 13. %VD: 2.64
PROJECTED POWER FLOW: 15.4 KW 7.4 KVAR 17.1 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .4 KW .2 KVAR .5 KVA

LOAD FROM: TRM-26A6HEPX3 FEEDER AMPS: 21.1 VOLTAGE DROP: 2. %VD: .36
PROJECTED POWER FLOW: 15.4 KW 7.4 KVAR 17.1 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-ETEF21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.98
===== PU BUS VOLTAGE: .970 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.4 KW 6.1 KVAR

LOAD FROM: TRM-26A1BEF21 FEEDER AMPS: 11.8 VOLTAGE DROP: 3. %VD: .62
PROJECTED POWER FLOW: 7.4 KW 6.1 KVAR 9.6 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-ETEF22 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.37
===== PU BUS VOLTAGE: .966 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 7.4 KW 6.1 KVAR

LOAD FROM: TRM-26B1BEF22 FEEDER AMPS: 11.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 7.4 KW 6.1 KVAR 9.6 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-FAN321 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .62
===== PU BUS VOLTAGE: .994 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-DGVDP2 FEEDER AMPS: 7.3 VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-FCVENC DESIGN VOLTS: 480 BUS VOLTS: 458 %VD: 4.58
===== PU BUS VOLTAGE: .954 ANGLE: -6.8 DEGREES

LOAD TO: BUS-1130 TRANSF AMPS: 11.5 VOLTAGE DROP: 7. %VD: 1.53
PROJECTED POWER FLOW: 8.1 KW 4.2 KVAR 9.1 KVA PF: .89 LAGGING
LOSSES THRU TRANSF: .0 KW .3 KVAR .3 KVA

LOAD FROM: TRM-271BRRFCVE FEEDER AMPS: 11.5 VOLTAGE DROP: 11. %VD: 2.24
PROJECTED POWER FLOW: 8.1 KW 4.2 KVAR 9.1 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-FLBC DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.26
===== PU BUS VOLTAGE: .987 ANGLE: -5.7 DEGREES
NET BRANCH DIVERSITY LOAD: 6.3 KW 3.1 KVAR

LOAD FROM: TRM-224BFLBC FEEDER AMPS: 8.5 VOLTAGE DROP: 1. %VD: .28
PROJECTED POWER FLOW: 6.3 KW 3.1 KVAR 7.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-GASST21 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.62
===== PU BUS VOLTAGE: .974 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 2.0 KVAR

LOAD FROM: TRM-272MRRGS21 FEEDER AMPS: 3.2 VOLTAGE DROP: 1. %VD: .28
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-HRSSP1 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.30
===== PU BUS VOLTAGE: .967 ANGLE: -6.3 DEGREES
NET BRANCH DIVERSITY LOAD: 12.1 KW 9.1 KVAR

LOAD FROM: TRM-296BHRSSP1 FEEDER AMPS: 18.7 VOLTAGE DROP: 9. %VD: 1.80
PROJECTED POWER FLOW: 12.1 KW 9.1 KVAR 15.1 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-HTRC24 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.76
===== PU BUS VOLTAGE: .972 ANGLE: -7.5 DEGREES

LOAD TO: BUS-HTXFMR24 TRANSF AMPS: 15.3 VOLTAGE DROP: 8. %VD: 1.62
PROJECTED POWER FLOW: 12.4 KW .1 KVAR 12.4 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .2 KW .1 KVAR .2 KVA

LOAD FROM: TRM-271MRRHT24 FEEDER AMPS: 15.3 VOLTAGE DROP: 2. %VD: .42
PROJECTED POWER FLOW: 12.4 KW .1 KVAR 12.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-HTTR22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.40
===== PU BUS VOLTAGE: .986 ANGLE: -5.9 DEGREES

LOAD FROM: BUS-0804 FEEDER AMPS: 31.5 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 23.3 KW 11.2 KVAR 25.9 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

LOAD TO: BUS-HTTR22 TRANSF AMPS: 31.5 VOLTAGE DROP: 13. %VD: 2.62
PROJECTED POWER FLOW: 23.3 KW 11.2 KVAR 25.9 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .3 KVAR .7 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-HTTRC21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.69
===== PU BUS VOLTAGE: .983 ANGLE: -6.4 DEGREES

LOAD TO: BUS-HTTRC21 TRANSF AMPS: 9.7 VOLTAGE DROP: 5. %VD: 1.13
PROJECTED POWER FLOW: 8.0 KW .0 KVAR 8.0 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD FROM: TRM-213MHTTR21 FEEDER AMPS: 9.7 VOLTAGE DROP: 3. %VD: .61
PROJECTED POWER FLOW: 8.0 KW .0 KVAR 8.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-IAC21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.28
===== PU BUS VOLTAGE: .977 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 56.3 KW 37.8 KVAR

LOAD FROM: TRM-29A3LIAC21 FEEDER AMPS: 83.4 VOLTAGE DROP: 4. %VD: .82
PROJECTED POWER FLOW: 56.3 KW 37.8 KVAR 67.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .6 KW .2 KVAR .6 KVA

==== BUS: TRM-IAC22 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.53
===== PU BUS VOLTAGE: .975 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 56.3 KW 38.3 KVAR

LOAD FROM: TRM-24A3CCMP22 FEEDER AMPS: 84.0 VOLTAGE DROP: 8. %VD: 1.59
PROJECTED POWER FLOW: 56.3 KW 38.3 KVAR 68.1 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.1 KW .3 KVAR 1.2 KVA

==== BUS: TRM-IACCWP22 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.38
===== PU BUS VOLTAGE: .986 ANGLE: -6.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW .9 KVAR

LOAD FROM: TRM-24A4AIAC22 FEEDER AMPS: 2.3 VOLTAGE DROP: 2. %VD: .40
PROJECTED POWER FLOW: 1.7 KW .9 KVAR 1.9 KVA PF: .89 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-IACLGCP21 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.86
===== PU BUS VOLTAGE: .981 ANGLE: -6.7 DEGREES
NET BRANCH DIVERSITY LOAD: 2.6 KW 2.8 KVAR

LOAD FROM: TRM-29A3CIAC21 FEEDER AMPS: 4.6 VOLTAGE DROP: 2. %VD: .34
PROJECTED POWER FLOW: 2.6 KW 2.8 KVAR 3.8 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-IAD DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 1.08
===== PU BUS VOLTAGE: .989 ANGLE: -6.4 DEGREES

LOAD TO: BUS-245DRIAD TRANSF AMPS: 2.7 VOLTAGE DROP: 17. %VD: 3.45\$
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .1 KW .0 KVAR .1 KVA

LOAD FROM: TRM-245DRIAD FEEDER AMPS: 2.7 VOLTAGE DROP: 0. %VD: .07
PROJECTED POWER FLOW: 2.1 KW 1.0 KVAR 2.3 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-INV 24 DESIGN VOLTS: 480 BUS VOLTS: 451 %VD: 6.01\$
===== PU BUS VOLTAGE: .940 ANGLE: -6.5 DEGREES
NET BRANCH DIVERSITY LOAD: 13.5 KW 6.5 KVAR

LOAD FROM: TRM-27A5E118V FEEDER AMPS: 19.1 VOLTAGE DROP: 18. %VD: 3.69\$
PROJECTED POWER FLOW: 13.5 KW 6.5 KVAR 15.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .6 KW .0 KVAR .6 KVA

==== BUS: TRM-IPHCF22 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.97
===== PU BUS VOLTAGE: .980 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-242FIPCF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-IPHCF24 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 1.99
===== PU BUS VOLTAGE: .980 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243FIPCF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .93
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-IPHCF26 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.93
===== PU BUS VOLTAGE: .981 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244FIPCF26 FEEDER AMPS: 13.6 VOLTAGE DROP: 4. %VD: .87
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-LP21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.66
===== PU BUS VOLTAGE: .983 ANGLE: -6.4 DEGREES

LOAD TO: BUS-LP21 TRANSF AMPS: 78.3 VOLTAGE DROP: 94. %VD: 19.50\$
PROJECTED POWER FLOW: 58.0 KW 27.2 KVAR 64.0 KVA PF: .91 LAGGING
LOSSES THRU TRANSF: 11.8 KW 4.8 KVAR 12.7 KVA

LOAD FROM: TRM-211FLP21 FEEDER AMPS: 78.3 VOLTAGE DROP: 3. %VD: .58
PROJECTED POWER FLOW: 58.0 KW 27.2 KVAR 64.0 KVA PF: .91 LAGGING
LOSSES THRU FEEDER: .4 KW .1 KVAR .4 KVA

==== BUS: TRM-LP223 DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.25
===== PU BUS VOLTAGE: .968 ANGLE: -7.3 DEGREES

LOAD TO: BUS-LP223 TRANSF AMPS: 23.4 VOLTAGE DROP: 12. %VD: 2.57
PROJECTED POWER FLOW: 17.0 KW 8.2 KVAR 18.8 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .5 KW .2 KVAR .5 KVA

LOAD FROM: TRM-277MRLP223 FEEDER AMPS: 23.4 VOLTAGE DROP: 4. %VD: .91
PROJECTED POWER FLOW: 17.0 KW 8.2 KVAR 18.8 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-LP225 DESIGN VOLTS: 120 BUS VOLTS: 115 %VD: 3.76
===== PU BUS VOLTAGE: .962 ANGLE: -5.9 DEGREES
NET BRANCH DIVERSITY LOAD: 16.2 KW 7.8 KVAR

LOAD FROM: TRM-2101FLP225 TRANSF AMPS: 89.9 VOLTAGE DROP: 4. %VD: 3.73\$
PROJECTED POWER FLOW: 16.2 KW 7.8 KVAR 18.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .6 KW .3 KVAR .7 KVA

==== BUS: TRM-LTRFSW22 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: .09
===== PU BUS VOLTAGE: .999 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 149.4 KW .0 KVAR

LOAD FROM: TRM-2A25CLTRF FEEDER AMPS: 179.8 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 149.4 KW .0 KVAR 149.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .2 KW .3 KVAR .4 KVA

LOAD FROM: TRM-6A8ALTSW22 FEEDER AMPS: VOLTAGE DROP: 0. %VD: .00
PROJECTED POWER FLOW: .0 KW .0 KVAR .0 KVA PF: .00 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-MBFPOH DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .59
===== PU BUS VOLTAGE: .994 ANGLE: -6.3 DEGREES
NET BRANCH DIVERSITY LOAD: 25.0 KW .0 KVAR

LOAD FROM: TRM-231MMBFPOH FEEDER AMPS: 30.2 VOLTAGE DROP: 2. %VD: .32
PROJECTED POWER FLOW: 25.0 KW .0 KVAR 25.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-MGHD DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .58
===== PU BUS VOLTAGE: .994 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.5 KW .0 KVAR

LOAD FROM: TRM-223DMGHD FEEDER AMPS: 4.2 VOLTAGE DROP: 1. %VD: .31
PROJECTED POWER FLOW: 3.5 KW .0 KVAR 3.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-PAB25(-1) DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.49
===== PU BUS VOLTAGE: .975 ANGLE: -7.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.5 KW 4.1 KVAR

LOAD FROM: TRM-272DRPAB25 FEEDER AMPS: 7.5 VOLTAGE DROP: 1. %VD: .11
PROJECTED POWER FLOW: 4.5 KW 4.1 KVAR 6.1 KVA PF: .74 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-PABEF21 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.16
===== PU BUS VOLTAGE: .978 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 93.0 KW 62.0 KVAR

LOAD FROM: TRM-26C2BPAB21 FEEDER AMPS: 137.4 VOLTAGE DROP: 8. %VD: 1.68
PROJECTED POWER FLOW: 93.0 KW 62.0 KVAR 111.8 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: 1.5 KW 1.2 KVAR 1.9 KVA

==== BUS: TRM-PABHTRDP DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.57
===== PU BUS VOLTAGE: .974 ANGLE: -7.5 DEGREES
NET BRANCH DIVERSITY LOAD: 26.0 KW .0 KVAR

LOAD FROM: TRM-27NT9MPABH FEEDER AMPS: 32.0 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 26.0 KW .0 KVAR 26.0 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-PABSP23 DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.47
===== PU BUS VOLTAGE: .975 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: .9 KW 1.4 KVAR

LOAD FROM: TRM-271KRPAB23 FEEDER AMPS: 2.0 VOLTAGE DROP: 0. %VD: .10
PROJECTED POWER FLOW: .9 KW 1.4 KVAR 1.7 KVA PF: .54 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-PABSTP21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.85
===== PU BUS VOLTAGE: .972 ANGLE: -7.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 2.0 KVAR

LOAD FROM: TRM-275FPABS21 FEEDER AMPS: 3.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-PABSTP22 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.85
===== PU BUS VOLTAGE: .972 ANGLE: -7.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 2.0 KVAR

LOAD FROM: TRM-276KPABS22 FEEDER AMPS: 3.2 VOLTAGE DROP: 2. %VD: .45
PROJECTED POWER FLOW: 1.8 KW 2.0 KVAR 2.7 KVA PF: .68 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-PRHTR21P DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR21S DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: .12
===== PU BUS VOLTAGE: .999 ANGLE: -5.9 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR22P DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR22S DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: -.07
===== PU BUS VOLTAGE: 1.001 ANGLE: -6.0 DEGREES
**** NO LOAD SPECIFIED ****

