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October 25, 2017

Ms. Barcy F. McNeal, Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, OH 43215

Re: Case No. 13-197-EL-BGN, 16-1687-EL-BGA, and 17-1099-EL-BGA
Trishe Wind Ohio, LLC
Update to September 1, 2017 Filing Regarding Compliance with Condition 6 – Drawings for Final Design Plan

Dear Ms. McNeal:

Trishe Wind Ohio, LLC ("Applicant") is certified to construct a wind-powered electric generation facility in Paulding County, Ohio ("Project"), in accordance with the December 16, 2013 Opinion, Order, and Certificate ("Certificate") issued by the Ohio Power Siting Board.

Condition 6 of the Certificate requires the Applicant, at least 30 days prior to the preconstruction conference, to submit to staff for review and acceptance, one set of detailed engineering drawings of the final project design, including the facility, temporary and permanent access roads, and any crane routes, construction staging areas, and any other associated facilities and access points.

On September 1, 2017, Applicant filed a Notification of Compliance with Condition 6 of the Certificate. At this time, we are updating the September 1, 2017 filing to include 60% of the electrical collection system plans, which are attached hereto.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

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Enclosure

Attorneys for Trishe Wind Ohio, LLC



REACTIVE POWER STUDY

Northwest Ohio Wind Project

Paulding, Ohio

October 19, 2017

Prepared for:

WHITE
an IEA company

Prepared by:

Westwood

Westwood

Project Name: NW OH Wind Project	
Title	**J.O. or W.O. Number**
Reactive Power Study	0007186.00

Approvals		**Revision Number**	**Date**	**Description**
Preparer(s) Name	**Reviewer(s) Name**			
Josh Venden	Drew Szabo	0	10/06/2017	Original Release
Josh Venden	Drew Szabo	1	10/19/2017	Updated MPT tap changer

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INTRODUCTION

NW OH Wind Project is a 100 MW wind generation installation in Paulding, OH consisting 42 of GE 2.5 MW wind turbines. The turbines are grouped into four medium voltage (MV) feeders with 10 turbines on Feeders 1 and 4 and 11 turbines on Feeders 2 and 3. The feeders are connected to a main power transformer that steps the voltage up to 138kV where it interconnects with the AEP transmission system via a short overhead line segment.

OBJECTIVE

The objective of this study is to verify that the Northwest Ohio wind generation plant is capable of producing nominal rated real power 100 MW while also delivering reactive support to provide a range of operating power factors measured at the Point of Interconnection (POI), in order to maintain a specified voltage schedule. This study will also investigate the need for additional reactive support in the form of a capacitor bank at the collector substation 34.5 kV bus.

INPUTS & ASSSUMPTIONS

- Power flow analysis performed with ETAP v16.0.0C power system simulation software.
- Medium voltage AC collector electrical layout is per the Westwood Professional Services Electrical Drawings, MVAC Collection One-Line Diagrams E.200 & E.210.
- ETAP model parameters for equipment such as turbines (WTG), step-up transformers (GSU) and main power transformer (MPT) based on manufacturer data when available or typical ETAP values when information is not available.
- ETAP model parameters for MV cables based on thermal analysis using CYME Cymcap Underground Cable Thermal Analysis software.
- ETAP model parameters for overhead transmission line data based on ETAP library of standard overhead conductors.
- ETAP model parameters for utility equivalent impedance information provided by AEP.
- Appendix A shows the various ETAP inputs used.
- The 2.5 MW GE wind turbines are capable of delivering a maximum leading or lagging power factor of 0.9
- The grounded wye connection of the main power transformer secondary is connected to ground reactor of 0.6 ohms.
- The MPT has a load tap changer (LTC) on the high side windings which maintains a voltage of 1.0 pu on the low-side transformer bus.
- Reactive power direction and power factor are defined as follows:
    - A *leading* power factor at the POI when plant is generating indicates the wind farm is *absorbing* vars from the utility.
    - A *lagging* power factor at the POI when plant is generating indicates the wind farm is *supplying* vars to the utility.

METHODOLOGY

- This calculation utilizes the ETAP Load Flow Analysis module, which employs the Newton-Raphson method for power flow iterative solution. See Appendix C for the ETAP Load Flow and Losses output reports.
- 5 different cases were analyzed for each of 5 different real power generation levels. Within the ETAP model, the turbines were set to generate varying levels of rated real power output (0%, 25%, 50%, 75% and 100%). The turbine reactive power contribution was then adjusted to verify the wind plant can meet the required power factor and voltage schedules at the POI.

CONCLUSION

- Case 00-1 shows the real and reactive power demand of the wind farm with all turbines offline.
- Cases 00-2 through 00-5 demonstrate the turbines' WindFree capabilities which can provide limited var support in zero wind conditions. A maximum of 400kvar can be supplied or absorbed; for this wind plant, approximately 145kvar is necessary to counteract the reactive power losses of the collection system.
- The remaining cases show the individual turbine kW and kvar output necessary to achieve the required range of power factors and voltages at the POI.
- Cases 100-2 and 100-3 verify the need for a 4 Mvar capacitor bank at the substation 34.5 kV bus. Even with the turbines at their maximum reactive power output, additional vars are required to meet the 0.95 lagging pf with 0.95 p.u. voltage at the POI.

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Table 1: Load Flow Summary

TURBINE OUTPUT (% of PMAX)	CASE		POI	MPT	2500 kW TURBINES (42)				Total Plant Output MW	CAP BANK (Mvar)	NET AT POI					VOLTAGE SUMMARY			
	#	NAME	p.u. Volt	Tap Chgr	kW per Turbine	kvar per Turbine	kVA per Turbine	Turbine PF			MW	MVAr	MVA	pf		POI (138kV)	MPT Lowside (34.5 kV)	Extreme MV (34.5kV)	Extreme LV (690V)
0%	**00-1**	NO GEN	1.00	+1.25%	0	0	0.0	N/A	0.00	0.00	-0.231	6.116	6.120	1.000	n/a	1.000	1.002	1.004	1.004
	00-2	1PU 1LAG	1.00	nom.	0	-146	146.0	N/A	0.00	0.00	-0.229	0.017	0.229	1.000	n/a	1.000	1.000	1.000	0.997
	00-3	95PU 1LAG	0.95	-5.00%	0	-146	146.0	N/A	0.00	0.00	-0.223	0.004	0.223	1.000	n/a	0.950	1.000	1.000	0.997
	00-4	1PU 1LEAD	1.00	nom.	0	-145	145.0	N/A	0.00	0.00	-0.229	-0.026	0.230	1.000	n/a	1.000	1.000	1.000	0.997
	00-5	105PU 1LEAD	1.05	+5.00%	0	-145	145.0	N/A	0.00	0.00	-0.234	-0.011	0.234	1.000	n/a	1.050	1.000	1.000	0.997
25%	**25-1**	UNITY PF	1.00	+0.625%	625	0	625.0	1.000	26.25	0.00	25.873	4.739	26.303	0.984	Supplying	1.000	1.003	1.010	1.012
	25-2	1PU 95LAG	1.00	+1.25%	625	93	631.9	0.989	26.25	0.00	25.868	8.542	27.242	0.950	Supplying	1.000	1.002	1.011	1.014
	25-3	95PU 95LAG	0.95	-3.75%	625	93	631.9	0.989	26.25	0.00	25.873	8.546	27.248	0.950	Supplying	0.950	1.001	1.010	1.013
	25-4	1PU 95LEAD	1.00	-1.25%	625	-312	698.5	0.895	26.25	0.00	25.856	-8.512	27.221	0.950	Absorbing	1.000	1.002	1.006	0.997
	25-5	105PU 95LEAD	1.05	+3.75%	625	-312	698.5	0.895	26.25	0.00	25.851	-8.536	27.224	0.950	Absorbing	1.050	1.002	1.005	0.997
50%	**50-1**	UNITY PF	1.00	+0.625	1350	0	1350.0	1.000	56.70	0.00	55.802	-0.420	55.804	1.000	Absorbing	1.000	0.999	1.013	1.016
	50-2	1PU 95LAG	1.00	+3.125%	1350	467	1428.5	0.945	56.70	0.00	55.717	18.333	58.656	0.950	Supplying	1.000	1.003	1.023	1.035
	50-3	95PU 95LAG	0.95	-1.875%	1350	467	1428.5	0.945	56.70	0.00	55.721	18.306	58.651	0.950	Supplying	0.950	1.001	1.021	1.033
	50-4	1PU 95LEAD	1.00	-1.875%	1350	-415	1412.3	0.956	56.70	0.00	55.748	-18.325	58.683	0.950	Absorbing	1.000	0.999	1.008	0.993
	50-5	105PU 95LEAD	1.05	+3.125%	1350	-415	1412.3	0.956	56.70	0.00	55.741	-18.366	58.689	0.950	Absorbing	1.050	0.998	1.007	0.992
75%	**75-1**	UNITY PF	1.00	nom.	1875	0	1875.0	1.000	78.75	0.00	77.250	-6.360	77.511	0.997	Absorbing	1.000	1.000	1.019	1.022
	75-2	1PU 95LAG	1.00	+5.00%	1875	810	2042.5	0.918	78.75	0.00	77.030	25.328	81.087	0.950	Supplying	1.000	1.001	1.029	1.049
	75-3	95PU 95LAG	0.95	nom.	1875	810	2042.5	0.918	78.75	0.00	77.029	25.248	81.061	0.950	Supplying	0.950	0.998	1.027	1.047
	75-4	1PU 95LEAD	1.00	-2.50%	1875	-433	1924.3	0.974	78.75	0.00	77.174	-25.241	81.197	0.950	Absorbing	1.000	0.999	1.012	1.007
	75-5	105PU 95LEAD	1.05	+2.50%	1875	-433	1924.3	0.974	78.75	0.00	77.166	-25.308	81.210	0.950	Absorbing	1.050	0.998	1.011	1.006
100%	**100-1**	UNITY PF	1.00	-0.625%	2500	0	2500.0	1.000	105.00	0.00	102.552	-16.056	103.801	0.988	Absorbing	1.000	0.998	1.022	1.027
	100-2	1PU 95LAG	1.00	+7.50%	2500	1210	2777.4	0.900	105.00	4.00	102.115	33.723	107.539	0.950	Supplying	1.000	0.999	1.038	1.066
	100-3	95PU 95LAG	0.95	+2.50%	2500	1210	2777.4	0.900	105.00	4.00	102.105	33.504	107.461	0.950	Supplying	0.950	1.001	1.039	1.067
	100-4	105PU 95LAG	1.05	+10.00%	2500	1160	2756.0	0.907	105.00	4.00	102.236	33.427	107.562	0.950	Supplying	1.050	0.997	1.036	1.064
	100-4	1PU 95LEAD	1.00	-3.125%	2500	-405	2532.6	0.987	105.00	0.00	102.472	-33.779	107.896	0.950	Absorbing	1.000	1.000	1.019	1.015
	100-5	95PU 95LEAD	0.95	-8.125%	2500	-402	2532.1	0.987	105.00	0.00	102.487	-33.506	107.825	0.950	Absorbing	0.950	0.994	1.013	1.009
	100-6	105PU 95LEAD	1.05	+1.875%	2500	-400	2531.8	0.987	105.00	0.00	102.462	-33.675	107.854	0.950	Absorbing	1.050	0.998	1.017	1.013