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-PRHTR23P DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-PRHTR23S DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.19
===== PU BUS VOLTAGE: .988 ANGLE: -6.8 DEGREES
**** NO LOAD SPECIFIED ****

LOAD BUS: TRM-PRHTR24P *** ISOLATED BUS ***

LOAD BUS: TRM-PRHTR24S *** ISOLATED BUS ***

==== BUS: TRM-PWMUP21 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.98
===== PU BUS VOLTAGE: .970 ANGLE: -5.1 DEGREES
NET BRANCH DIVERSITY LOAD: 17.2 KW 12.9 KVAR

LOAD FROM: TRM-26C3HPWP21 FEEDER AMPS: 26.6 VOLTAGE DROP: 12. %VD: 2.51
PROJECTED POWER FLOW: 17.2 KW 12.9 KVAR 21.5 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .7 KW .1 KVAR .7 KVA

==== BUS: TRM-RCPHT DESIGN VOLTS: 480 BUS VOLTS: 476 %VD: .76
===== PU BUS VOLTAGE: .992 ANGLE: -6.3 DEGREES
NET BRANCH DIVERSITY LOAD: 9.3 KW .0 KVAR

LOAD FROM: TRM-234HRCPHT FEEDER AMPS: 11.2 VOLTAGE DROP: 2. %VD: .49
PROJECTED POWER FLOW: 9.3 KW .0 KVAR 9.3 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-RCS DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.84
===== PU BUS VOLTAGE: .982 ANGLE: -6.2 DEGREES

LOAD TO: BUS-RCS TRANSF AMPS: 6.9 VOLTAGE DROP: 4. %VD: .86
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-246BRRCNTS FEEDER AMPS: 6.9 VOLTAGE DROP: 4. %VD: .83
PROJECTED POWER FLOW: 5.1 KW 2.5 KVAR 5.7 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-RVF21 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.32
===== PU BUS VOLTAGE: .977 ANGLE: -5.9 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242HRVF21 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.28
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .3 KW .0 KVAR .3 KVA

==== BUS: TRM-RVF22 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.19
===== PU BUS VOLTAGE: .978 ANGLE: -5.9 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242KRVF22 FEEDER AMPS: 20.5 VOLTAGE DROP: 6. %VD: 1.15
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RVF23 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.08
===== PU BUS VOLTAGE: .979 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-242MRVF23 FEEDER AMPS: 20.5 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RVF24 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.96
===== PU BUS VOLTAGE: .980 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-243HRVF24 FEEDER AMPS: 20.5 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-RVF25 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.95
===== PU BUS VOLTAGE: .981 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 12.9 KW 10.6 KVAR

LOAD FROM: TRM-243KRVF25 FEEDER AMPS: 20.5 VOLTAGE DROP: 4. %VD: .92
PROJECTED POWER FLOW: 12.9 KW 10.6 KVAR 16.7 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-RWSP11 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-RWSP12 DESIGN VOLTS: 480 BUS VOLTS: 491 %VD: -2.38
===== PU BUS VOLTAGE: 1.024 ANGLE: -4.4 DEGREES
NET BRANCH DIVERSITY LOAD: 401.1 KW 274.7 KVAR

LOAD FROM: BUS-RWSP12 FEEDER AMPS: 571.1 VOLTAGE DROP: 1. %VD: .26
PROJECTED POWER FLOW: 401.1 KW 274.7 KVAR 486.2 KVA PF: .83 LAGGING
LOSSES THRU FEEDER: .7 KW 1.2 KVAR 1.4 KVA

==== BUS: TRM-SATAUXL DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.68
===== PU BUS VOLTAGE: .963 ANGLE: -5.8 DEGREES
NET BRANCH DIVERSITY LOAD: 20.2 KW 9.8 KVAR

LOAD FROM: BUS-0801 FEEDER AMPS: 27.9 VOLTAGE DROP: 3. %VD: .63
PROJECTED POWER FLOW: 20.2 KW 9.8 KVAR 22.4 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .2 KW .0 KVAR .2 KVA

==== BUS: TRM-SC27HT DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.73
===== PU BUS VOLTAGE: .983 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 6.6 KW .0 KVAR

LOAD FROM: TRM-213BRSC27H FEEDER AMPS: 8.0 VOLTAGE DROP: 3. %VD: .65
PROJECTED POWER FLOW: 6.6 KW .0 KVAR 6.6 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-SCWSH21 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-SCWSH22 DESIGN VOLTS: 480 BUS VOLTS: 500 %VD: -4.21
===== PU BUS VOLTAGE: 1.042 ANGLE: -3.4 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: TRM-SCWSH23 DESIGN VOLTS: 480 BUS VOLTS: 492 %VD: -2.46
===== PU BUS VOLTAGE: 1.025 ANGLE: -4.3 DEGREES
NET BRANCH DIVERSITY LOAD: 118.4 KW 67.1 KVAR

LOAD FROM: BUS-SCWSH23 FEEDER AMPS: 159.7 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 118.4 KW 67.1 KVAR 136.1 KVA PF: .87 LAGGING
LOSSES THRU FEEDER: .2 KW .2 KVAR .2 KVA

==== BUS: TRM-SFP21 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.90
===== PU BUS VOLTAGE: .981 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 75.3 KW 47.2 KVAR

LOAD FROM: TRM-26C1ASF21 FEEDER AMPS: 108.9 VOLTAGE DROP: 7. %VD: 1.42
PROJECTED POWER FLOW: 75.3 KW 47.2 KVAR 88.9 KVA PF: .85 LAGGING
LOSSES THRU FEEDER: 1.0 KW .8 KVAR 1.3 KVA

==== BUS: TRM-SHT21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.62
===== PU BUS VOLTAGE: .984 ANGLE: -7.0 DEGREES

LOAD TO: BUS-SHT21 TRANSF AMPS: 27.5 VOLTAGE DROP: 14. %VD: 2.90
PROJECTED POWER FLOW: 18.2 KW 13.3 KVAR 22.5 KVA PF: .81 LAGGING
LOSSES THRU TRANSF: .7 KW .2 KVAR .7 KVA

LOAD FROM: TRM-294BRSH21 FEEDER AMPS: 27.5 VOLTAGE DROP: 1. %VD: .15
PROJECTED POWER FLOW: 18.2 KW 13.3 KVAR 22.5 KVA PF: .81 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1
Computer Run: LF SI (Total Auto + Manual) Case 1
Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-SHT22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.64
===== PU BUS VOLTAGE: .984 ANGLE: -7.0 DEGREES

LOAD TO: BUS-SHT22 TRANSF AMPS: 26.4 VOLTAGE DROP: 15. %VD: 3.06\$
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .7 KW .3 KVAR .7 KVA

LOAD FROM: TRM-294BLSHT22 FEEDER AMPS: 26.4 VOLTAGE DROP: 1. %VD: .16
PROJECTED POWER FLOW: 21.7 KW .3 KVAR 21.7 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-SPHTR DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 1.98
===== PU BUS VOLTAGE: .980 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: TRM-291ERSPHTR FEEDER AMPS: 12.2 VOLTAGE DROP: 2. %VD: .51
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF: .80 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-STRIPH24 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.92
===== PU BUS VOLTAGE: .971 ANGLE: -7.5 DEGREES

LOAD TO: BUS-STRIPH24 TRANSF AMPS: 17.4 VOLTAGE DROP: 9. %VD: 1.84
PROJECTED POWER FLOW: 14.1 KW .1 KVAR 14.1 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .3 KW .1 KVAR .3 KVA

LOAD FROM: TRM-274BRRSH24 FEEDER AMPS: 17.4 VOLTAGE DROP: 3. %VD: .57
PROJECTED POWER FLOW: 14.1 KW .1 KVAR 14.1 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-STRIPHTR23 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.80
===== PU BUS VOLTAGE: .972 ANGLE: -7.5 DEGREES

LOAD TO: BUS-STRIPHTR23 TRANSF AMPS: 16.7 VOLTAGE DROP: 8. %VD: 1.77
PROJECTED POWER FLOW: 13.5 KW .1 KVAR 13.5 KVA PF: 1.00 UNITY
LOSSES THRU TRANSF: .2 KW .1 KVAR .3 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: TRM-274BLRSH23 FEEDER AMPS: 16.7 VOLTAGE DROP: 2. %VD: .46
PROJECTED POWER FLOW: 13.5 KW .1 KVAR 13.5 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-SWPHTRS DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.38
===== PU BUS VOLTAGE: .986 ANGLE: -6.4 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW .0 KVAR

LOAD FROM: TRM-211DLSWPH FEEDER AMPS: 2.9 VOLTAGE DROP: 1. %VD: .30
PROJECTED POWER FLOW: 2.4 KW .0 KVAR 2.4 KVA PF: 1.00 UNITY
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-SWPSP26 DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.18
===== PU BUS VOLTAGE: .988 ANGLE: -6.3 DEGREES

LOAD FROM: TRM-213HSWSP26 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-SWVPSP27 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .51
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES

LOAD FROM: TRM-236MSWSP27 FEEDER AMPS: 1.0 VOLTAGE DROP: 0. %VD: .06
PROJECTED POWER FLOW: .5 KW .8 KVAR .9 KVA PF: .51 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-TRS-11 DESIGN VOLTS: 480 BUS VOLTS: 498 %VD: -3.82
===== PU BUS VOLTAGE: 1.038 ANGLE: -3.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-TRS-PANEL FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-TRS-12 DESIGN VOLTS: 480 BUS VOLTS: 498 %VD: -3.82
===== PU BUS VOLTAGE: 1.038 ANGLE: -3.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 4.3 KVAR

LOAD FROM: TRM-TRS-PANEL FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-TRS-PANEL DESIGN VOLTS: 480 BUS VOLTS: 499 %VD: -4.01
===== PU BUS VOLTAGE: 1.040 ANGLE: -3.3 DEGREES

LOAD FROM: BUS-212IHFEED FEEDER AMPS: 14.0 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 8.7 KW 8.5 KVAR 12.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-TRS-11 FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

LOAD TO: TRM-TRS-12 FEEDER AMPS: 7.0 VOLTAGE DROP: 1. %VD: .19
PROJECTED POWER FLOW: 4.3 KW 4.3 KVAR 6.1 KVA PF: .71 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-UATAL DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.76
===== PU BUS VOLTAGE: .962 ANGLE: -6.5 DEGREES
NET BRANCH DIVERSITY LOAD: 27.0 KW 13.1 KVAR

LOAD FROM: TRM-292BLUATAL FEEDER AMPS: 37.4 VOLTAGE DROP: 11. %VD: 2.28
PROJECTED POWER FLOW: 27.0 KW 13.1 KVAR 30.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .8 KW .0 KVAR .8 KVA

==== BUS: TRM-VRC2 DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: .47
===== PU BUS VOLTAGE: .995 ANGLE: -6.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.3 KW .7 KVAR

LOAD FROM: TRM-232CVRC2 FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .20
PROJECTED POWER FLOW: 1.3 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-VREGINV DESIGN VOLTS: 480 BUS VOLTS: 474 %VD: 1.18
===== PU BUS VOLTAGE: .988 ANGLE: -6.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.3 KW .7 KVAR

LOAD FROM: TRM-244DVRINV FEEDER AMPS: 1.8 VOLTAGE DROP: 1. %VD: .18
PROJECTED POWER FLOW: 1.3 KW .7 KVAR 1.5 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-WCAS DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.89
===== PU BUS VOLTAGE: .981 ANGLE: -5.9 DEGREES

LOAD TO: BUS-WCAS TRANSF AMPS: 30.6 VOLTAGE DROP: 18. %VD: 3.81\$
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU TRANSF: .9 KW .4 KVAR 1.0 KVA

LOAD FROM: TRM-234FWCAS FEEDER AMPS: 30.6 VOLTAGE DROP: 8. %VD: 1.62
PROJECTED POWER FLOW: 22.5 KW 10.8 KVAR 25.0 KVA PF: .90 LAGGING
LOSSES THRU FEEDER: .4 KW .0 KVAR .4 KVA

==== BUS: TRM-WEF21 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.73
===== PU BUS VOLTAGE: .983 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244HWEF21 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .67
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WEF213 DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: .52
===== PU BUS VOLTAGE: .995 ANGLE: -6.0 DEGREES
NET BRANCH DIVERSITY LOAD: 1.5 KW 1.8 KVAR

LOAD FROM: TRM-26C5AEF213 FEEDER AMPS: 2.8 VOLTAGE DROP: 0. %VD: .05
PROJECTED POWER FLOW: 1.5 KW 1.8 KVAR 2.4 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-WEF216 DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.81
===== PU BUS VOLTAGE: .982 ANGLE: -6.8 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: TRM-294HWEF216 FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .23
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM-WEF22 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.58
===== PU BUS VOLTAGE: .984 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244KWEF22 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .52
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WEF23 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.49
===== PU BUS VOLTAGE: .985 ANGLE: -6.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-244MWEF23 FEEDER AMPS: 13.6 VOLTAGE DROP: 2. %VD: .43
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WEF24 DESIGN VOLTS: 480 BUS VOLTS: 473 %VD: 1.53
===== PU BUS VOLTAGE: .985 ANGLE: -6.2 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243BWEF24 FEEDER AMPS: 13.6 VOLTAGE DROP: 2. %VD: .47
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: TRM-WEF25 DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.67
===== PU BUS VOLTAGE: .983 ANGLE: -6.1 DEGREES
NET BRANCH DIVERSITY LOAD: 8.6 KW 7.1 KVAR

LOAD FROM: TRM-243DWEF25 FEEDER AMPS: 13.6 VOLTAGE DROP: 3. %VD: .61
PROJECTED POWER FLOW: 8.6 KW 7.1 KVAR 11.1 KVA PF: .77 LAGGING
LOSSES THRU FEEDER: .1 KW .0 KVAR .1 KVA

==== BUS: TRM-WHTPSP22 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.60
===== PU BUS VOLTAGE: .974 ANGLE: -7.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.2 KW 1.4 KVAR

LOAD FROM: TRM-272KRWHT22 FEEDER AMPS: 2.3 VOLTAGE DROP: 1. %VD: .22
PROJECTED POWER FLOW: 1.2 KW 1.4 KVAR 1.9 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

==== BUS: TRM26AAM3CIA DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.66
===== PU BUS VOLTAGE: .973 ANGLE: -6.9 DEGREES
NET BRANCH DIVERSITY LOAD: 1.7 KW 2.1 KVAR

LOAD FROM: BUS-26AAM3CIA FEEDER AMPS: 3.3 VOLTAGE DROP: 1. %VD: .13
PROJECTED POWER FLOW: 1.7 KW 2.1 KVAR 2.7 KVA PF: .64 LAGGING
LOSSES THRU FEEDER: .0 KW .0 KVAR .0 KVA

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUCHANAN 138kV	138000.00	1.0540	BUS-00001	345000.00	.0000
BUS-00002	345000.00	.0000	BUS-00003	345000.00	.0000
BUS-0000BUCHAN	345000.00	.0000	BUS-00001	22000.00	.0000
BUS-00002	22000.00	.0000	BUS-00003	22000.00	.0000
BUS-00004	22000.00	.0000	BUS-00005	22000.00	.0000
BUS-00006	22000.00	.0000	BUS-00100	6900.00	.0000
BUS-00101	6900.00	.0000	BUS-00102	6900.00	.0000
BUS-00104	6900.00	1.0426	BUS-00105	6900.00	1.0428
BUS-00106	6900.00	.0000	BUS-00107	6900.00	1.0425
BUS-00108	6900.00	.0000	BUS-00109	6900.00	1.0426
BUS-00110	6900.00	1.0426	BUS-00111	6900.00	.0000
BUS-00112	6900.00	1.0428	BUS-00113	6900.00	.0000
BUS-00114	6900.00	1.0427	BUS-00115	6900.00	1.0428
BUS-00134RW1	6900.00	1.0425	BUS-00200	6900.00	1.0458
BUS-00201	6900.00	1.0428	BUS-00202	6900.00	1.0427
BUS-00203	6900.00	1.0428	BUS-0798	480.00	.9960
BUS-0799	480.00	.9960	BUS-0801	480.00	.9695
BUS-0804	480.00	.9905	BUS-1	6900.00	1.0425
BUS-1079	138000.00	1.0536	BUS-1130	120.00	.9388
BUS-120VDP	120.00	.9555	BUS-132CP21	6900.00	1.0425
BUS-133CWP21	6900.00	1.0425	BUS-2	6900.00	1.0426
BUS-212IHFEED	480.00	1.0419	BUS-2131EHCP12	480.00	1.0262
BUS-2131LSCPWR	480.00	1.0262	BUS-2131PSCHTR	480.00	1.0262
BUS-213HTP21A	480.00	1.0262	BUS-21RW1	480.00	1.0421
BUS-223SST#2	6900.00	1.0426	BUS-224CWP23	6900.00	1.0426
BUS-22RW3	480.00	1.0265	BUS-245DRIAD	208.00	.9547
BUS-255ERA	480.00	.9854	BUS-255ERB	480.00	.9855
BUS-26AAL3DP1	480.00	.9762	BUS-26AAL3DP1B	480.00	.9749
BUS-26AAL4H2O2	480.00	.9762	BUS-26AAM3CIA	480.00	.9747
BUS-26BBA2SREF	480.00	.9716	BUS-26BBB3DP2	480.00	.9727
BUS-26BBB3DP2B	480.00	.9722	BUS-26BBB4H2O2	480.00	.9727
BUS-2A	480.00	1.0007	BUS-3	6900.00	1.0426
BUS-31ARW3	6900.00	1.0426	BUS-32CWP26	6900.00	1.0426
BUS-33SST#3	6900.00	1.0426	BUS-3A	480.00	.9988
BUS-4	6900.00	1.0428	BUS-410CP23	6900.00	1.0428
BUS-411CWP24	6900.00	1.0428	BUS-5	6900.00	1.0427
BUS-518SST#5	6900.00	1.0427	BUS-519CWP25	6900.00	1.0427
BUS-5A	480.00	.9881	BUS-6	6900.00	1.0428
BUS-616CWP22	6900.00	1.0428	BUS-617SST#6	6900.00	1.0428

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUS-6A	480.00	.9813	BUS-BAFWB33	480.00	.9855
BUS-BAFWB34	480.00	.9855	BUS-CCRVDP21	480.00	.9912
BUS-CO2U	120.00	.9574	BUS-EDG23AL(A)	208.00	.9672
BUS-EDG23AL(B)	480.00	.9662	BUS-EPV21	208.00	.9617
BUS-EPX3	208.00	.9470	BUS-HTTR22	208.00	.9598
BUS-HTTRC21	208.00	.9718	BUS-HTXFMR24	208.00	.9562
BUS-LP21	120.00	.7884	BUS-LP223	208.00	.9418
BUS-MCC 212	480.00	1.0421	BUS-MCC 213	480.00	1.0265
BUS-R45DP	208.00	.9458	BUS-RCS	120.00	.9730
BUS-RP1-C2	120.00	.9711	BUS-RWSP11	480.00	1.0421
BUS-RWSP12	480.00	1.0265	BUS-SCWSH21	480.00	1.0421
BUS-SCWSH22	480.00	1.0421	BUS-SCWSH23	480.00	1.0265
BUS-SHT21	208.00	.9548	BUS-SHT22	208.00	.9530
BUS-STRIPH24	208.00	.9524	BUS-STRIPHTR23	208.00	.9543
BUS-WCAS	208.00	.9430	HT-LTG-22	480.00	.9852
HT-RW1	6900.00	1.0425	HT-RW3	6900.00	1.0417
HT-SST#2	6900.00	1.0423	HT-SST#3	6900.00	1.0423
HT-SST#5	6900.00	1.0421	HT-SST#6	6900.00	1.0423
LT-AUTO-XFMR	6900.00	.0000	LT-LTG-22	208.00	.9710
LT-LTG23	208.00	.9778	LT-RW1	480.00	1.0421
LT-RW3	480.00	1.0266	LT-SST#2	480.00	1.0013
LT-SST#3	480.00	.9994	LT-SST#5	480.00	.9889
LT-SST#6	480.00	.9822	LT-XFMR-DP2	120.00	.9649
MCC 21	480.00	.9892	MCC 210	480.00	.9998
MCC 212	480.00	1.0419	MCC 213	480.00	1.0262
MCC 22	480.00	.9973	MCC 23	480.00	.9973
MCC 25	480.00	.9956	MCC 26AA	480.00	.9762
MCC 26BB	480.00	.9727	MCC 27-1	480.00	.9766
MCC 27-2	480.00	.9766	MCC 27-3	480.00	.0000
MCC 28	480.00	.9881	MCC 28A	480.00	1.0007
MCC-211	480.00	.9988	MCC-24	480.00	.9900
MCC-24A	480.00	.9908	MCC-26A	480.00	.9769
MCC-26B	480.00	.9730	MCC-26C	480.00	.9953
MCC-27	480.00	.9766	MCC-27A	480.00	.9768
MCC-29	480.00	.9853	MCC-29A	480.00	.9856
MT-AFP21	480.00	.9835	MT-AFP23	480.00	.9676
MT-CCP21	480.00	.9693	MT-CCP22	480.00	.9769
MT-CCP23	480.00	.9582	MT-CHP21	480.00	.9760
MT-CHP22	480.00	.9988	MT-CHP23	480.00	.9813

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
MT-CP21	6900.00	1.0410	MT-CP23	6900.00	1.0411
MT-CRF21	480.00	.9776	MT-CRF22	480.00	.9654
MT-CRF23	480.00	.9733	MT-CRF24	480.00	.9715
MT-CRF25	480.00	.9494	MT-CSP21	480.00	.9717
MT-CSP22	480.00	.9646	MT-CWP21	6900.00	1.0413
MT-CWP22	6900.00	1.0414	MT-CWP23	6900.00	1.0413
MT-CWP24	6900.00	1.0412	MT-CWP25	6900.00	1.0412
MT-CWP26	6900.00	1.0411	MT-RHR21	480.00	.9851
MT-RHR22	480.00	.9670	MT-RMG21	480.00	1.0007
MT-RMG22	480.00	.9813	MT-RP21	480.00	.9881
MT-RP22	480.00	.9813	MT-SAC	480.00	.9881
MT-SIP21	480.00	.9756	MT-SIP22	480.00	.9876
MT-SIP23	480.00	.9681	MT-SWP21	480.00	.9881
MT-SWP22	480.00	.9965	MT-SWP23	480.00	.9813
MT-SWP24	480.00	.9655	MT-SWP25	480.00	.9983
MT-SWP26	480.00	.9608	MT-TAO	480.00	.0000
PR HTR DP-21	480.00	.9988	PR HTR DP-22	480.00	1.0007
PR HTR DP-23	480.00	.9881	PR HTR DP-24	480.00	.0000
SPLICE BOX	6900.00	.0000	TRM-120VDP	480.00	.9912
TRM-2101FLP225	480.00	.9998	TRM-211DLSWPH	480.00	.9892
TRM-211DRREC21	480.00	.9892	TRM-211FLP21	480.00	.9892
TRM-2131EHCP12	480.00	1.0251	TRM-213BRSC27H	480.00	.9892
TRM-213HSWSP26	480.00	.9888	TRM-213HTP21A	480.00	1.0234
TRM-213MHTTR21	480.00	.9892	TRM-213SC28HTR	480.00	1.0213
TRM-213SC28PWR	480.00	1.0212	TRM-221MLCO2U	480.00	.9973
TRM-223DMGHD	480.00	.9973	TRM-224BFLBC	480.00	.9902
TRM-224FDPSP21	480.00	.9963	TRM-231MMBFPOH	480.00	.9973
TRM-232CVRC2	480.00	.9973	TRM-233MCPSP21	480.00	.9970
TRM-234FWCAS	480.00	.9973	TRM-234HRCPTH	480.00	.9973
TRM-236BCPSP24	480.00	.9965	TRM-236MSWSP27	480.00	.9955
TRM-242BRSATAL	480.00	.9900	TRM-242FIPCF22	480.00	.9894
TRM-242HRVF21	480.00	.9896	TRM-242KRVF22	480.00	.9896
TRM-242MRVF23	480.00	.9896	TRM-243BWEF24	480.00	.9894
TRM-243DWEF25	480.00	.9894	TRM-243FIPCF24	480.00	.9894
TRM-243HRVF24	480.00	.9896	TRM-243KRVF25	480.00	.9897
TRM-244DVRINV	480.00	.9900	TRM-244FIPCF26	480.00	.9894
TRM-244HWEF21	480.00	.9894	TRM-244KWEF22	480.00	.9894
TRM-244MWEF23	480.00	.9894	TRM-245DRIAD	480.00	.9900
TRM-245MCLGWP2	480.00	.9897	TRM-246BRRCNTS	480.00	.9900