APPENDIX A: ETAP MODEL INPUTS

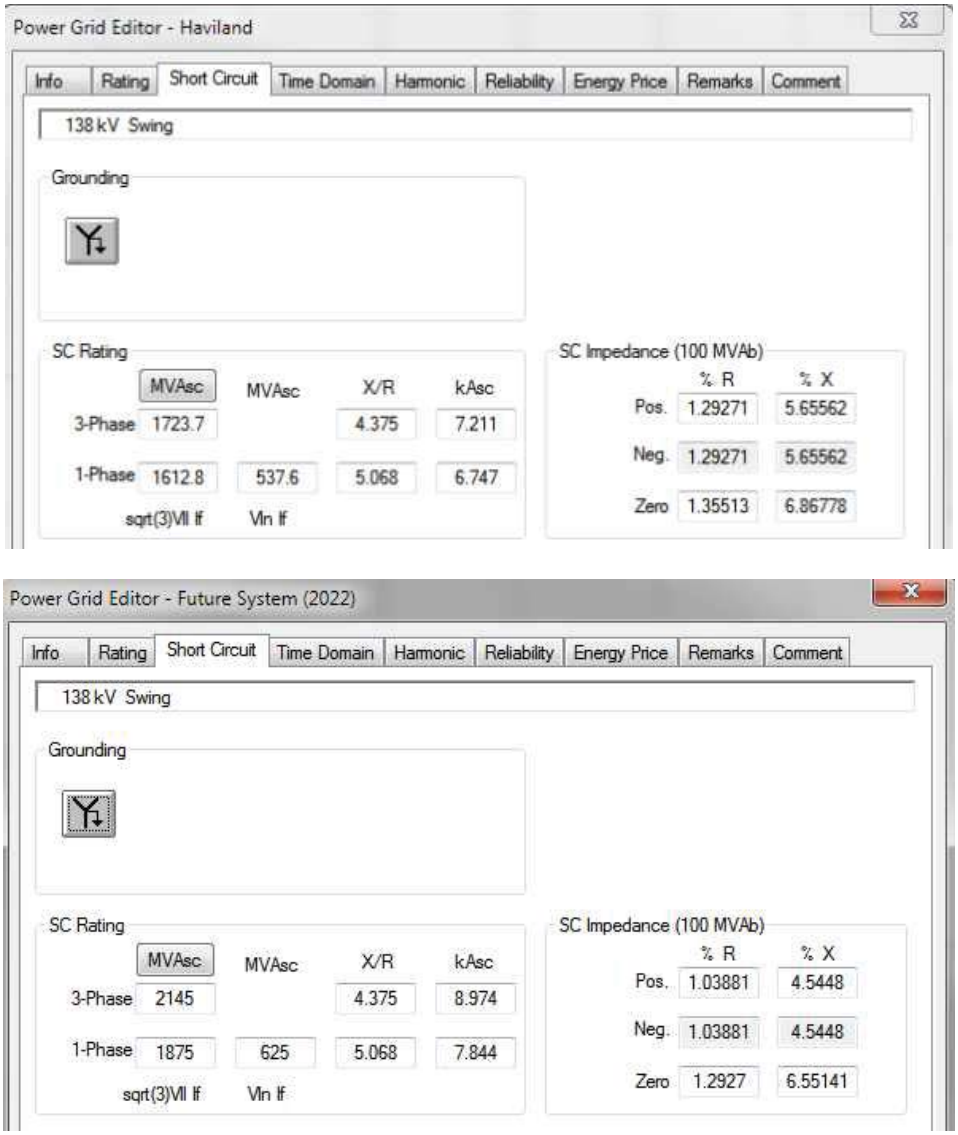


Figure 1: Utility Equivalent Data

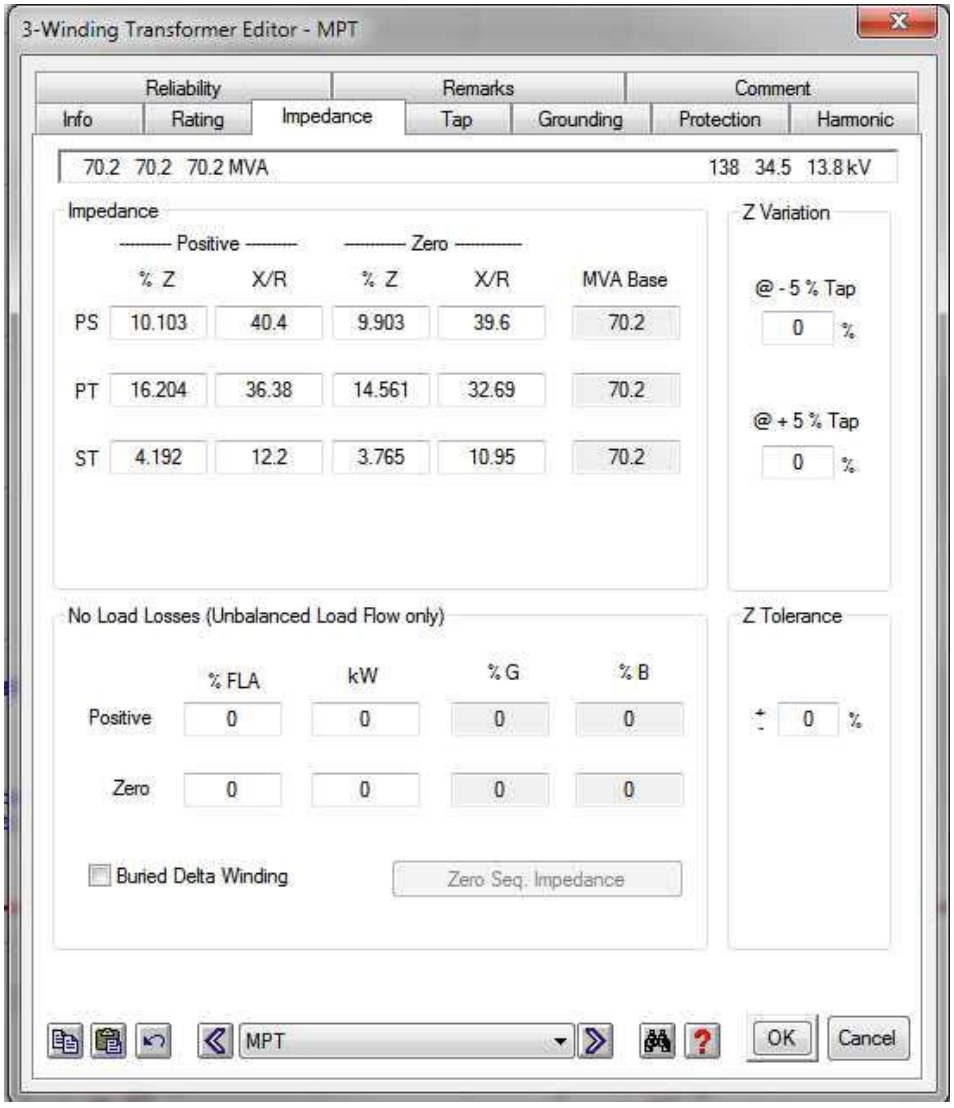


Figure 2: Main Power Transformer Impedance

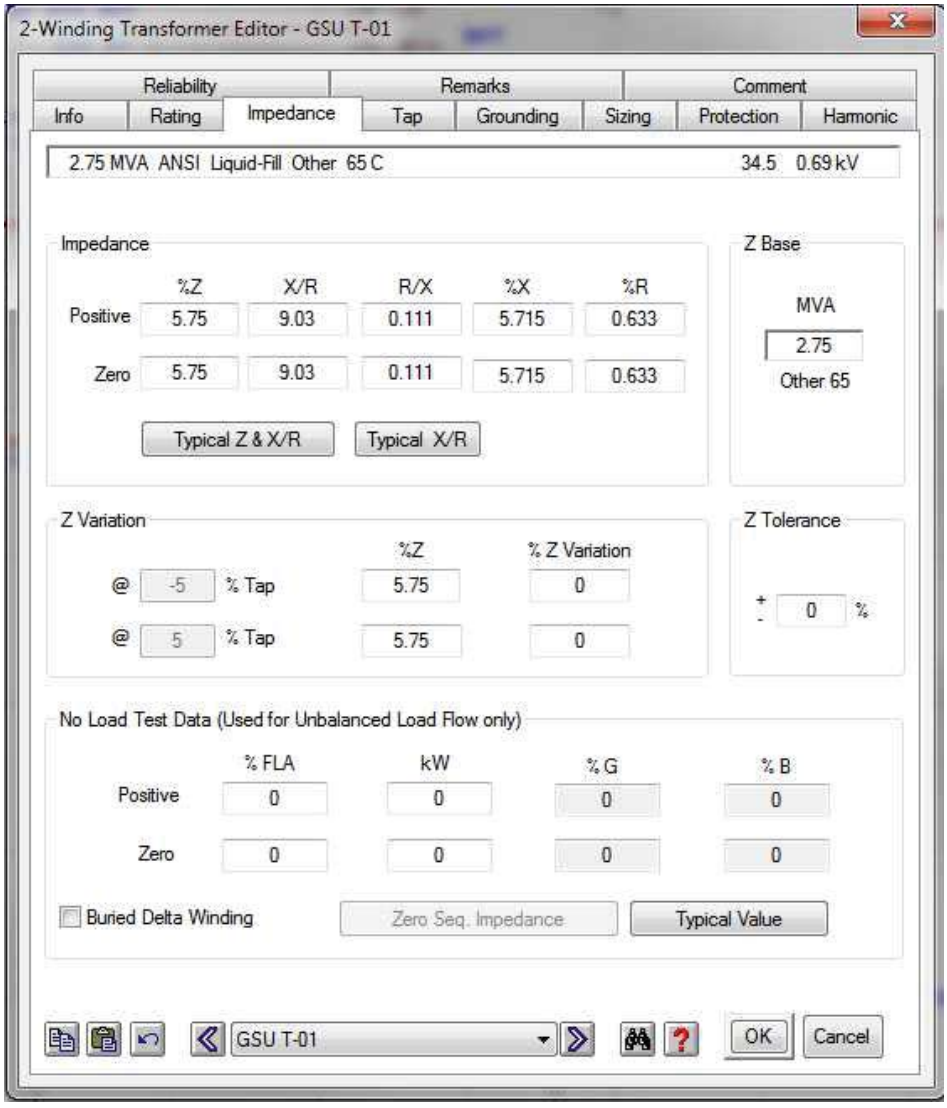


Figure 3: Step-Up Transformer Impedance Data

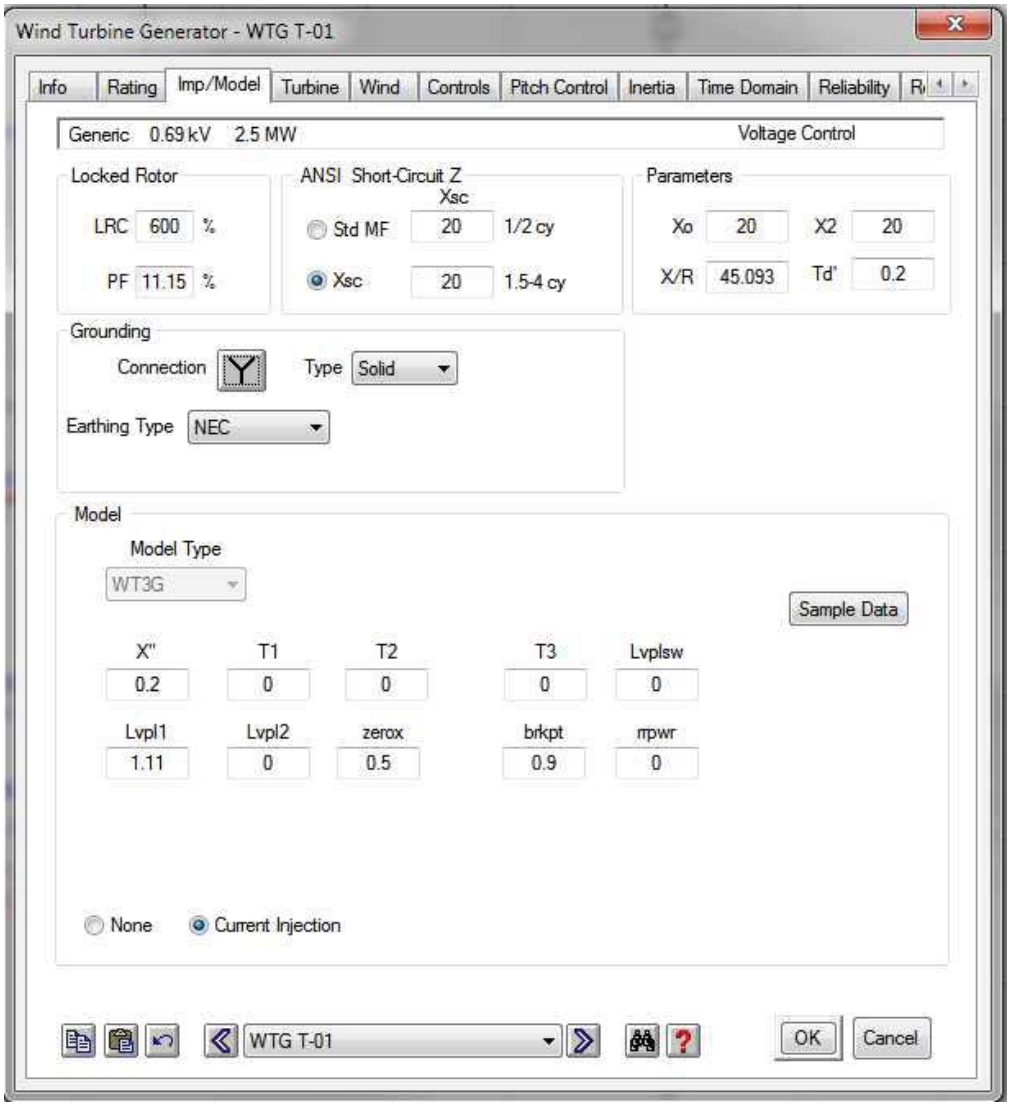


Figure 4: Turbine Impedance/Short Circuit Data

NW_OH 1/C AL XLPE 35 kV 100 % Non-Mag. 60 Hz Ohms/1000ft RHO 200°C.cm/W

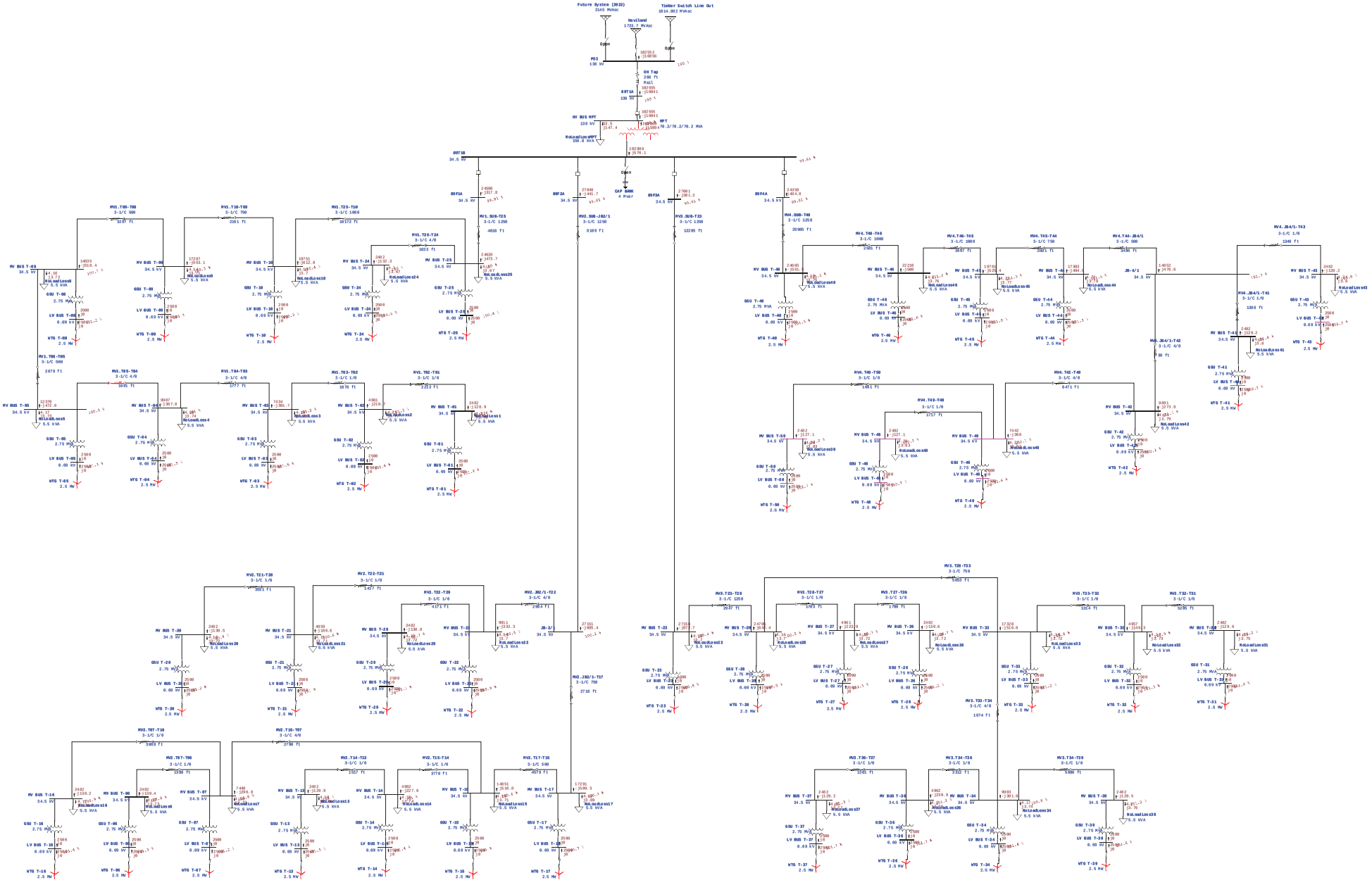
Ampacity | Impedance | Physical | Cable Pulling

		Phase		Ground/Neutral		R	X	L	Y	Ro	Xo	Lo	Yo	Rdc
	Avail.	Code	Size	#	Size	90°C	60 Hz	60 Hz	60 Hz	90°C	60 Hz	60 Hz	60 Hz	25°C
1	Yes	1/0 - 2/3 CN	1/0	18	16	0.24087	0.05182	0.00014	1.77E-05	0.35886	0.05482	0.00015	1.77E-05	0.18596
2	Yes	4/0 - 1/2 CN	4/0	17	14	0.11303	0.04679	0.00012	2.2E-05	0.28416	0.07373	0.0002	2.2E-05	0.08673
3	Yes	500 - 1/3 CN	500	16	12	0.4939	0.04115	0.00011	3.05E-05	0.16756	0.04488	0.00012	3.05E-05	0.0361
4	Yes	750 - 1/6 CN	750	19	14	0.0343	0.03865	0.0001	3.56E-05	0.18978	0.05914	0.00016	3.56E-05	0.0248
5	Yes	1000 - 1/6 CN	1000	25	14	0.02568	0.03703	0.0001	3.98E-05	0.20941	0.07373	0.0002	3.98E-05	0.01814
6	Yes	1250 - 1/6 CN	1250	20	12	0.02048	0.03537	9E-05	4.36E-05	0.23977	0.09952	0.00026	4.36E-05	0.01422

Figure 5: Cable Impedance Data

APPENDIX B: ETAP SINGLE LINE DIAGRAM

One-Line Diagram - NW_OH (Load Flow Analysis)



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APPENDIX C: LOAD FLOW SUMMARY REPORTS