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-24A1AMCC24	480.00	.9908	TRM-24A2A-CC2	480.00	.9838
TRM-24A2AR45DP	480.00	.9908	TRM-24A2CED22A	480.00	.9908
TRM-24A2EBCH22	480.00	.9908	TRM-24A3CCMP22	480.00	.9906
TRM-24A4AIAC22	480.00	.9902	TRM-255ELHTR22	480.00	.9956
TRM-255ER	480.00	.9859	TRM-26A1BEF21	480.00	.9764
TRM-26A1DEPV21	480.00	.9769	TRM-26A1DRDP1	480.00	.9759
TRM-26A6HEPX3	480.00	.9769	TRM-26A6HRBAHT	480.00	.9769
TRM-26A6KRCP21	480.00	.9763	TRM-26AAL4H2O2	480.00	.9731
TRM-26B1BEF22	480.00	.9725	TRM-26B5KRAC22	480.00	.9729
TRM-26B5MRLEDV	480.00	.9727	TRM-26B5MRREDV	480.00	.9725
TRM-26B6BRREDA	480.00	.9722	TRM-26B7DHVAC	480.00	.9730
TRM-26B7MBAP22	480.00	.9727	TRM-26BBA2SREF	480.00	.9696
TRM-26BBB3DP2	120.00	.9636	TRM-26BBB4H2O2	480.00	.9693
TRM-26C1ASFP21	480.00	.9952	TRM-26C1DBF21	480.00	.9912
TRM-26C1HBUVF	480.00	.9912	TRM-26C1M120DP	480.00	.9912
TRM-26C2BPAB21	480.00	.9952	TRM-26C3ABT21H	480.00	.9953
TRM-26C3FBC23	480.00	.9953	TRM-26C3HPWP21	480.00	.9953
TRM-26C3NBAP21	480.00	.9952	TRM-26C4FVDP21	480.00	.9953
TRM-26C5AEF213	480.00	.9953	TRM-26C5LGVP2	480.00	.9950
TRM-271BRRFCVE	480.00	.9766	TRM-271KRPAB23	480.00	.9763
TRM-271MLRBALE	480.00	.9762	TRM-271MRRHT24	480.00	.9766
TRM-272DRPAB25	480.00	.9762	TRM-272KRWHT22	480.00	.9762
TRM-272MRRGS21	480.00	.9766	TRM-273DRBA22H	480.00	.9766
TRM-274BLRSH23	480.00	.9766	TRM-274BRRSH24	480.00	.9766
TRM-275FPABS21	480.00	.9760	TRM-276KPABS22	480.00	.9760
TRM-277MRLP223	480.00	.9766	TRM-278BLAFWPH	480.00	.9766
TRM-278DBAPRHT	480.00	.0000	TRM-27A1AMCC27	480.00	.9768
TRM-27A4EBC24	480.00	.9768	TRM-27A5E118V	480.00	.9768
TRM-27NT9MPABH	480.00	.9766	TRM-291ERSPHTR	480.00	.9853
TRM-292BLUATAL	480.00	.9853	TRM-294BLSHT22	480.00	.9853
TRM-294BRSH21	480.00	.9853	TRM-294HWEF216	480.00	.9842
TRM-294MDGBH	480.00	.9853	TRM-296BHRSSP1	480.00	.9850
TRM-29A1AMC29	480.00	.9856	TRM-29A3CIAC21	480.00	.9847
TRM-29A3EED21A	480.00	.9856	TRM-29A3GEF215	480.00	.9845
TRM-29A3JBCH21	480.00	.9856	TRM-29A3LIAC21	480.00	.9853
TRM-2A21CMC28A	480.00	1.0007	TRM-2A22APHBG	480.00	1.0007
TRM-2A22BMC24A	480.00	1.0004	TRM-2A22CCCP22	480.00	1.0006
TRM-2A23CRMG21	480.00	1.0007	TRM-2A24ASWP22	480.00	.9965
TRM-2A24BSIP22	480.00	1.0005	TRM-2A24CMC210	480.00	1.0007

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-2A25ASWP25	480.00	1.0005	TRM-2A25BMC23	480.00	1.0007
TRM-2A25CLTRF	480.00	1.0007	TRM-2A26CCRF23	480.00	1.0005
TRM-2AMC21	480.00	1.0007	TRM-2ATIE3A&6A	480.00	.9988
TRM-3A1CMCC211	480.00	.9988	TRM-3A2AMCC26C	480.00	.9988
TRM-3A2BMCC25	480.00	.9988	TRM-3A2CLTSW24	480.00	.9988
TRM-3A3ACRF24	480.00	.9988	TRM-3A3BMCC22	480.00	.9988
TRM-3A3CSWP25	480.00	.9983	TRM-3A4APHBG21	480.00	.9988
TRM-3A4CSIP22	480.00	.9876	TRM-3A5ASWP22	480.00	.9988
TRM-3A5BCHP22	480.00	.9988	TRM-3A5CRHR21	480.00	.9988
TRM-3A6CAFP21	480.00	.9988	TRM-3ATIE2A&6A	480.00	.9881
TRM-5A15ASIP21	480.00	.9879	TRM-5A15BCSP21	480.00	.9879
TRM-5A15CCRF21	480.00	.9879	TRM-5A16APHBG	480.00	.9881
TRM-5A16BMCC28	480.00	.9881	TRM-5A16CRP21	480.00	.9881
TRM-5A17ACCP21	480.00	.9879	TRM-5A17BMC26A	480.00	.9880
TRM-5A17CLTS21	480.00	.9881	TRM-5A18ACRF22	480.00	.9879
TRM-5A18BCHP21	480.00	.9880	TRM-5A18CSAC	480.00	.9881
TRM-5A19AMC29A	480.00	.9879	TRM-5A19BSWP24	480.00	.9879
TRM-5A19CSWP21	480.00	.9881	TRM-6A10ASIP23	480.00	.9811
TRM-6A10BMC27A	480.00	.9812	TRM-6A10CCRF25	480.00	.9811
TRM-6A11ARHR22	480.00	.9811	TRM-6A11ARP22	480.00	.9813
TRM-6A11BCHP23	480.00	.9813	TRM-6A12ACSP22	480.00	.9811
TRM-6A12BTAO	480.00	.0000	TRM-6A12CCCP23	480.00	.9812
TRM-6A7BT2A&3A	480.00	.9988	TRM-6A7CRM22	480.00	.9813
TRM-6A8ALTSW22	480.00	.9991	TRM-6A8BSWP26	480.00	.9811
TRM-6A8CSWP23	480.00	.9813	TRM-6A9APHC24	480.00	.0000
TRM-6A9BMC26B	480.00	.9812	TRM-6A9CAFP23	480.00	.9810
TRM-AAFWBF217	480.00	.9848	TRM-AAFWBF218	480.00	.9849
TRM-AAFWBF219	480.00	.9849	TRM-ACCP21	480.00	.9652
TRM-ACCP22	480.00	.9623	TRM-AFWB32	480.00	.9849
TRM-AFWB33	480.00	.9848	TRM-AFWB34	480.00	.9848
TRM-AFWBF217	480.00	.9844	TRM-AFWBF218	480.00	.9845
TRM-AFWBF219	480.00	.9845	TRM-AFWPHH	480.00	.9459
TRM-BAFWB32	480.00	.9855	TRM-BAHT	480.00	.9748
TRM-BALER	480.00	.9756	TRM-BAPP22	480.00	.9614
TRM-BAPRHR	480.00	.0000	TRM-BAT22HTRS	480.00	.9723
TRM-BATCH21	480.00	.9752	TRM-BATCH22	480.00	.9745
TRM-BATCH23	480.00	.9930	TRM-BATCH24	480.00	.9394
TRM-BATK21HTR	480.00	.9682	TRM-BAXFERP21	480.00	.9605
TRM-BF21	480.00	.9906	TRM-BKR-SST#2	480.00	1.0011

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-BKR-SST#3	480.00	.9992	TRM-BKR-SST#5	480.00	.9886
TRM-BKR-SST#6	480.00	.9819	TRM-BUVF	480.00	.9907
TRM-CLGWP22	480.00	.9823	TRM-CO2U	480.00	.9887
TRM-CPREC21	480.00	.9871	TRM-CPSP212	480.00	.9959
TRM-CPSP24	480.00	.9958	TRM-CRHVACDP	480.00	.9423
TRM-DGBH	480.00	.9637	TRM-DGVDP2	480.00	.9938
TRM-DISTPNL1	480.00	.9714	TRM-DPSP21	480.00	.9948
TRM-EBB1-S	120.00	.9518	TRM-EDG21AL	480.00	.9852
TRM-EDG22AL	480.00	.9903	TRM-EDG23AL	480.00	.9692
TRM-EDGVDP1	480.00	.9506	TRM-EDN2 (N)	480.00	.9810
TRM-EDVDP1	480.00	.9333	TRM-EF215	480.00	.9819
TRM-EPF5	120.00	.9481	TRM-EPV21	480.00	.9747
TRM-EPX3	480.00	.9733	TRM-ETEF21	480.00	.9702
TRM-ETEF22	480.00	.9663	TRM-FAN321	480.00	.9938
TRM-FCVENC	480.00	.9542	TRM-FLBC	480.00	.9874
TRM-GASST21	480.00	.9738	TRM-HRSSP1	480.00	.9670
TRM-HTRC24	480.00	.9724	TRM-HTTR22	480.00	.9860
TRM-HTTRC21	480.00	.9831	TRM-IAC21	480.00	.9772
TRM-IAC22	480.00	.9747	TRM-IACCWP22	480.00	.9862
TRM-IACLGCP21	480.00	.9814	TRM-IAD	480.00	.9892
TRM-INV 24	480.00	.9399	TRM-IPHCF22	480.00	.9803
TRM-IPHCF24	480.00	.9801	TRM-IPHCF26	480.00	.9807
TRM-LP21	480.00	.9834	TRM-LP223	480.00	.9675
TRM-LP225	120.00	.9624	TRM-LTRFSW22	480.00	.9991
TRM-MBFPOH	480.00	.9941	TRM-MGHD	480.00	.9942
TRM-PAB25 (-1)	480.00	.9751	TRM-PABEF21	480.00	.9784
TRM-PABHTRDP	480.00	.9743	TRM-PABSP23	480.00	.9753
TRM-PABSTP21	480.00	.9715	TRM-PABSTP22	480.00	.9715
TRM-PRHTR21P	480.00	.9988	TRM-PRHTR21S	480.00	.9988
TRM-PRHTR22P	480.00	1.0007	TRM-PRHTR22S	480.00	1.0007
TRM-PRHTR23P	480.00	.9881	TRM-PRHTR23S	480.00	.9881
TRM-PRHTR24P	480.00	.0000	TRM-PRHTR24S	480.00	.0000
TRM-PWMUP21	480.00	.9702	TRM-RCPHT	480.00	.9924
TRM-RCS	480.00	.9816	TRM-RVF21	480.00	.9768
TRM-RVF22	480.00	.9781	TRM-RVF23	480.00	.9792
TRM-RVF24	480.00	.9804	TRM-RVF25	480.00	.9805
TRM-RWSP11	480.00	1.0421	TRM-RWSP12	480.00	1.0238
TRM-SATAUXL	480.00	.9632	TRM-SC27HT	480.00	.9827
TRM-SCWSH21	480.00	1.0421	TRM-SCWSH22	480.00	1.0421

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
TRM-SCWSH23	480.00	1.0246	TRM-SFP21	480.00	.9810
TRM-SHT21	480.00	.9838	TRM-SHT22	480.00	.9836
TRM-SPHTR	480.00	.9802	TRM-STRIPH24	480.00	.9708
TRM-STRIPHTR23	480.00	.9720	TRM-SWPHTRS	480.00	.9862
TRM-SWPSP26	480.00	.9882	TRM-SWVPSP27	480.00	.9949
TRM-TRS-11	480.00	1.0382	TRM-TRS-12	480.00	1.0382
TRM-TRS-PANEL	480.00	1.0401	TRM-UATAL	480.00	.9624
TRM-VRC2	480.00	.9953	TRM-VREGINV	480.00	.9882
TRM-WCAS	480.00	.9811	TRM-WEF21	480.00	.9827
TRM-WEF213	480.00	.9948	TRM-WEF216	480.00	.9819
TRM-WEF22	480.00	.9842	TRM-WEF23	480.00	.9851
TRM-WEF24	480.00	.9847	TRM-WEF25	480.00	.9833
TRM-WHTPSP22	480.00	.9740	TRM26AAM3CIA	480.00	.9734

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUCHANAN 138kv	BUS-1079	FDR	.04	91.76	23116.82	UNKNOWN
BUS-00001	BUS-0001	TX2	.04	91.76	23116.82	4.27
BUS-00001	BUS-00002	FDR	.00	.00	.00	UNKNOWN
BUS-00003	BUS-0003	TX2	.00	.00	.00	.00
BUS-0005	BUS-00100	TX2	.00	.00	.00	.00
BUS-0005	BUS-0002	FDR	.00	.00	.00	UNKNOWN
BUS-00104	BUS-00107	FDR	.01	288.62	3596.38	24.05
BUS-00104	BUS-00109	FDR	.00	251.80	3137.58	20.98
BUS-00105	BUS-00112	FDR	.00	287.66	3584.87	23.97
BUS-00105	BUS-00110	FDR	.01	305.33	3805.10	25.44
BUS-00107	BUS-1	FDR	.00	288.62	3595.96	14.43
BUS-00109	BUS-2	FDR	.00	251.80	3137.57	12.59
BUS-00110	BUS-3	FDR	.00	305.33	3804.63	15.27
BUS-00112	BUS-4	FDR	.00	287.66	3584.86	14.38
BUS-00114	BUS-00104	FDR	.01	540.41	6734.09	27.02
BUS-00115	BUS-6	FDR	.00	592.99	7390.36	29.65
BUS-00115	BUS-00105	FDR	.01	592.99	7390.36	29.65
BUS-00134RW1	HT-RW1	FDR	.00	.98	12.16	.43
BUS-00200	BUS-00201	FDR	.29	1761.74	22018.11	44.04
BUS-00201	BUS-00202	FDR	.02	844.32	10522.81	42.22
BUS-00201	BUS-00203	FDR	.00	917.44	11434.19	45.87
BUS-00202	BUS-5	FDR	.00	844.32	10521.25	42.22

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-00203	BUS-6	FDR	.00	917.44	11434.10	45.87
BUS-0798	TRM-CPSP212	FDR	.01	1.16	.96	4.64
BUS-0799	TRM-CPSP24	FDR	.02	2.02	1.67	8.09
BUS-0801	TRM-SATAUXL	FDR	.63	27.97	22.55	55.94
BUS-0804	TRM-HTTR22	FDR	.45	31.58	26.01	48.59
BUS-1	BUS-132CP21	FDR	.00	202.24	2519.65	16.85
BUS-1	BUS-133CWP21	FDR	.00	89.43	1114.16	7.45
BUS-1	BUS-00134RW1	FDR	.00	.98	12.16	.08
BUS-1079	BUS-00200	TX2	.79	91.76	23109.14	53.74
BUS-132CP21	MT-CP21	FDR	.14	202.24	2519.65	61.28
BUS-133CWP21	MT-CWP21	FDR	.12	89.43	1114.16	17.53
BUS-2	BUS-223SST#2	FDR	.00	167.17	2083.04	13.93
BUS-2	BUS-224CWP23	FDR	.00	89.42	1114.23	7.45
BUS-212IHFEED	TRM-TRS-PANEL	FDR	.18	14.03	12.16	28.07
BUS-2131EHCP12	TRM-2131EHCP12	FDR	.10	1.52	1.30	6.09
BUS-2131LSCPWR	TRM-213SC28PWR	FDR	.50	3.53	3.01	10.10
BUS-2131PSCHTR	TRM-213SC28HTR	FDR	.48	3.53	3.01	10.09
BUS-213HTP21A	TRM-213HTP21A	FDR	.27	11.75	10.03	10.22
BUS-21RW1	BUS-MCC 212	FDR	.00	14.03	12.16	1.86
BUS-223SST#2	HT-SST#2	FDR	.03	167.17	2083.04	32.78
BUS-224CWP23	MT-CWP23	FDR	.13	89.42	1114.23	17.53
BUS-22RW3	BUS-RWSP12	FDR	.00	571.14	487.40	113.32
BUS-22RW3	BUS-SCWSH23	FDR	.00	159.78	136.35	31.70
BUS-22RW3	BUS-MCC 213	FDR	.00	20.23	17.27	2.68
BUS-255ERA	TRM-AAFWBF217	FDR	.07	7.40	6.06	UNKNOWN
BUS-255ERA	TRM-AAFWBF218	FDR	.06	6.40	5.24	UNKNOWN
BUS-255ERA	TRM-AAFWBF219	FDR	.06	6.40	5.24	UNKNOWN
BUS-255ERB	TRM-BAFWB32	FDR	.00	8.55	7.00	UNKNOWN
BUS-255ERB	BUS-BAFWB33	FDR	.00	10.69	8.76	UNKNOWN
BUS-255ERB	BUS-BAFWB34	FDR	.00	10.69	8.76	UNKNOWN
BUS-26AAL3DP1	BUS-26AAL3DP1B	FDR	.12	27.91	22.65	24.27
BUS-26AAL3DP1B	TRM-EBB1-S	TX2	2.32	27.91	22.62	50.27
BUS-26AAL4H2O2	TRM-26AAL4H2O2	FDR	.31	1.85	1.50	7.42
BUS-26AAM3CIA	TRM26AAM3CIA	FDR	.13	3.35	2.71	13.39
BUS-26BBA2SREF	TRM-26BBA2SREF	FDR	.20	5.35	4.32	15.28
BUS-26BBB3DP2	BUS-26BBB3DP2B	FDR	.04	9.99	8.08	8.68
BUS-26BBB3DP2B	LT-XFMR-DP2	TX2	.73	9.99	8.07	17.94
BUS-26BBB4H2O2	TRM-26BBB4H2O2	FDR	.33	1.86	1.51	7.45
BUS-2A	TRM-2A26CCRF23	FDR	.02	354.62	295.04	67.16

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-2A	TRM-2A22CCCP22	FDR	.02	314.56	261.71	71.49
BUS-2A	TRM-2A25ASWP25	FDR	.02	382.22	318.01	75.84
BUS-2A	TRM-2A24BSIP22	FDR	.02	423.05	351.97	70.51
BUS-2A	TRM-2A22APHBG	FDR	.00	.00	.00	.00
BUS-2A	TRM-2A25CLTRF	FDR	.00	179.86	149.64	35.69
BUS-2A	TRM-2A21CMC28A	FDR	.00	.00	.00	.00
BUS-2A	TRM-2A24CMC210	FDR	.00	22.50	18.72	4.46
BUS-2A	TRM-2A22BMC24A	FDR	.03	557.52	463.85	70.39
BUS-2A	TRM-2A25BMC23	FDR	.00	75.26	62.61	17.92
BUS-2A	TRM-2AMC21	FDR	.00	120.24	100.03	34.16
BUS-3	BUS-32CWP26	FDR	.00	89.44	1114.52	7.45
BUS-3	BUS-33SST#3	FDR	.00	167.72	2089.95	13.98
BUS-3	BUS-31ARW3	FDR	.00	52.22	650.65	4.35
BUS-31ARW3	HT-RW3	FDR	.09	52.22	650.65	23.21
BUS-32CWP26	MT-CWP26	FDR	.16	89.44	1114.52	17.54
BUS-33SST#3	HT-SST#3	FDR	.04	167.72	2089.95	32.89
BUS-3A	TRM-3A6CAFP21	FDR	.00	547.25	454.41	82.92
BUS-3A	TRM-3A5CRHR21	FDR	.00	425.99	353.72	71.00
BUS-3A	TRM-3A3ACRF24	FDR	.00	355.27	295.00	67.29
BUS-3A	TRM-3A5ASWP22	FDR	.00	382.91	317.95	75.97
BUS-3A	TRM-3A5BCHP22	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A4APHBG21	FDR	.00	.00	.00	.00
BUS-3A	TRM-3A2CLTSW24	FDR	.00	222.97	185.14	44.24
BUS-3A	TRM-3A3BMCC22	FDR	.00	39.21	32.56	8.52
BUS-3A	TRM-3A2BMCC25	FDR	.00	77.94	64.71	15.10
BUS-3A	TRM-3A2AMCC26C	FDR	.00	361.80	300.42	47.86
BUS-3A	TRM-3A1CMCC211	FDR	.00	.00	.00	.00
BUS-4	BUS-410CP23	FDR	.00	202.23	2520.20	16.85
BUS-4	BUS-411CWP24	FDR	.00	89.44	1114.55	7.45
BUS-410CP23	MT-CP23	FDR	.17	202.23	2520.20	39.65
BUS-411CWP24	MT-CWP24	FDR	.16	89.44	1114.55	17.54
BUS-5	BUS-00114	FDR	.00	540.41	6734.12	27.02
BUS-5	BUS-518SST#5	FDR	.00	219.71	2737.84	10.99
BUS-5	BUS-519CWP25	FDR	.00	89.43	1114.45	7.45
BUS-518SST#5	HT-SST#5	FDR	.06	219.71	2737.83	43.08
BUS-519CWP25	MT-CWP25	FDR	.15	89.43	1114.45	17.54
BUS-5A	TRM-5A15ASIP21	FDR	.02	428.28	351.82	71.38
BUS-5A	TRM-5A15BCSP21	FDR	.02	479.40	393.81	72.64
BUS-5A	TRM-5A15CCRF21	FDR	.02	353.05	290.03	66.87

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-5A	TRM-5A18ACRF22	FDR	.02	357.51	293.68	67.71
BUS-5A	TRM-5A17ACCP21	FDR	.02	317.04	260.44	72.05
BUS-5A	TRM-5A19CSWP21	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A19BSWP24	FDR	.02	395.23	324.67	78.42
BUS-5A	TRM-5A18CSAC	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A16APHBG	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A16CRP21	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A18BCHP21	FDR	.01	174.52	143.36	57.41
BUS-5A	TRM-5A17CLTSED	FDR	.00	183.79	150.98	36.47
BUS-5A	TRM-5A17BMC26A	FDR	.01	121.26	99.61	44.58
BUS-5A	TRM-5A16BMCC28	FDR	.00	.00	.00	.00
BUS-5A	TRM-5A19AMC29A	FDR	.02	367.19	301.64	46.36
BUS-6	BUS-617SST#6	FDR	.00	239.62	2986.39	19.97
BUS-6	BUS-616CWP22	FDR	.00	89.41	1114.34	7.45
BUS-616CWP22	MT-CWP22	FDR	.14	89.41	1114.34	17.53
BUS-617SST#6	HT-SST#6	FDR	.05	239.62	2986.38	46.98
BUS-6A	TRM-6A10ASIP23	FDR	.02	466.08	380.26	77.68
BUS-6A	TRM-6A12ACSP22	FDR	.02	482.93	394.00	73.17
BUS-6A	TRM-6A10CCRF25	FDR	.02	363.53	296.59	68.85
BUS-6A	TRM-6A11ARHR22	FDR	.02	433.99	354.08	72.33
BUS-6A	TRM-6A12CCCP23	FDR	.02	320.70	261.65	72.89
BUS-6A	TRM-6A8CSWP23	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A8BSWP26	FDR	.02	397.12	324.00	78.79
BUS-6A	TRM-6A9CAFP23	FDR	.03	551.73	450.13	83.60
BUS-6A	TRM-6A11ARP22	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A11BCHP23	FDR	.00	.00	.00	.00
BUS-6A	TRM-6A9BMC26B	FDR	.01	156.30	127.52	44.40
BUS-6A	TRM-6A10BMC27A	FDR	.01	285.64	233.04	28.79
BUS-6A	TRM-6A7CRMG22	FDR	.00	.00	.00	.00
BUS-BAFWB33	TRM-AFWB33	FDR	.08	10.69	8.76	42.75
BUS-BAFWB34	TRM-AFWB34	FDR	.08	10.69	8.76	42.75
BUS-CCRVPD21	TRM-26C1DBF21	FDR	.01	9.90	8.16	UNKNOWN
BUS-CCRVPD21	TRM-26C1M120DP	FDR	.00	1.01	.83	UNKNOWN
BUS-CCRVPD21	TRM-26C1HBUVF	FDR	.00	9.58	7.89	UNKNOWN
BUS-MCC 212	MCC 212	FDR	.02	14.03	12.16	6.10
BUS-MCC 213	MCC 213	FDR	.03	20.23	17.27	8.80
BUS-RCS	BUS-RP1-C2	FDR	.19	27.74	5.61	42.68
BUS-RWSP12	TRM-RWSP12	FDR	.26	571.14	487.40	75.15
BUS-SCWSH23	TRM-SCWSH23	FDR	.18	159.78	136.35	69.47

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
HT-LTG-22	LT-LTG-22	TX2	1.42	222.97	182.63	81.17
HT-RW1	LT-RW1	TX2	.03	.98	12.16	.97
HT-RW3	LT-RW3	TX2	1.51	52.22	650.06	52.00
HT-SST#2	LT-SST#2	TX2	4.09	167.18	2082.36	78.11
HT-SST#3	LT-SST#3	TX2	4.29	167.73	2089.20	78.36
HT-SST#5	LT-SST#5	TX2	5.32	219.72	2736.30	102.64
HT-SST#6	LT-SST#6	TX2	6.01	239.63	2984.81	111.96
LT-RW1	BUS-21RW1	FDR	.00	14.03	12.16	.88
LT-RW3	BUS-22RW3	FDR	.01	750.61	640.65	46.91
LT-SST#2	TRM-BKR-SST#2	FDR	.02	2403.10	2000.59	80.10
LT-SST#3	TRM-BKR-SST#3	FDR	.02	2411.04	2003.30	80.37
LT-SST#5	TRM-BKR-SST#5	FDR	.03	3158.32	2596.58	105.28
LT-SST#6	TRM-BKR-SST#6	FDR	.03	3444.56	2812.84	114.82
LT-XFMR-DP2	TRM-26BBB3DP2	FDR	.13	39.94	8.01	22.83
MCC 21	TRM-211DLSWPH	FDR	.00	2.93	2.41	UNKNOWN
MCC 21	TRM-211DRREC21	FDR	.00	21.93	18.04	UNKNOWN
MCC 21	TRM-211FLP21	FDR	.00	78.30	64.40	UNKNOWN
MCC 21	TRM-213BRSC27H	FDR	.00	8.08	6.64	UNKNOWN
MCC 21	TRM-213HSWSP26	FDR	.04	1.08	.89	UNKNOWN
MCC 21	TRM-213MHTTR21	FDR	.00	9.78	8.04	UNKNOWN
MCC 210	TRM-2101FLP225	FDR	.00	22.50	18.70	UNKNOWN
MCC 212	BUS-212IHFEED	FDR	.00	14.03	12.16	UNKNOWN
MCC 213	BUS-2131EHCP12	FDR	.00	1.52	1.30	UNKNOWN
MCC 213	BUS-2131LSCPWR	FDR	.00	3.53	3.01	UNKNOWN
MCC 213	BUS-2131PSCHTR	FDR	.00	3.53	3.01	UNKNOWN
MCC 213	BUS-213HTP21A	FDR	.00	11.75	10.03	UNKNOWN
MCC 22	TRM-221MLCO2U	FDR	.00	25.13	20.83	UNKNOWN
MCC 22	TRM-223DMGHD	FDR	.00	4.23	3.51	UNKNOWN
MCC 22	TRM-224BFLBC	FDR	.71	8.53	7.07	UNKNOWN
MCC 22	TRM-224FDPSP21	FDR	.10	2.02	1.68	UNKNOWN
MCC 23	TRM-231MMBFPOH	FDR	.00	30.25	25.08	UNKNOWN
MCC 23	TRM-232CVRC2	FDR	.00	1.81	1.50	UNKNOWN
MCC 23	TRM-233MCPSP21	FDR	.03	1.16	.96	UNKNOWN
MCC 23	TRM-234FWCAS	FDR	.00	30.61	25.38	UNKNOWN
MCC 23	TRM-234HRCPTH	FDR	.00	11.28	9.36	UNKNOWN
MCC 23	TRM-236BCPSP24	FDR	.09	2.02	1.68	UNKNOWN
MCC 23	TRM-236MSWSP27	FDR	.18	1.08	.90	UNKNOWN
MCC 25	TRM-255ELHTR22	FDR	.00	31.58	26.14	UNKNOWN
MCC 25	TRM-255ER	FDR	.97	46.53	38.52	54.75