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
89F1A	34.500	100.285	0.0	0	0	0	0	MV BUS T-25	0.041	-1.228	20.5	-3.4	
								89T1B	-0.041	1.228	20.5	-3.4	
89F2A	34.500	100.285	0.0	0	0	0	0	JB-2/1	0.046	-1.218	20.3	-3.7	
								89T1B	-0.046	1.218	20.3	-3.7	
89F3A	34.500	100.285	0.0	0	0	0	0	MV BUS T-23	0.046	-1.478	24.7	-3.1	
								89T1B	-0.046	1.478	24.7	-3.1	
89F4A	34.500	100.285	0.0	0	0	0	0	MV BUS T-40	0.043	-2.390	39.9	-1.8	
								89T1B	-0.043	2.390	39.9	-1.8	
89T1A	138.000	100.001	0.0	0	0	0	0	POI	-0.231	6.110	25.6	-3.8	
								HV BUS MPT	0.231	-6.110	25.6	-3.8	
89T1B	34.500	100.285	0.0	0	0	0	0	89F4A	0.043	-2.390	39.9	-1.8	
								89F3A	0.046	-1.478	24.7	-3.1	
								89F2A	0.046	-1.218	20.3	-3.7	
								89F1A	0.041	-1.228	20.5	-3.4	
								MPT~3	-0.176	6.315	105.4	-2.8	
								& HV BUS MPT					
HV BUS MPT	138.000	100.001	0.0	0	0	0.054	0.147	89T1A	-0.231	6.110	25.6	-3.8	
								89T1B	0.177	-6.257	26.2	-2.8	0.625
								& MPT~3					
JB-2/1	34.500	100.309	0.0	0	0	0	0	MV BUS T-17	0.029	-0.537	9.0	-5.4	
								MV BUS T-22	0.017	-0.257	4.3	-6.4	
								89F2A	-0.045	0.794	13.3	-5.7	
JB-4/1	34.500	100.447	-0.1	0	0	0	0	MV BUS T-41	0.004	-0.026	0.4	-15.8	
								MV BUS T-42	0.017	-0.229	3.8	-7.2	
								MV BUS T-43	0.004	-0.025	0.4	-16.3	
								MV BUS T-44	-0.025	0.279	4.7	-8.8	
LV BUS T-01	0.690	100.331	-0.1	0	0	0	0	MV BUS T-01	0.000	0.000	0.0	0.0	
LV BUS T-02	0.690	100.331	-0.1	0	0	0	0	MV BUS T-02	0.000	0.000	0.0	0.0	
LV BUS T-03	0.690	100.331	-0.1	0	0	0	0	MV BUS T-03	0.000	0.000	0.0	0.0	
LV BUS T-04	0.690	100.331	0.0	0	0	0	0	MV BUS T-04	0.000	0.000	0.0	0.0	
LV BUS T-05	0.690	100.330	0.0	0	0	0	0	MV BUS T-05	0.000	0.000	0.0	0.0	
LV BUS T-06	0.690	100.319	0.0	0	0	0	0	MV BUS T-06	0.000	0.000	0.0	0.0	
LV BUS T-07	0.690	100.319	0.0	0	0	0	0	MV BUS T-07	0.000	0.000	0.0	0.0	
LV BUS T-08	0.690	100.328	0.0	0	0	0	0	MV BUS T-08	0.000	0.000	0.0	0.0	
LV BUS T-09	0.690	100.325	0.0	0	0	0	0	MV BUS T-09	0.000	0.000	0.0	0.0	
LV BUS T-10	0.690	100.322	0.0	0	0	0	0	MV BUS T-10	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
LV BUS T-13	0.690	100.318	0.0	0	0	0	0	MV BUS T-13	0.000	0.000	0.0	0.0	
LV BUS T-14	0.690	100.318	0.0	0	0	0	0	MV BUS T-14	0.000	0.000	0.0	0.0	
LV BUS T-15	0.690	100.318	0.0	0	0	0	0	MV BUS T-15	0.000	0.000	0.0	0.0	
LV BUS T-16	0.690	100.319	0.0	0	0	0	0	MV BUS T-16	0.000	0.000	0.0	0.0	
LV BUS T-17	0.690	100.313	0.0	0	0	0	0	MV BUS T-17	0.000	0.000	0.0	0.0	
LV BUS T-20	0.690	100.311	0.0	0	0	0	0	MV BUS T-20	0.000	0.000	0.0	0.0	
LV BUS T-21	0.690	100.311	0.0	0	0	0	0	MV BUS T-21	0.000	0.000	0.0	0.0	
LV BUS T-22	0.690	100.311	0.0	0	0	0	0	MV BUS T-22	0.000	0.000	0.0	0.0	
LV BUS T-23	0.690	100.327	0.0	0	0	0	0	MV BUS T-23	0.000	0.000	0.0	0.0	
LV BUS T-24	0.690	100.300	0.0	0	0	0	0	MV BUS T-24	0.000	0.000	0.0	0.0	
LV BUS T-25	0.690	100.300	0.0	0	0	0	0	MV BUS T-25	0.000	0.000	0.0	0.0	
LV BUS T-26	0.690	100.333	0.0	0	0	0	0	MV BUS T-26	0.000	0.000	0.0	0.0	
LV BUS T-27	0.690	100.333	0.0	0	0	0	0	MV BUS T-27	0.000	0.000	0.0	0.0	
LV BUS T-28	0.690	100.333	0.0	0	0	0	0	MV BUS T-28	0.000	0.000	0.0	0.0	
LV BUS T-29	0.690	100.311	0.0	0	0	0	0	MV BUS T-29	0.000	0.000	0.0	0.0	
LV BUS T-31	0.690	100.343	-0.1	0	0	0	0	MV BUS T-31	0.000	0.000	0.0	0.0	
LV BUS T-32	0.690	100.342	-0.1	0	0	0	0	MV BUS T-32	0.000	0.000	0.0	0.0	
LV BUS T-33	0.690	100.342	0.0	0	0	0	0	MV BUS T-33	0.000	0.000	0.0	0.0	
LV BUS T-34	0.690	100.343	-0.1	0	0	0	0	MV BUS T-34	0.000	0.000	0.0	0.0	
LV BUS T-36	0.690	100.343	-0.1	0	0	0	0	MV BUS T-36	0.000	0.000	0.0	0.0	
LV BUS T-37	0.690	100.343	-0.1	0	0	0	0	MV BUS T-37	0.000	0.000	0.0	0.0	
LV BUS T-39	0.690	100.344	-0.1	0	0	0	0	MV BUS T-39	0.000	0.000	0.0	0.0	
LV BUS T-40	0.690	100.426	-0.1	0	0	0	0	MV BUS T-40	0.000	0.000	0.0	0.0	
LV BUS T-41	0.690	100.447	-0.1	0	0	0	0	MV BUS T-41	0.000	0.000	0.0	0.0	
LV BUS T-42	0.690	100.447	-0.1	0	0	0	0	MV BUS T-42	0.000	0.000	0.0	0.0	
LV BUS T-43	0.690	100.447	-0.1	0	0	0	0	MV BUS T-43	0.000	0.000	0.0	0.0	
LV BUS T-44	0.690	100.443	-0.1	0	0	0	0	MV BUS T-44	0.000	0.000	0.0	0.0	
LV BUS T-45	0.690	100.439	-0.1	0	0	0	0	MV BUS T-45	0.000	0.000	0.0	0.0	
LV BUS T-46	0.690	100.432	-0.1	0	0	0	0	MV BUS T-46	0.000	0.000	0.0	0.0	
LV BUS T-48	0.690	100.450	-0.1	0	0	0	0	MV BUS T-48	0.000	0.000	0.0	0.0	
LV BUS T-49	0.690	100.450	-0.1	0	0	0	0	MV BUS T-49	0.000	0.000	0.0	0.0	
LV BUS T-50	0.690	100.450	-0.1	0	0	0	0	MV BUS T-50	0.000	0.000	0.0	0.0	
MV BUS T-01	34.500	100.331	-0.1	0	0	0.004	0.004	MV BUS T-02	-0.004	-0.004	0.1	74.5	
								LV BUS T-01	0.000	0.000	0.0	0.0	
MV BUS T-02	34.500	100.331	-0.1	0	0	0.004	0.004	MV BUS T-01	0.004	-0.043	0.7	-9.5	
								MV BUS T-03	-0.008	0.040	0.7	-20.4	
								LV BUS T-02	0.000	0.000	0.0	0.0	
MV BUS T-03	34.500	100.331	-0.1	0	0	0.004	0.004	MV BUS T-02	0.008	-0.079	1.3	-10.3	
								MV BUS T-04	-0.012	0.076	1.3	-16.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								LV BUS T-03	0.000	0.000	0.0	0.0	
MV BUS T-04	34.500	100.331	0.0	0	0	0.004	0.004	MV BUS T-03	0.012	-0.123	2.1	-10.1	
								MV BUS T-05	-0.017	0.119	2.0	-13.8	
								LV BUS T-04	0.000	0.000	0.0	0.0	
MV BUS T-05	34.500	100.330	0.0	0	0	0.004	0.004	MV BUS T-04	0.017	-0.171	2.9	-9.6	
								MV BUS T-08	-0.021	0.168	2.8	-12.2	
								LV BUS T-05	0.000	0.000	0.0	0.0	
MV BUS T-06	34.500	100.319	0.0	0	0	0.004	0.004	MV BUS T-07	-0.004	-0.004	0.1	74.5	
								LV BUS T-06	0.000	0.000	0.0	0.0	
MV BUS T-07	34.500	100.319	0.0	0	0	0.004	0.004	MV BUS T-06	0.004	-0.026	0.4	-15.8	
								MV BUS T-16	0.004	-0.061	1.0	-6.7	
								MV BUS T-15	-0.012	0.083	1.4	-14.7	
								LV BUS T-07	0.000	0.000	0.0	0.0	
MV BUS T-08	34.500	100.328	0.0	0	0	0.004	0.004	MV BUS T-05	0.021	-0.266	4.4	-7.7	
								MV BUS T-09	-0.025	0.262	4.4	-9.4	