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
MCC 26AA	BUS-26AAM3CIA	FDR	.14	3.35	2.72	UNKNOWN
MCC 26AA	BUS-26AAL3DP1	FDR	.00	27.91	22.65	UNKNOWN
MCC 26AA	BUS-26AAL4H2O2	FDR	.00	1.85	1.50	UNKNOWN
MCC 26BB	BUS-26BBA2SREF	FDR	.11	5.35	4.33	UNKNOWN
MCC 26BB	BUS-26BBB3DP2	FDR	.00	9.99	8.08	UNKNOWN
MCC 26BB	BUS-26BBB4H2O2	FDR	.00	1.86	1.51	UNKNOWN
MCC 27-1	TRM-273DRBA22H	FDR	.00	12.99	10.55	UNKNOWN
MCC 27-1	TRM-274BRRSH24	FDR	.00	17.46	14.18	UNKNOWN
MCC 27-1	TRM-272MRRGS21	FDR	.00	3.29	2.67	UNKNOWN
MCC 27-1	TRM-27NT9MPABH	FDR	.00	32.10	26.06	UNKNOWN
MCC 27-2	TRM-276KPABS22	FDR	.06	3.30	2.68	UNKNOWN
MCC 27-2	TRM-275FPABS21	FDR	.06	3.30	2.68	UNKNOWN
MCC 27-2	TRM-277MRLP223	FDR	.00	23.42	19.02	UNKNOWN
MCC-24	TRM-242FIPCF22	FDR	.06	13.67	11.25	UNKNOWN
MCC-24	TRM-242BRSATAL	FDR	.00	27.97	23.02	UNKNOWN
MCC-24	TRM-242HRVF21	FDR	.04	20.58	16.94	UNKNOWN
MCC-24	TRM-246BRRCNTS	FDR	.00	6.94	5.71	UNKNOWN
MCC-24	TRM-242KRVF22	FDR	.04	20.55	16.92	UNKNOWN
MCC-24	TRM-242MRVF23	FDR	.04	20.53	16.90	UNKNOWN
MCC-24	TRM-245MCLGWP2	FDR	.02	120.97	99.56	UNKNOWN
MCC-24	TRM-243BWEF24	FDR	.06	13.61	11.20	UNKNOWN
MCC-24	TRM-243DWEF25	FDR	.06	13.63	11.22	UNKNOWN
MCC-24	TRM-244DVRINV	FDR	.00	1.83	1.50	UNKNOWN
MCC-24	TRM-243FIPCF24	FDR	.06	13.67	11.25	UNKNOWN
MCC-24	TRM-243HRVF24	FDR	.04	20.51	16.88	UNKNOWN
MCC-24	TRM-243KRVF25	FDR	.03	20.50	16.87	UNKNOWN
MCC-24	TRM-244HWEF21	FDR	.06	13.64	11.22	UNKNOWN
MCC-24	TRM-244FIPCF26	FDR	.06	13.67	11.25	UNKNOWN
MCC-24	TRM-244KWEF22	FDR	.06	13.62	11.21	UNKNOWN
MCC-24	TRM-244MWEF23	FDR	.06	13.60	11.20	UNKNOWN
MCC-24	TRM-245DRIAD	FDR	.00	2.77	2.28	UNKNOWN
MCC-24A	TRM-24A1AMCC24	FDR	.00	371.07	305.68	UNKNOWN
MCC-24A	TRM-24A2CED22A	FDR	.00	9.17	7.55	UNKNOWN
MCC-24A	TRM-24A2AR45DP	FDR	.00	30.52	25.14	UNKNOWN
MCC-24A	TRM-24A3CCMP22	FDR	.03	84.01	69.20	UNKNOWN
MCC-24A	TRM-24A2EBCH22	FDR	.00	61.71	50.84	UNKNOWN
MCC-24A	TRM-24A4AIAC22	FDR	.06	2.35	1.93	UNKNOWN
MCC-26A	MCC 26AA	FDR	.08	32.82	26.66	14.27
MCC-26A	TRM-26A1BEF21	FDR	.05	11.88	9.65	UNKNOWN

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
MCC-26A	TRM-26A1DEPV21	FDR	.00	10.42	8.46	UNKNOWN
MCC-26A	TRM-26A1DRDP1	FDR	.10	27.27	22.15	UNKNOWN
MCC-26A	TRM-26A6HRBAHT	FDR	.00	14.51	11.79	UNKNOWN
MCC-26A	TRM-26A6KRCP21	FDR	.06	6.49	5.27	UNKNOWN
MCC-26A	TRM-26A6HEPX3	FDR	.00	21.17	17.19	UNKNOWN
MCC-26B	MCC 26BB	FDR	.04	16.08	13.00	6.99
MCC-26B	TRM-26B1BEF22	FDR	.05	11.93	9.65	UNKNOWN
MCC-26B	TRM-26B7DHVAC	FDR	.00	71.10	57.52	UNKNOWN
MCC-26B	TRM-26B6BRREDA	FDR	.09	11.33	9.17	UNKNOWN
MCC-26B	TRM-26B5MRLEDV	FDR	.03	7.65	6.19	UNKNOWN
MCC-26B	TRM-26B5MRREDV	FDR	.05	13.56	10.97	UNKNOWN
MCC-26B	TRM-26B7MBAP22	FDR	.03	18.19	14.72	UNKNOWN
MCC-26B	TRM-26B5KRAC22	FDR	.01	6.50	5.26	UNKNOWN
MCC-26C	TRM-26C4FVDP21	FDR	.00	20.44	16.92	UNKNOWN
MCC-26C	TRM-26C1ASFP21	FDR	.01	108.96	90.17	UNKNOWN
MCC-26C	TRM-26C2BPAB21	FDR	.01	137.48	113.77	UNKNOWN
MCC-26C	TRM-26C3HPWP21	FDR	.01	26.70	22.09	UNKNOWN
MCC-26C	TRM-26C5LGVD21	FDR	.03	7.33	6.07	UNKNOWN
MCC-26C	TRM-26C3ABT21H	FDR	.00	13.04	10.79	UNKNOWN
MCC-26C	TRM-26C3NBAP21	FDR	.01	14.76	12.21	UNKNOWN
MCC-26C	TRM-26C5AEF213	FDR	.00	2.85	2.36	UNKNOWN
MCC-26C	TRM-26C3FBC23	FDR	.00	33.65	27.84	UNKNOWN
MCC-27	TRM-271KRPAB23	FDR	.03	2.07	1.68	UNKNOWN
MCC-27	TRM-272DRPAB25	FDR	.04	7.55	6.13	UNKNOWN
MCC-27	TRM-272KRWHT22	FDR	.04	2.33	1.89	UNKNOWN
MCC-27	TRM-278BLAFWPH	FDR	.00	57.22	46.46	UNKNOWN
MCC-27	TRM-271BRRFCVE	FDR	.00	11.53	9.36	UNKNOWN
MCC-27	TRM-274BLRSH23	FDR	.00	16.76	13.61	UNKNOWN
MCC-27	TRM-271MRRHT24	FDR	.00	15.33	12.45	UNKNOWN
MCC-27	TRM-271MLRBALE	FDR	.04	4.69	3.81	UNKNOWN
MCC-27	MCC 27-1	FDR	.00	64.84	52.65	UNKNOWN
MCC-27	MCC 27-2	FDR	.00	29.66	24.08	UNKNOWN
MCC-27A	TRM-27A1AMCC27	FDR	.00	204.52	166.09	34.09
MCC-27A	TRM-27A4EBC24	FDR	.00	64.02	51.99	UNKNOWN
MCC-27A	TRM-27A5E118V	FDR	.00	19.20	15.59	UNKNOWN
MCC-29	TRM-294HWEF216	FDR	.11	3.30	2.70	UNKNOWN
MCC-29	TRM-296BHRSSP1	FDR	.02	18.77	15.38	UNKNOWN
MCC-29	TRM-294MDGBH	FDR	.00	93.61	76.68	UNKNOWN
MCC-29	TRM-294BRSHT21	FDR	.00	27.56	22.58	UNKNOWN

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
MCC-29	TRM-294BLSHT22	FDR	.00	26.48	21.69	UNKNOWN
MCC-29	TRM-292BLUATAL	FDR	.00	37.49	30.71	UNKNOWN
MCC-29	TRM-291ERSPHTR	FDR	.00	12.27	10.05	UNKNOWN
MCC-29A	TRM-29A3CIAC21	FDR	.09	4.66	3.82	UNKNOWN
MCC-29A	TRM-29A3JBCH21	FDR	.00	61.67	50.54	UNKNOWN
MCC-29A	TRM-29A3LIAC21	FDR	.03	83.44	68.38	UNKNOWN
MCC-29A	TRM-29A3GEF215	FDR	.11	3.30	2.71	UNKNOWN
MCC-29A	TRM-29A3EED21A	FDR	.00	8.87	7.27	UNKNOWN
MCC-29A	TRM-29A1AMC29	FDR	.00	210.42	172.42	26.30
TRM-120VDP	BUS-120VDP	TX2	3.57	1.01	.83	82.99
TRM-2101FLP225	TRM-LP225	TX2	3.73	22.50	18.70	83.10
TRM-211DLSPH	TRM-SWPHTRS	FDR	.30	2.93	2.41	11.71
TRM-211DRREC21	TRM-CPREC21	FDR	.21	21.93	18.04	43.87
TRM-211FLP21	TRM-LP21	FDR	.58	78.30	64.40	68.09
TRM-213BRSC27H	TRM-SC27HT	FDR	.65	8.08	6.64	23.08
TRM-213HSWSP26	TRM-SWPSP26	FDR	.06	1.08	.89	4.34
TRM-213MHTTR21	TRM-HTTRC21	FDR	.61	9.78	8.04	19.56
TRM-221MLCO2U	TRM-CO2U	FDR	.86	25.13	20.83	50.25
TRM-223DMGHD	TRM-MGHD	FDR	.31	4.23	3.51	16.94
TRM-224BFLBC	TRM-FLBC	FDR	.28	8.53	7.02	10.03
TRM-224FDPSP21	TRM-DPSP21	FDR	.15	2.02	1.68	8.10
TRM-231MMBFPOH	TRM-MBFPOH	FDR	.32	30.25	25.08	46.54
TRM-232CVRC2	TRM-VRC2	FDR	.20	1.81	1.50	5.18
TRM-233MCPSP21	BUS-0798	FDR	.10	1.16	.96	4.64
TRM-234FWCAS	TRM-WCAS	FDR	1.62	30.61	25.38	61.22
TRM-234HRCPHT	TRM-RCPHT	FDR	.49	11.28	9.36	32.24
TRM-236BCPSP24	BUS-0799	FDR	.05	2.02	1.67	8.09
TRM-236MSWSP27	TRM-SWVPSP27	FDR	.06	1.08	.89	4.32
TRM-242BRSATAL	BUS-0801	FDR	2.05	27.97	23.02	55.94
TRM-242FIPCF22	TRM-IPHCF22	FDR	.91	13.67	11.25	54.69
TRM-242HRVF21	TRM-RVF21	FDR	1.28	20.58	16.93	41.16
TRM-242KRVF22	TRM-RVF22	FDR	1.15	20.55	16.91	41.11
TRM-242MRVF23	TRM-RVF23	FDR	1.03	20.53	16.89	41.06
TRM-243BWEF24	TRM-WEF24	FDR	.47	13.61	11.20	38.89
TRM-243DWEF25	TRM-WEF25	FDR	.61	13.63	11.21	38.94
TRM-243FIPCF24	TRM-IPHCF24	FDR	.93	13.67	11.25	54.70
TRM-243HRVF24	TRM-RVF24	FDR	.92	20.51	16.87	41.01
TRM-243KRVF25	TRM-RVF25	FDR	.92	20.50	16.87	41.01
TRM-244DVRINV	TRM-VREGINV	FDR	.18	1.83	1.50	5.22

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-244FIPCF26	TRM-IPHCF26	FDR	.87	13.67	11.24	54.67
TRM-244HWEF21	TRM-WEF21	FDR	.67	13.64	11.22	38.97
TRM-244KWEF22	TRM-WEF22	FDR	.52	13.62	11.20	38.91
TRM-244MWEF23	TRM-WEF23	FDR	.43	13.60	11.19	38.87
TRM-245DRIAD	TRM-IAD	FDR	.07	2.77	2.28	11.09
TRM-245MCLGWP2	TRM-CLGWP22	FDR	.74	120.97	99.54	52.60
TRM-246BRRCNTS	TRM-RCS	FDR	.83	6.94	5.71	19.82
TRM-24A1AMCC24	MCC-24	FDR	.09	371.07	305.68	78.12
TRM-24A2A-CC2	BUS-R45DP	TX2	3.80	30.52	24.96	83.21
TRM-24A2AR45DP	TRM-24A2A-CC2	FDR	.71	30.52	25.14	122.09
TRM-24A2CED22A	TRM-EDG22AL	FDR	.05	9.17	7.55	14.10
TRM-24A2EBCH22	TRM-BATCH22	FDR	1.63	61.71	50.84	72.60
TRM-24A3CCMP22	TRM-IAC22	FDR	1.59	84.01	69.19	73.05
TRM-24A4AIAC22	TRM-IACCWP22	FDR	.40	2.35	1.93	9.39
TRM-255ELHTR22	BUS-0804	FDR	.51	31.58	26.14	48.59
TRM-255ER	BUS-255ERA	FDR	.04	20.20	16.56	40.40
TRM-255ER	BUS-255ERB	FDR	.03	29.92	24.53	35.20
TRM-26A1BEF21	TRM-ETEF21	FDR	.62	11.88	9.64	33.94
TRM-26A1DEPV21	TRM-EPV21	FDR	.22	10.42	8.46	16.03
TRM-26A1DRDP1	TRM-DISTPNL1	FDR	.45	27.27	22.13	23.71
TRM-26A6HEPX3	TRM-EPX3	FDR	.36	21.17	17.19	32.57
TRM-26A6HRBAHT	TRM-BAHT	FDR	.21	14.51	11.79	17.07
TRM-26A6KRCP21	TRM-ACCP21	FDR	1.12	6.49	5.27	25.96
TRM-26B1BEF22	TRM-ETEF22	FDR	.63	11.93	9.64	34.08
TRM-26B5KRAC22	TRM-ACCP22	FDR	1.06	6.50	5.26	26.00
TRM-26B5MRLEDV	TRM-EDGVDP1	FDR	2.22	7.65	6.19	30.61
TRM-26B5MRREDV	TRM-EDVDP1	FDR	3.92	13.56	10.97	54.25
TRM-26B6BRREDA	TRM-EDG23AL	FDR	.29	11.33	9.16	13.33
TRM-26B7DHVAC	TRM-CRHVACDP	FDR	3.07	71.10	57.52	54.70
TRM-26B7MBAP22	TRM-BAPP22	FDR	1.13	18.19	14.71	72.77
TRM-26C1ASFP21	TRM-SFP21	FDR	1.42	108.96	90.16	47.38
TRM-26C1DBF21	TRM-BF21	FDR	.05	9.90	8.16	39.59
TRM-26C1HBUVF	TRM-BUVF	FDR	.05	9.58	7.89	38.31
TRM-26C1M120DP	TRM-120VDP	FDR	.00	1.01	.83	10.07
TRM-26C2BPAB21	TRM-PABEF21	FDR	1.68	137.48	113.75	59.77
TRM-26C3ABT21H	TRM-BATK21HTR	FDR	2.71	13.04	10.79	37.27
TRM-26C3FBC23	TRM-BATCH23	FDR	.23	33.65	27.84	51.76
TRM-26C3HPWP21	TRM-PWMUP21	FDR	2.51	26.70	22.09	53.39
TRM-26C3NBAP21	TRM-BAXFERP21	FDR	3.48	14.76	12.21	42.17

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-26C4FVDP21	BUS-CCRVPDP21	FDR	.41	20.44	16.92	17.78
TRM-26C5AEF213	TRM-WEF213	FDR	.05	2.85	2.36	11.39
TRM-26C5LGVPDP2	TRM-DGVDP2	FDR	.12	7.33	6.06	4.19
TRM-271BRRFCVE	TRM-FCVENC	FDR	2.24	11.53	9.36	46.12
TRM-271KRPAB23	TRM-PABSP23	FDR	.10	2.07	1.68	8.27
TRM-271MLRBALE	TRM-BALER	FDR	.05	4.69	3.81	4.08
TRM-271MRRHT24	TRM-HTRC24	FDR	.42	15.33	12.45	23.58
TRM-272DRPAB25	TRM-PAB25 (-1)	FDR	.11	7.55	6.13	15.10
TRM-272KRWHT22	TRM-WHTPSP22	FDR	.22	2.33	1.89	9.32
TRM-272MRRGS21	TRM-GASST21	FDR	.28	3.29	2.67	13.16
TRM-273DRBA22H	TRM-BAT22HTRS	FDR	.43	12.99	10.55	37.11
TRM-274BLRSH23	TRM-STRIPHTR23	FDR	.46	16.76	13.61	25.79
TRM-274BRRSH24	TRM-STRIPH24	FDR	.57	17.46	14.18	26.86
TRM-275FPABS21	TRM-PABSTP21	FDR	.45	3.30	2.68	13.19
TRM-276KPABS22	TRM-PABSTP22	FDR	.45	3.30	2.68	13.19
TRM-277MRLP223	TRM-LP223	FDR	.91	23.42	19.02	36.03
TRM-278BLAFWPH	TRM-AFWPHH	FDR	3.07	57.22	46.46	67.32
TRM-27A1AMCC27	MCC-27	FDR	.02	204.52	166.09	43.06
TRM-27A4EBC24	TRM-BATCH24	FDR	3.74	64.02	51.99	75.32
TRM-27A5E118V	TRM-INV 24	FDR	3.69	19.20	15.59	54.84
TRM-27NT9MPABH	TRM-PABHTRDP	FDR	.23	32.10	26.06	27.91
TRM-291ERSPHTR	TRM-SPHTR	FDR	.51	12.27	10.05	49.09
TRM-292BLUATAL	TRM-UATAL	FDR	2.28	37.49	30.71	107.12
TRM-294BLSHT22	TRM-SHT22	FDR	.16	26.48	21.69	40.74
TRM-294BRSHT21	TRM-SHT21	FDR	.15	27.56	22.58	42.40
TRM-294HWEF216	TRM-WEF216	FDR	.23	3.30	2.70	13.21
TRM-294MDGBH	TRM-DGBH	FDR	2.16	93.61	76.68	81.40
TRM-296BHRSSP1	TRM-HRSSP1	FDR	1.80	18.77	15.37	37.55
TRM-29A1AMC29	MCC-29	FDR	.03	210.42	172.42	44.30
TRM-29A3CIAC21	TRM-IACLGCP21	FDR	.34	4.66	3.82	18.65
TRM-29A3EED21A	TRM-EDG21AL	FDR	.04	8.87	7.27	13.65
TRM-29A3GEF215	TRM-EF215	FDR	.26	3.30	2.70	13.21
TRM-29A3JBCH21	TRM-BATCH21	FDR	1.04	61.67	50.54	94.88
TRM-29A3LIAC21	TRM-IAC21	FDR	.82	83.44	68.36	72.56
TRM-2A22BMC24A	MCC-24A	FDR	.96	557.52	463.69	58.69
TRM-2A22CCCP22	MT-CCP22	FDR	2.37	314.56	261.67	66.22
TRM-2A24BSIP22	MT-SIP22	FDR	1.29	423.05	351.90	55.66
TRM-2A24CMC210	MCC 210	FDR	.09	22.50	18.72	4.74
TRM-2A25ASWP25	MT-SWP25	FDR	.22	382.22	317.95	61.65

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-2A25BMC23	MCC 23	FDR	.34	75.26	62.61	15.84
TRM-2A25CLTRF	TRM-LTRFSW22	FDR	.16	179.86	149.64	58.02
TRM-2A26CCRF23	MT-CRF23	FDR	2.73	354.62	294.99	57.20
TRM-2AMC21	MCC 21	FDR	1.15	120.24	100.03	38.79
TRM-3A2AMCC26C	MCC-26C	FDR	.34	361.80	300.42	38.08
TRM-3A2BMCC25	MCC 25	FDR	.31	77.94	64.71	16.41
TRM-3A2CLTSW24	HT-LTG-22	FDR	1.35	222.97	185.14	46.94
TRM-3A3ACRF24	MT-CRF24	FDR	2.73	355.27	295.00	57.30
TRM-3A3BMCC22	MCC 22	FDR	.15	39.21	32.56	8.25
TRM-3A5ASWP22	MT-SWP22	FDR	.22	382.91	317.95	61.76
TRM-3A5CRHR21	MT-RHR21	FDR	1.36	425.99	353.72	56.05
TRM-3A6CAFP21	MT-AFP21	FDR	1.53	547.25	454.41	72.01
TRM-5A15ASIP21	MT-SIP21	FDR	1.23	428.28	351.75	56.35
TRM-5A15BCSP21	MT-CSP21	FDR	1.62	479.40	393.72	63.08
TRM-5A15CCRF21	MT-CRF21	FDR	1.03	353.05	289.97	56.94
TRM-5A17ACCP21	MT-CCP21	FDR	1.87	317.04	260.40	66.74
TRM-5A17BMC26A	MCC-26A	FDR	1.11	121.26	99.60	39.12
TRM-5A17CLTSED	TRM-EDN2 (N)	FDR	.71	183.79	150.98	38.69
TRM-5A18ACRF22	MT-CRF22	FDR	2.25	357.51	293.63	57.66
TRM-5A18BCHP21	MT-CHP21	FDR	1.20	174.52	143.35	45.93
TRM-5A19AMC29A	MCC-29A	FDR	.23	367.19	301.59	38.65
TRM-5A19BSWP24	MT-SWP24	FDR	2.24	395.23	324.60	63.75
TRM-6A10ASIP23	MT-SIP23	FDR	1.30	466.08	380.18	61.33
TRM-6A10BMC27A	MCC-27A	FDR	.44	285.64	233.03	20.05
TRM-6A10CCRF25	MT-CRF25	FDR	3.17	363.53	296.53	58.63
TRM-6A11ARHR22	MT-RHR22	FDR	1.42	433.99	354.01	57.10
TRM-6A12ACSP22	MT-CSP22	FDR	1.65	482.93	393.91	63.54
TRM-6A12CCCP23	MT-CCP23	FDR	2.30	320.70	261.60	67.52
TRM-6A8BSWP26	MT-SWP26	FDR	2.03	397.12	323.93	64.05
TRM-6A9BMC26B	MCC-26B	FDR	.82	156.30	127.50	50.42
TRM-6A9CAFP23	MT-AFP23	FDR	1.35	551.73	450.00	72.60
TRM-AAFWBF217	TRM-AFWBF217	FDR	.04	7.40	6.06	29.60
TRM-AAFWBF218	TRM-AFWBF218	FDR	.03	6.40	5.24	25.60
TRM-AAFWBF219	TRM-AFWBF219	FDR	.03	6.40	5.24	25.60
TRM-BAFWB32	TRM-AFWB32	FDR	.06	8.55	7.00	34.19
TRM-BKR-SST#2	BUS-2A	FDR	.04	2403.10	2000.13	66.75
TRM-BKR-SST#3	BUS-3A	FDR	.04	2411.04	2002.84	66.97
TRM-BKR-SST#5	BUS-5A	FDR	.05	3158.32	2595.79	87.73
TRM-BKR-SST#6	BUS-6A	FDR	.06	3444.56	2811.90	91.13

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Indian Point Generating Station - Unit No. 2 - IP2 LF SI (TA + Man) Case 1

Computer Run: LF SI (Total Auto + Manual) Case 1

Preparer: Ravi Yedithi

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
TRM-CO2U	BUS-CO2U	TX2	3.13	25.13	20.65	68.84
TRM-DGVDP2	TRM-FAN321	FDR	.00	7.33	6.06	29.32
TRM-EBB1-S	TRM-EPF5	FDR	.37	111.64	22.08	63.80
TRM-EDG23AL	BUS-EDG23AL (A)	TX2	.20	2.44	1.97	4.38
TRM-EDG23AL	BUS-EDG23AL (B)	FDR	.31	9.02	7.26	13.87
TRM-EDN2 (N)	LT-LTG23	TX2	.33	183.79	149.90	66.62
TRM-EPV21	BUS-EPV21	TX2	1.30	10.42	8.45	28.15
TRM-EPX3	BUS-EPX3	TX2	2.64	21.17	17.13	57.10
TRM-FCVENC	BUS-1130	TX2	1.53	11.53	9.15	101.63
TRM-HTRC24	BUS-HTXFMR24	TX2	1.62	15.33	12.39	41.31
TRM-HTTR22	BUS-HTTR22	TX2	2.62	31.58	25.89	57.53
TRM-HTTRC21	BUS-HTTRC21	TX2	1.13	9.78	7.99	26.64
TRM-IAD	BUS-245DRIAD	TX2	3.45	2.77	2.28	75.98
TRM-LP21	BUS-LP21	TX2	19.50	78.31	64.02	426.80
TRM-LP223	BUS-LP223	TX2	2.57	23.42	18.84	62.80
TRM-PRHTR21P	TRM-PRHTR21S	TX2	.00	.00	.00	.00
TRM-PRHTR22P	TRM-PRHTR22S	TX2	.00	.00	.00	.00
TRM-PRHTR23P	TRM-PRHTR23S	TX2	.00	.00	.00	.00
TRM-PRHTR24P	TRM-PRHTR24S	TX2	.00	.00	.00	.00
TRM-RCS	BUS-RCS	TX2	.86	6.94	5.66	18.87
TRM-SHT21	BUS-SHT21	TX2	2.90	27.56	22.54	75.14
TRM-SHT22	BUS-SHT22	TX2	3.06	26.48	21.65	72.18
TRM-STRIPH24	BUS-STRIPH24	TX2	1.84	17.46	14.09	46.97
TRM-STRIPHTR23	BUS-STRIPHTR23	TX2	1.77	16.76	13.55	45.15
TRM-TRS-PANEL	TRM-TRS-11	FDR	.19	7.02	6.07	28.07
TRM-TRS-PANEL	TRM-TRS-12	FDR	.19	7.02	6.07	28.07
TRM-WCAS	BUS-WCAS	TX2	3.81	30.61	24.97	83.23