								LV BUS T-08	0.000	0.000	0.0	0.0	
MV BUS T-09	34.500	100.325	0.0	0	0	0.004	0.004	MV BUS T-08	0.025	-0.382	6.4	-6.5	
								MV BUS T-10	-0.029	0.379	6.3	-7.6	
								LV BUS T-09	0.000	0.000	0.0	0.0	
MV BUS T-10	34.500	100.322	0.0	0	0	0.004	0.004	MV BUS T-09	0.029	-0.471	7.9	-6.1	
								MV BUS T-25	-0.033	0.467	7.8	-7.1	
								LV BUS T-10	0.000	0.000	0.0	0.0	
MV BUS T-13	34.500	100.318	0.0	0	0	0.004	0.004	MV BUS T-14	-0.004	-0.004	0.1	74.5	
								LV BUS T-13	0.000	0.000	0.0	0.0	
MV BUS T-14	34.500	100.318	0.0	0	0	0.004	0.004	MV BUS T-13	0.004	-0.028	0.5	-14.3	
								MV BUS T-15	-0.008	0.025	0.4	-31.6	
								LV BUS T-14	0.000	0.000	0.0	0.0	
MV BUS T-15	34.500	100.318	0.0	0	0	0.004	0.004	MV BUS T-07	0.012	-0.157	2.6	-7.9	
								MV BUS T-14	0.008	-0.105	1.8	-7.9	
								MV BUS T-17	-0.025	0.258	4.3	-9.6	
								LV BUS T-15	0.000	0.000	0.0	0.0	
MV BUS T-16	34.500	100.319	0.0	0	0	0.004	0.004	MV BUS T-07	-0.004	-0.004	0.1	74.5	
								LV BUS T-16	0.000	0.000	0.0	0.0	
MV BUS T-17	34.500	100.313	0.0	0	0	0.004	0.004	JB-2/1	-0.029	0.422	7.0	-6.8	
								MV BUS T-15	0.025	-0.425	7.1	-5.8	
								LV BUS T-17	0.000	0.000	0.0	0.0	
MV BUS T-20	34.500	100.311	0.0	0	0	0.004	0.004	MV BUS T-21	-0.004	-0.004	0.1	74.5	
								LV BUS T-20	0.000	0.000	0.0	0.0	
MV BUS T-21	34.500	100.311	0.0	0	0	0.004	0.004	MV BUS T-20	0.004	-0.072	1.2	-5.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								MV BUS T-22	-0.008	0.068	1.1	-12.1	
								LV BUS T-21	0.000	0.000	0.0	0.0	
MV BUS T-22	34.500	100.311	0.0	0	0	0.004	0.004	JB-2/1	-0.016	0.179	3.0	-9.2	
								MV BUS T-21	0.008	-0.098	1.6	-8.4	
								MV BUS T-29	0.004	-0.085	1.4	-4.9	
								LV BUS T-22	0.000	0.000	0.0	0.0	
MV BUS T-23	34.500	100.327	0.0	0	0	0.004	0.004	89F3A	-0.045	0.838	14.0	-5.4	
								MV BUS T-28	0.041	-0.841	14.0	-4.9	
								LV BUS T-23	0.000	0.000	0.0	0.0	
MV BUS T-24	34.500	100.300	0.0	0	0	0.004	0.004	MV BUS T-25	-0.004	-0.004	0.1	74.5	
								LV BUS T-24	0.000	0.000	0.0	0.0	
MV BUS T-25	34.500	100.300	0.0	0	0	0.004	0.004	89F1A	-0.041	0.987	16.5	-4.2	
								MV BUS T-10	0.033	-0.952	15.9	-3.5	
								MV BUS T-24	0.004	-0.039	0.7	-10.4	
								LV BUS T-25	0.000	0.000	0.0	0.0	
MV BUS T-26	34.500	100.333	0.0	0	0	0.004	0.004	MV BUS T-27	-0.004	-0.004	0.1	74.5	
								LV BUS T-26	0.000	0.000	0.0	0.0	
MV BUS T-27	34.500	100.333	0.0	0	0	0.004	0.004	MV BUS T-26	0.004	-0.034	0.6	-12.0	
								MV BUS T-28	-0.008	0.030	0.5	-26.2	
								LV BUS T-27	0.000	0.000	0.0	0.0	
MV BUS T-28	34.500	100.333	0.0	0	0	0.004	0.004	MV BUS T-23	-0.041	0.687	11.5	-6.0	
								MV BUS T-27	0.008	-0.066	1.1	-12.3	
								MV BUS T-33	0.029	-0.625	10.4	-4.6	
								LV BUS T-28	0.000	0.000	0.0	0.0	
MV BUS T-29	34.500	100.311	0.0	0	0	0.004	0.004	MV BUS T-22	-0.004	-0.004	0.1	74.5	
								LV BUS T-29	0.000	0.000	0.0	0.0	
MV BUS T-31	34.500	100.343	-0.1	0	0	0.004	0.004	MV BUS T-32	-0.004	-0.004	0.1	74.5	
								LV BUS T-31	0.000	0.000	0.0	0.0	
MV BUS T-32	34.500	100.342	-0.1	0	0	0.004	0.004	MV BUS T-31	0.004	-0.107	1.8	-3.9	
								MV BUS T-33	-0.008	0.103	1.7	-8.0	
								LV BUS T-32	0.000	0.000	0.0	0.0	
MV BUS T-33	34.500	100.342	0.0	0	0	0.004	0.004	MV BUS T-28	-0.029	0.375	6.3	-7.7	
								MV BUS T-32	0.008	-0.131	2.2	-6.3	
								MV BUS T-34	0.017	-0.248	4.1	-6.7	
								LV BUS T-33	0.000	0.000	0.0	0.0	
MV BUS T-34	34.500	100.343	-0.1	0	0	0.004	0.004	MV BUS T-33	-0.017	0.204	3.4	-8.1	
								MV BUS T-36	0.008	-0.090	1.5	-9.1	
								MV BUS T-39	0.004	-0.117	1.9	-3.5	
								LV BUS T-34	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
MV BUS T-36	34.500	100.343	-0.1	0	0	0.004	0.004	MV BUS T-34	-0.008	0.020	0.4	-37.8	
								MV BUS T-37	0.004	-0.024	0.4	-17.0	
								LV BUS T-36	0.000	0.000	0.0	0.0	
MV BUS T-37	34.500	100.343	-0.1	0	0	0.004	0.004	MV BUS T-36	-0.004	-0.004	0.1	74.5	
								LV BUS T-37	0.000	0.000	0.0	0.0	
MV BUS T-39	34.500	100.344	-0.1	0	0	0.004	0.004	MV BUS T-34	-0.004	-0.004	0.1	74.5	
								LV BUS T-39	0.000	0.000	0.0	0.0	
MV BUS T-40	34.500	100.426	-0.1	0	0	0.004	0.004	89F4A	-0.041	0.830	13.8	-5.0	
								MV BUS T-46	0.037	-0.833	13.9	-4.5	
								LV BUS T-40	0.000	0.000	0.0	0.0	
MV BUS T-41	34.500	100.447	-0.1	0	0	0.004	0.004	JB-4/1	-0.004	-0.004	0.1	74.5	
								LV BUS T-41	0.000	0.000	0.0	0.0	
MV BUS T-42	34.500	100.447	-0.1	0	0	0.004	0.004	JB-4/1	-0.017	0.228	3.8	-7.2	
								MV BUS T-49	0.012	-0.232	3.9	-5.4	
								LV BUS T-42	0.000	0.000	0.0	0.0	
MV BUS T-43	34.500	100.447	-0.1	0	0	0.004	0.004	JB-4/1	-0.004	-0.004	0.1	74.5	
								LV BUS T-43	0.000	0.000	0.0	0.0	
MV BUS T-44	34.500	100.443	-0.1	0	0	0.004	0.004	JB-4/1	0.025	-0.407	6.8	-6.1	
								MV BUS T-45	-0.029	0.403	6.7	-7.2	
								LV BUS T-44	0.000	0.000	0.0	0.0	
MV BUS T-45	34.500	100.439	-0.1	0	0	0.004	0.004	MV BUS T-44	0.029	-0.527	8.8	-5.5	
								MV BUS T-46	-0.033	0.523	8.7	-6.3	
								LV BUS T-45	0.000	0.000	0.0	0.0	
MV BUS T-46	34.500	100.432	-0.1	0	0	0.004	0.004	MV BUS T-40	-0.037	0.710	11.8	-5.2	
								MV BUS T-45	0.033	-0.714	11.9	-4.6	
								LV BUS T-46	0.000	0.000	0.0	0.0	
MV BUS T-48	34.500	100.450	-0.1	0	0	0.004	0.004	MV BUS T-49	-0.004	-0.004	0.1	74.5	
								LV BUS T-48	0.000	0.000	0.0	0.0	
MV BUS T-49	34.500	100.450	-0.1	0	0	0.004	0.004	MV BUS T-42	-0.012	0.061	1.0	-20.0	
								MV BUS T-48	0.004	-0.033	0.6	-12.5	
								MV BUS T-50	0.004	-0.032	0.5	-13.0	
								LV BUS T-49	0.000	0.000	0.0	0.0	
MV BUS T-50	34.500	100.450	-0.1	0	0	0.004	0.004	MV BUS T-49	-0.004	-0.004	0.1	74.5	
								LV BUS T-50	0.000	0.000	0.0	0.0	
* POI	138.000	100.000	0.0	0.231	-6.116	0	0	89T1A	0.231	-6.116	25.6	-3.8	
MPT~3	13.800	100.372	0.0	0	0	0	0	HV BUS MPT & 89T1B	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

\# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
89F1A	34.500	100.017	0.0	0	0	0	0	MV BUS T-25	0.042	0.244	4.1	16.9	
								89T1B	-0.042	-0.244	4.1	16.9	
89F2A	34.500	100.017	0.0	0	0	0	0	JB-2/1	0.046	0.401	6.8	11.4	
								89T1B	-0.046	-0.401	6.8	11.4	
89F3A	34.500	100.017	0.0	0	0	0	0	MV BUS T-23	0.046	0.142	2.5	30.8	
								89T1B	-0.046	-0.142	2.5	30.8	
89F4A	34.500	100.017	0.0	0	0	0	0	MV BUS T-40	0.042	-0.911	15.3	-4.6	
								89T1B	-0.042	0.911	15.3	-4.6	
89T1A	138.000	100.000	0.0	0	0	0	0	POI	-0.229	-0.023	1.0	99.5	
								HV BUS MPT	0.229	0.023	1.0	99.5	
89T1B	34.500	100.017	0.0	0	0	0	0	89F4A	0.042	-0.911	15.3	-4.6	
								89F3A	0.046	0.142	2.5	30.8	
								89F2A	0.046	0.401	6.8	11.4	
								89F1A	0.042	0.244	4.1	16.9	
								MPT~3	-0.175	0.124	3.6	-81.5	
								& HV BUS MPT					
HV BUS MPT	138.000	100.000	0.0	0	0	0.054	0.147	89T1A	-0.229	-0.023	1.0	99.5	
								89T1B	0.175	-0.124	0.9	-81.6	
								& MPT~3					
JB-2/1	34.500	100.002	0.0	0	0	0	0	MV BUS T-17	0.029	0.491	8.2	5.9	
								MV BUS T-22	0.017	0.330	5.5	5.0	
								89F2A	-0.046	-0.822	13.8	5.6	
JB-4/1	34.500	100.003	0.0	0	0	0	0	MV BUS T-41	0.004	0.121	2.0	3.4	
								MV BUS T-42	0.017	0.359	6.0	4.6	
								MV BUS T-43	0.004	0.122	2.0	3.4	
								MV BUS T-44	-0.025	-0.602	10.1	4.1	
LV BUS T-01	0.690	99.666	0.0	0.000	-0.146	0	0	MV BUS T-01	0.000	-0.146	122.6	0.0	
LV BUS T-02	0.690	99.667	0.0	0.000	-0.146	0	0	MV BUS T-02	0.000	-0.146	122.6	0.0	
LV BUS T-03	0.690	99.669	0.0	0.000	-0.146	0	0	MV BUS T-03	0.000	-0.146	122.6	0.0	
LV BUS T-04	0.690	99.672	0.0	0.000	-0.146	0	0	MV BUS T-04	0.000	-0.146	122.6	0.0	
LV BUS T-05	0.690	99.676	0.0	0.000	-0.146	0	0	MV BUS T-05	0.000	-0.146	122.6	0.0	
LV BUS T-06	0.690	99.679	0.0	0.000	-0.146	0	0	MV BUS T-06	0.000	-0.146	122.6	0.0	
LV BUS T-07	0.690	99.680	0.0	0.000	-0.146	0	0	MV BUS T-07	0.000	-0.146	122.6	0.0	
LV BUS T-08	0.690	99.681	0.0	0.000	-0.146	0	0	MV BUS T-08	0.000	-0.146	122.6	0.0	
LV BUS T-09	0.690	99.688	0.0	0.000	-0.146	0	0	MV BUS T-09	0.000	-0.146	122.5	0.0	
LV BUS T-10	0.690	99.692	0.0	0.000	-0.146	0	0	MV BUS T-10	0.000	-0.146	122.5	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
LV BUS T-13	0.690	99.678	0.0	0.000	-0.146	0	0	MV BUS T-13	0.000	-0.146	122.6	0.0	
LV BUS T-14	0.690	99.679	0.0	0.000	-0.146	0	0	MV BUS T-14	0.000	-0.146	122.6	0.0	
LV BUS T-15	0.690	99.683	0.0	0.000	-0.146	0	0	MV BUS T-15	0.000	-0.146	122.6	0.0	
LV BUS T-16	0.690	99.678	0.0	0.000	-0.146	0	0	MV BUS T-16	0.000	-0.146	122.6	0.0	
LV BUS T-17	0.690	99.692	0.0	0.000	-0.146	0	0	MV BUS T-17	0.000	-0.146	122.5	0.0	
LV BUS T-20	0.690	99.689	0.0	0.000	-0.146	0	0	MV BUS T-20	0.000	-0.146	122.5	0.0	
LV BUS T-21	0.690	99.691	0.0	0.000	-0.146	0	0	MV BUS T-21	0.000	-0.146	122.5	0.0	
LV BUS T-22	0.690	99.693	0.0	0.000	-0.146	0	0	MV BUS T-22	0.000	-0.146	122.5	0.0	
LV BUS T-23	0.690	99.695	0.0	0.000	-0.146	0	0	MV BUS T-23	0.000	-0.146	122.5	0.0	
LV BUS T-24	0.690	99.707	0.0	0.000	-0.146	0	0	MV BUS T-24	0.000	-0.146	122.5	0.0	
LV BUS T-25	0.690	99.708	0.0	0.000	-0.146	0	0	MV BUS T-25	0.000	-0.146	122.5	0.0	
LV BUS T-26	0.690	99.685	0.0	0.000	-0.146	0	0	MV BUS T-26	0.000	-0.146	122.5	0.0	
LV BUS T-27	0.690	99.687	0.0	0.000	-0.146	0	0	MV BUS T-27	0.000	-0.146	122.5	0.0	
LV BUS T-28	0.690	99.689	0.0	0.000	-0.146	0	0	MV BUS T-28	0.000	-0.146	122.5	0.0	
LV BUS T-29	0.690	99.690	0.0	0.000	-0.146	0	0	MV BUS T-29	0.000	-0.146	122.5	0.0	
LV BUS T-31	0.690	99.674	0.0	0.000	-0.146	0	0	MV BUS T-31	0.000	-0.146	122.6	0.0	
LV BUS T-32	0.690	99.677	0.0	0.000	-0.146	0	0	MV BUS T-32	0.000	-0.146	122.6	0.0	
LV BUS T-33	0.690	99.678	0.0	0.000	-0.146	0	0	MV BUS T-33	0.000	-0.146	122.6	0.0	
LV BUS T-34	0.690	99.675	0.0	0.000	-0.146	0	0	MV BUS T-34	0.000	-0.146	122.6	0.0	
LV BUS T-36	0.690	99.671	0.0	0.000	-0.146	0	0	MV BUS T-36	0.000	-0.146	122.6	0.0	
LV BUS T-37	0.690	99.671	0.0	0.000	-0.146	0	0	MV BUS T-37	0.000	-0.146	122.6	0.0	
LV BUS T-39	0.690	99.673	0.0	0.000	-0.146	0	0	MV BUS T-39	0.000	-0.146	122.6	0.0	
LV BUS T-40	0.690	99.723	0.0	0.000	-0.146	0	0	MV BUS T-40	0.000	-0.146	122.5	0.0	
LV BUS T-41	0.690	99.698	0.0	0.000	-0.146	0	0	MV BUS T-41	0.000	-0.146	122.5	0.0	
LV BUS T-42	0.690	99.698	0.0	0.000	-0.146	0	0	MV BUS T-42	0.000	-0.146	122.5	0.0	
LV BUS T-43	0.690	99.698	0.0	0.000	-0.146	0	0	MV BUS T-43	0.000	-0.146	122.5	0.0	
LV BUS T-44	0.690	99.705	0.0	0.000	-0.146	0	0	MV BUS T-44	0.000	-0.146	122.5	0.0	
LV BUS T-45	0.690	99.711	0.0	0.000	-0.146	0	0	MV BUS T-45	0.000	-0.146	122.5	0.0	
LV BUS T-46	0.690	99.718	0.0	0.000	-0.146	0	0	MV BUS T-46	0.000	-0.146	122.5	0.0	
LV BUS T-48	0.690	99.689	0.0	0.000	-0.146	0	0	MV BUS T-48	0.000	-0.146	122.5	0.0	
LV BUS T-49	0.690	99.690	0.0	0.000	-0.146	0	0	MV BUS T-49	0.000	-0.146	122.5	0.0	
LV BUS T-50	0.690	99.689	0.0	0.000	-0.146	0	0	MV BUS T-50	0.000	-0.146	122.5	0.0	
MV BUS T-01	34.500	99.970	0.0	0	0	0.004	0.004	MV BUS T-02	-0.004	-0.150	2.5	2.8	
								LV BUS T-01	0.000	0.146	2.5	0.0	
MV BUS T-02	34.500	99.972	0.0	0	0	0.004	0.004	MV BUS T-01	0.004	0.104	1.7	4.0	
								MV BUS T-03	-0.008	-0.254	4.2	3.3	
								LV BUS T-02	0.000	0.146	2.5	0.0	
MV BUS T-03	34.500	99.974	0.0	0	0	0.004	0.004	MV BUS T-02	0.008	0.214	3.6	3.9	
								MV BUS T-04	-0.012	-0.364	6.1	3.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								LV BUS T-03	0.000	0.146	2.5	0.0	
MV BUS T-04	34.500	99.976	0.0	0	0	0.004	0.004	MV BUS T-03	0.012	0.318	5.3	3.9	
								MV BUS T-05	-0.017	-0.468	7.8	3.6	
								LV BUS T-04	0.000	0.146	2.5	0.0	
MV BUS T-05	34.500	99.980	0.0	0	0	0.004	0.004	MV BUS T-04	0.017	0.416	7.0	4.0	
								MV BUS T-08	-0.021	-0.566	9.5	3.7	
								LV BUS T-05	0.000	0.146	2.5	0.0	
MV BUS T-06	34.500	99.983	0.0	0	0	0.004	0.004	MV BUS T-07	-0.004	-0.150	2.5	2.8	
								LV BUS T-06	0.000	0.146	2.5	0.0	
MV BUS T-07	34.500	99.984	0.0	0	0	0.004	0.004	MV BUS T-06	0.004	0.121	2.0	3.4	