NOTE: FDR RATING% = % AMPS RATING BASED ON LIBRARY FLA OR BRANCH INPUT FLA
TX2 RATING% = % KVA RATING BASED ON TRANSFORMER FL KVA

494 BUSES

*** TOTAL SYSTEM LOSSES ***
404. KW 2647. KVAR

WARNING STUDY CONTAINS 51 VOLTAGE CRITERIA VIOLATIONS
VIOLATIONS DENOTED BY (\$) AT BUS AND BRANCH %VD LOCATIONS

ENCLOSURE 8 TO NL-09-010

TIME TABLE OF EVENTS

– LARGE LOCA WITH EDG-23 FAILURE

5.5 Large LOCA with Failure of Emergency Diesel Generator 23

The time table of events for this final large LOCA scenario is provided in Table 5.5-1. The loading spreadsheets for EDGs 21 and 22 are given in Tables 5.5-2a and 5.5-2b, respectively.

Again, the loads for both diesel generators are reasonable. For EDG 21, the highest load occurs after Recirculation Switch 4. This peak load is 2268 kw, which is still below the half-hour limit. Note that in the previous loading study (WCAP-12655, Rev. 0), Technical Specification / administrative control limits prevented addition of the non-essential SW pump (previously 272 kw) on this EDG. This administrative control has been removed, and thus the non-essential service water pump was added on the spreadsheet. EDG 22 shows acceptable results with a peak load of 2059 kw during the injection phase and 2076 kw during the recirculation phase.

As noted on Table 5.5-2a, the long term load on EDG 22 can be reduced to below 1750 kw by EDG load management, e.g., operation of the CCW pump (230 kw) on EDG 21, if the non-essential SW pump (282 kw) remains powered by EDG 22. (The spreadsheets consider the NE SW load on either EDG 21 or 22 to allow for the possibility that any one SW pump on the non-essential header can be out of service, as allowed per Technical Specifications). One fan cooler (211 kw) can also be secured on EDG 22 since each EDG (21 and 22) supplies power to two fan cooler units.

Table 5.5-1
Time Table of Events
Large LOCA with Emergency Diesel Generator 23 Failure

<u>Event</u>	<u>Time (min)</u>
Large LOCA with Loss of Offsite Power, SI and Containment Spray Actuation	0
Diesels 21 and 22 Start, Major Equipment Sequences Onto Energized 480 V Buses per Description in Section 4.1	0-1
Other Miscellaneous Equipment on MCCs 26A, 26C, and 211 Load Automatically: Cable Tunnel Exhaust Fan 21 (Auto-temp) EDG Support Loads (Vent and Exhaust Fans 21 and 22) Boric Acid Heat Tracing MOV Loads for Valves Moving to Safeguards Positions	0-1
Operators Directed to Emergency Operating Procedure (EOP) E-0, Reactor Trip or Safety Injection, Step 1.	1
Operators Verify Reactor Trip, Turbine Trip, and SI Actuation.	3
Operator Starts Charging Pump 21 at Maximum Speed, Verifies Flow Path From RWST, and Dispatches Operator to Establish Backup Cooling per SOP 4.1.2	4
MCCs 24A, 29A, and 211 reset per EOP E-0 Note: MCC 211 not stripped, reset not required	4
The following components are loaded automatically when MCCs reset:	
EDG 21, Bus 5A:	
MCC 29A:	
Inst. Air Comp. 21 (and Support Loads)	60 kw
Battery Charger 21	45 kw
EDG 21 Auxiliaries (Compressor)	<u>4 kw</u>
Additional EDG 21 Load =	109 kw

Table 5.5-1 (page 2)
Time Table of Events
Large LOCA with Emergency Diesel Generator 23 Failure

<u>Event</u>	<u>Time (min)</u>
EDG 22, Buses 2A /3A:	
MCC 24A	
EDG 22 Auxiliaries (Compressor)	4 kw
Inst. Air Comp. 22 (and Support Loads)	60 kw
Battery Charger 22	45 kw
Radiation Monitor 45	2 kw
Additional EDG 22 Load =	111 kw
EDG 23, Bus 6A: None	
Control Room Operators Continue with Immediate Actions of E-0	5-10
Operator Starts Turbine Driven AFW Pump to Supply AFW to SGs Nos. 23 and 24	10
Operators Verify Remainder of Automatic Actions in E-0	10-15
Transition to EOP E-1, Loss of Reactor or Secondary Coolant	15
Operator Resets SI and Containment Spray, Places CCW Pumps in PULLOUT	16
Establish PAB Ventilation per EOP E-1 – Portable Ventilation Established Since EDG 22 Load Exceeds 1860 kw, Operator Confirms Operation of Switchgear Room Exhaust Fan	20
Initiate Evaluation of Plant Status (per E-1)	20
SG NR Levels Indicate >26% in SGs Nos. 21 and 22, Operator Reduces AFW Flow	21
RWST Level Less Than 9.24 ft - Transition to ES-1.3, Transfer to Cold Leg Recirculation.	35
Operator Dispatches NPO to Open CCW Hx SW Outlet Valves, Verifies or Completes SI and Spray Reset	36

Table 5.5-1 (page 3)
Time Table of Events
Large LOCA with Emergency Diesel Generator 23 Failure

<u>Event</u>	<u>Time (min)</u>
Perform No. 1 and No. 3 Recirculation Switch Sequence: No Actions Since Equipment on Bus 6A Not Operational: SI Pump 22 Continues to Inject (SI Pump 23 Not Running) CS Pump 21 Continues to Inject (CS Pump 22 Not Running) Valve MOV-866C Closes (MOV-866D not powered) RHR Pump 21 Stops Valve MOV-744 Closes	36
Operator confirms SW alignment and stops charging pumps	38
Perform No. 2 Recirculation Switch Sequence: Non-Essential-SW Pump 22 (or 25) Starts CCW Pump 22 Started Manually	39
Perform No. 4 Recirculation Switch Sequence: Recirc Pump 21 Starts Valve MOV-1802A Opens	40
Operator continues with ES-1.3 assuming low-head recirculation:	
Perform No. 7 Recirculation Switch Sequence: SI Pumps 21 and 22 Stop	42
Perform No. 8 Recirculation Switch Sequence: Valve MOV-1810 Closes (if energized) CS Test Valve 1813 Closes	44
Recirculation Switch No. 5 Not Performed (due to EDG 23 Failure)	45
After No. 8 Recirculation Switch, the Following Major Equipment will be Operating:	45
Bus 5A: CR Fans 21 and 22 (EDG 21) Essential SW Pumps 24 (or 21) Non-Ess SW Pumps 21 (or 24), if 22 /25 Out of Service Recirc Pump 21 CS Pump 21 Selected Equipment on MCCs 29A, 26A, and 26AA	

Table 5.5-1 (page 4)
Time Table of Events
Large LOCA with Emergency Diesel Generator 23 Failure

<u>Event</u>	<u>Time (min)</u>
BUS 2A /3A: CR Fans 23 and 24 (EDG 22) Essential SW Pumps 25 (or 22) Non-Ess SW Pumps 22 (or 25) CCW Pump 22 AFW Pump 21 Selected Equipment on MCC 24A Bus 6A: None (EDG 23)	
Other Valves Close by Operator or Local Action: MOV-743 (Local Action Req'd) MOV-1870 MOV-842 MOV-843 (Local Action Req'd)	44-48
RWST Level Reaches 2.0 ft, Operator Aligns Spray to Recirculation per ES-1.3: CS Pump 21 is Stopped Valve MOV-866A Closed Valve MOV-889A Opened	50
Operator Confirms Core Flow and Recirc Spray Requirements	55
Recirculation Water pH Verified to be in Proper Range (otherwise a charging pump and BA transfer pump are operated to raise or lower pH)	60
Operators Isolate Accumulators by Closing Discharge Valves 894A and 894C (894B and 894D not operable, so these accumulators would be vented)	63
Valve HCV-3100 Opened to Vent the Upper Head	65
Operator Establishes PAB Ventilation on EDG 22	68
End of Transient Modeled	70

Table 5.5-2a: Large LOCA With Failure of EDG 23 - Loads on EDG 21
06/24/02

Bus 5A Loading - EDG 21			Time in Minutes		Recirculation Switch Sequence																	Pacific Spray																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Equipment	Max kW	Man/Auto	1	5	10	20	30	35	37	39	40	42	43	45	50	52	60	65	70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

Table 5.5-2b: Large LOCA With Failure of EDG 23 - Loads on EDG 22
06/24/02

Bus 22/23A Loading - EDG 22			Recirculation Switch Sequence																	Electric Spray				
			No. 1 & 3																					
			No. 2																					
			No. 4																					
			No. 7																					
			No. 8																					
Equipment			Max kW	Man/Auto	1	5	10	20	30	35	37	39	40	42	43	45	50	52	60	65	70			
SI Pump 22 (400)			345	A	345	345	345	345	345	345	345	345	345	345	345	345	0	0	0	0	0			
SI Cir Wtr Pump 22			2.2	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	-2.2								
RHR Pump 21 (400)			316	A	272	272	272	272	272	272	-272	0	0	0	0	0	0	0	0	0	0			
AFW Pump 21 (400)			367	A	376	376	376	376	-153	223	223	223	223	223	223	223	223	223	223	223	223			
CR Fan 23 (350)			250	A	221	221	9	230	4	234	-11	223	223	223	-12	211	211	211	211	211	211			
CR Fan 24 (350)			250	A	221	221	9	230	4	234	-11	223	223	223	-12	211	211	211	211	211	211			
Ess SW Pump 25 (350)			282	A	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282			
NE SW Pump 22 (350)			282	M	0	0	0	0	0	0	0	0	282	282	282	282	282	282	282	282	282			
CCW Pump 22 (250)			230	M	0	0	0	0	0	0	0	0	230	230	230	230	230	230	230	230	230			
Chg Pump 22 (250)			150	M	50	50	50	50	50	50	50	-50	0	0	0	0	0	0	0	0	0			
Pwr Htr 21			554	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pwr Htr 22			485	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Ltg Tran 21 (Hbr)			150	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Ltg Tran 22			150	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Ltg Bus 23 (480V-Hbr)			180	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MCC 211-MOV Leads																								
BFD-90			1.2	A	1.2	-1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-90-1			1.2	A	1.2	-1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-90-2			1.2	A	1.2	-1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-90-3			1.2	A	1.2	-1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-5			5	A	5	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-5-1			5	A	5	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-5-2			5	A	5	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BFD-5-3			5	A	5	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MCC 23A Leads																								
DG 22 Support Loads																								
Fuel Oil Pump (2)			1.5	A	0	0	0	0	0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5			
Compressor (5)			3.7	A	3.7	3.7	-3.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
XMF R 24 (htr 22)(max)			15	M/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Inst Air Comp 22 (75)			56	A	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56			
LA Cool Pump 22 (3)			2.2	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2			
Bat Charger 22 (Max)			45	A	45	45	45	-20	25	25	25	25	25	25	25	25	25	25	25	25	25			
Radiation Monitor 45			1.6	A	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6			
MCC 26C Leads																								
DG Exhaust Fan 22			0.8	A	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8			
PAB Exh Fan 21 (125)			93	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	93			
EDG (Btgr Vent Fan 320,322)			7.5	A	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5			
Batt Charger 23			25	A	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25			
CRAC Backup Fan (7.5)			5.6	A	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6			
CRAC Booster Fan 21 (7.5)			5.8	A	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8			
Dampers & Motors																								
BA Trans Pump 21 (15)			11.2	A	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2			
BAT Htr 21			15	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Spent Fuel Pump 21 (100)			75	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Wall Exhaust Fan 213 (2)			1.5	M	0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5			
Misc. Loss (Max)			122	A	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122			
Total EDG 22 Load:					1972	2057	2071	2059	1906	1886	1614	1564	2076	2052	1705	1705	1705	1705	1705	1705	1758			

This long term load can be reduced below 1750 kw by load management.