								MV BUS T-16	0.004	0.086	1.4	4.9	
								MV BUS T-15	-0.012	-0.356	6.0	3.5	
								LV BUS T-07	0.000	0.146	2.5	0.0	
MV BUS T-08	34.500	99.985	0.0	0	0	0.004	0.004	MV BUS T-05	0.021	0.469	7.9	4.4	
								MV BUS T-09	-0.025	-0.619	10.4	4.0	
								LV BUS T-08	0.000	0.146	2.5	0.0	
MV BUS T-09	34.500	99.992	0.0	0	0	0.004	0.004	MV BUS T-08	0.025	0.499	8.4	5.0	
								MV BUS T-10	-0.029	-0.649	10.9	4.5	
								LV BUS T-09	0.000	0.146	2.5	0.0	
MV BUS T-10	34.500	99.996	0.0	0	0	0.004	0.004	MV BUS T-09	0.029	0.558	9.3	5.2	
								MV BUS T-25	-0.033	-0.708	11.9	4.7	
								LV BUS T-10	0.000	0.146	2.5	0.0	
MV BUS T-13	34.500	99.982	0.0	0	0	0.004	0.004	MV BUS T-14	-0.004	-0.150	2.5	2.8	
								LV BUS T-13	0.000	0.146	2.5	0.0	
MV BUS T-14	34.500	99.983	0.0	0	0	0.004	0.004	MV BUS T-13	0.004	0.118	2.0	3.5	
								MV BUS T-15	-0.008	-0.268	4.5	3.1	
								LV BUS T-14	0.000	0.146	2.5	0.0	
MV BUS T-15	34.500	99.988	0.0	0	0	0.004	0.004	MV BUS T-07	0.012	0.283	4.7	4.4	
								MV BUS T-14	0.008	0.189	3.2	4.4	
								MV BUS T-17	-0.025	-0.622	10.4	4.0	
								LV BUS T-15	0.000	0.146	2.5	0.0	
MV BUS T-16	34.500	99.982	0.0	0	0	0.004	0.004	MV BUS T-07	-0.004	-0.150	2.5	2.8	
								LV BUS T-16	0.000	0.146	2.5	0.0	
MV BUS T-17	34.500	99.997	0.0	0	0	0.004	0.004	JB-2/1	-0.029	-0.606	10.2	4.8	
								MV BUS T-15	0.025	0.456	7.6	5.5	
								LV BUS T-17	0.000	0.146	2.5	0.0	
MV BUS T-20	34.500	99.994	0.0	0	0	0.004	0.004	MV BUS T-21	-0.004	-0.150	2.5	2.8	
								LV BUS T-20	0.000	0.146	2.5	0.0	
MV BUS T-21	34.500	99.996	0.0	0	0	0.004	0.004	MV BUS T-20	0.004	0.075	1.3	5.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								MV BUS T-22	-0.008	-0.225	3.8	3.7	
								LV BUS T-21	0.000	0.146	2.5	0.0	
MV BUS T-22	34.500	99.997	0.0	0	0	0.004	0.004	JB-2/1	-0.017	-0.408	6.8	4.1	
								MV BUS T-21	0.008	0.196	3.3	4.2	
								MV BUS T-29	0.004	0.062	1.0	6.7	
								LV BUS T-22	0.000	0.146	2.5	0.0	
MV BUS T-23	34.500	99.999	0.0	0	0	0.004	0.004	89F3A	-0.046	-0.779	13.1	5.9	
								MV BUS T-28	0.042	0.629	10.6	6.6	
								LV BUS T-23	0.000	0.146	2.5	0.0	
MV BUS T-24	34.500	100.011	0.0	0	0	0.004	0.004	MV BUS T-25	-0.004	-0.150	2.5	2.8	
								LV BUS T-24	0.000	0.146	2.5	0.0	
MV BUS T-25	34.500	100.012	0.0	0	0	0.004	0.004	89F1A	-0.042	-0.483	8.1	8.6	
								MV BUS T-10	0.033	0.226	3.8	14.6	
								MV BUS T-24	0.004	0.107	1.8	3.9	
								LV BUS T-25	0.000	0.146	2.5	0.0	
MV BUS T-26	34.500	99.990	0.0	0	0	0.004	0.004	MV BUS T-27	-0.004	-0.150	2.5	2.8	
								LV BUS T-26	0.000	0.146	2.5	0.0	
MV BUS T-27	34.500	99.991	0.0	0	0	0.004	0.004	MV BUS T-26	0.004	0.113	1.9	3.7	
								MV BUS T-28	-0.008	-0.263	4.4	3.2	
								LV BUS T-27	0.000	0.146	2.5	0.0	
MV BUS T-28	34.500	99.993	0.0	0	0	0.004	0.004	MV BUS T-23	-0.042	-0.782	13.1	5.3	
								MV BUS T-27	0.008	0.227	3.8	3.7	
								MV BUS T-33	0.029	0.405	6.8	7.2	
								LV BUS T-28	0.000	0.146	2.5	0.0	
MV BUS T-29	34.500	99.995	0.0	0	0	0.004	0.004	MV BUS T-22	-0.004	-0.150	2.5	2.8	
								LV BUS T-29	0.000	0.146	2.5	0.0	
MV BUS T-31	34.500	99.979	0.0	0	0	0.004	0.004	MV BUS T-32	-0.004	-0.150	2.5	2.8	
								LV BUS T-31	0.000	0.146	2.5	0.0	
MV BUS T-32	34.500	99.981	0.0	0	0	0.004	0.004	MV BUS T-31	0.004	0.041	0.7	10.2	
								MV BUS T-33	-0.008	-0.191	3.2	4.4	
								LV BUS T-32	0.000	0.146	2.5	0.0	
MV BUS T-33	34.500	99.983	0.0	0	0	0.004	0.004	MV BUS T-28	-0.029	-0.653	10.9	4.5	
								MV BUS T-32	0.008	0.163	2.7	5.1	
								MV BUS T-34	0.017	0.340	5.7	4.9	
								LV BUS T-33	0.000	0.146	2.5	0.0	
MV BUS T-34	34.500	99.980	0.0	0	0	0.004	0.004	MV BUS T-33	-0.017	-0.384	6.4	4.3	
								MV BUS T-36	0.008	0.203	3.4	4.1	
								MV BUS T-39	0.004	0.031	0.5	13.5	
								LV BUS T-34	0.000	0.146	2.5	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
MV BUS T-36	34.500	99.976	0.0	0	0	0.004	0.004	MV BUS T-34	-0.008	-0.273	4.6	3.0	
								MV BUS T-37	0.004	0.123	2.1	3.4	
								LV BUS T-36	0.000	0.146	2.5	0.0	
MV BUS T-37	34.500	99.975	0.0	0	0	0.004	0.004	MV BUS T-36	-0.004	-0.150	2.5	2.8	
								LV BUS T-37	0.000	0.146	2.5	0.0	
MV BUS T-39	34.500	99.977	0.0	0	0	0.004	0.004	MV BUS T-34	-0.004	-0.150	2.5	2.8	
								LV BUS T-39	0.000	0.146	2.5	0.0	
MV BUS T-40	34.500	100.027	0.0	0	0	0.004	0.004	89F4A	-0.042	-0.642	10.8	6.5	
								MV BUS T-46	0.038	0.492	8.3	7.6	
								LV BUS T-40	0.000	0.146	2.5	0.0	
MV BUS T-41	34.500	100.002	0.0	0	0	0.004	0.004	JB-4/1	-0.004	-0.150	2.5	2.8	
								LV BUS T-41	0.000	0.146	2.5	0.0	
MV BUS T-42	34.500	100.003	0.0	0	0	0.004	0.004	JB-4/1	-0.017	-0.360	6.0	4.6	
								MV BUS T-49	0.013	0.210	3.5	6.0	
								LV BUS T-42	0.000	0.146	2.5	0.0	
MV BUS T-43	34.500	100.002	0.0	0	0	0.004	0.004	JB-4/1	-0.004	-0.150	2.5	2.8	
								LV BUS T-43	0.000	0.146	2.5	0.0	
MV BUS T-44	34.500	100.010	0.0	0	0	0.004	0.004	JB-4/1	0.025	0.475	8.0	5.3	
								MV BUS T-45	-0.029	-0.625	10.5	4.7	
								LV BUS T-44	0.000	0.146	2.5	0.0	
MV BUS T-45	34.500	100.015	0.0	0	0	0.004	0.004	MV BUS T-44	0.029	0.503	8.4	5.8	
								MV BUS T-46	-0.033	-0.653	10.9	5.1	
								LV BUS T-45	0.000	0.146	2.5	0.0	
MV BUS T-46	34.500	100.022	0.0	0	0	0.004	0.004	MV BUS T-40	-0.038	-0.614	10.3	6.1	
								MV BUS T-45	0.033	0.464	7.8	7.2	
								LV BUS T-46	0.000	0.146	2.5	0.0	
MV BUS T-48	34.500	99.993	0.0	0	0	0.004	0.004	MV BUS T-49	-0.004	-0.150	2.5	2.8	
								LV BUS T-48	0.000	0.146	2.5	0.0	
MV BUS T-49	34.500	99.995	0.0	0	0	0.004	0.004	MV BUS T-42	-0.012	-0.379	6.3	3.3	
								MV BUS T-48	0.004	0.114	1.9	3.6	
								MV BUS T-50	0.004	0.115	1.9	3.6	
								LV BUS T-49	0.000	0.146	2.5	0.0	
MV BUS T-50	34.500	99.993	0.0	0	0	0.004	0.004	MV BUS T-49	-0.004	-0.150	2.5	2.8	
								LV BUS T-50	0.000	0.146	2.5	0.0	
* POI	138.000	100.000	0.0	0.229	0.017	0	0	89T1A	0.229	0.017	1.0	99.7	
MPT~3	13.800	100.019	0.0	0	0	0	0	HV BUS MPT & 89T1B	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

\# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
2_	pV	k 9 agW	8 ngW	9 F	9 far	9 F	9 far	2_	9 F	9 far	8 j 3	k P.	k ma3
4N 68	5BWGIT	6TTW6v	TW	T	T	T	T	9 V U1 S m7RG	TWBR	TWRB3	BW	60W	
								4Nm6U	7TWBR	7TWRB3	BW	60W	
4N R8	5BWGIT	6TTW6v	TW	T	T	T	T	JU7R/6	TWB0	TWRT6	0W	66W	
								4Nm6U	7TWB0	7TWRT6	0W	66W	
4N 58	5BWGIT	6TTW6v	TW	T	T	T	T	9 V U1 S m7R5	TWB0	TWBR	RWG	5TW	
								4Nm6U	7TWB0	7TWBR	RWG	5TW	
4N B8	5BWGIT	6TTW6v	TW	T	T	T	T	9 V U1 S m7BT	TWBR	7TW66	6GW	7BW	
								4Nm6U	7TWBR	TW66	6GW	7BW	
4Nm68	654WTT	NGWTT	TW	T	T	T	T	PO2	7TWR5	7TWTN	6W	NNW	
								HV U1 S 9 Pm	TWR5	TWTN	6W	NNW	
4Nm6U	5BWGIT	6TTW6v	TW	T	T	T	T	4N B8	TWBR	7TW66	6GW	7BW	
								4N 58	TWB0	TWBR	RWG	5TW	
								4N R8	TWB0	TWRT6	0W	66W	
								4N 68	TWBR	TWRB3	BW	60W	
								9 Pm-5	7TW6vG	TWRB	5W	746WG	
								& HV U1 S 9 Pm					
HV U1 S 9 Pm	654WTT	NGWTT	TW	T	T	TWB4	TW55	4Nm68	7TWR5	7TWTN	6W	NNW	
								4Nm6U	TW6vG	7TWRB	TW	746W	7GWTT
								& 9 Pm-5					
JU7R/6	5BWGIT	6TTWTR	TW	T	T	T	T	9 V U1 S m76v	TWRN	TWRN6	4WR	GWN	
								9 V U1 S m7RR	TW6v	TW5T	GWG	GW	
								4N R8	7TWB0	7TWRR	65W	GW	
JU7B/6	5BWGIT	6TTWT5	TW	T	T	T	T	9 V U1 S m7B6	TWTB	TWR6	RW	5W8	
								9 V U1 S m7BR	TW6v	TW5GN	0W	BW	
								9 V U1 S m7B5	TWTB	TWRR	RW	5W8	
								9 V U1 S m7BB	7TWRG	7TWTR	6TW	BW	
LV U1 S m7T6	TW0NT	NNW00	TW	TWTT	7TWB0	T	T	9 V U1 S m7T6	TWTT	7TWB0	6RRW	TW	
LV U1 S m7TR	TW0NT	NNW00v	TW	TWTT	7TWB0	T	T	9 V U1 S m7TR	TWTT	7TWB0	6RRW	TW	
LV U1 S m7T5	TW0NT	NNW00N	TW	TWTT	7TWB0	T	T	9 V U1 S m7T5	TWTT	7TWB0	6RRW	TW	
LV U1 S m7TB	TW0NT	NNW0vR	TW	TWTT	7TWB0	T	T	9 V U1 S m7TB	TWTT	7TWB0	6RRW	TW	
LV U1 S m7TG	TW0NT	NNW0v0	TW	TWTT	7TWB0	T	T	9 V U1 S m7TG	TWTT	7TWB0	6RRW	TW	
LV U1 S m7T0	TW0NT	NNW0vN	TW	TWTT	7TWB0	T	T	9 V U1 S m7T0	TWTT	7TWB0	6RRW	TW	
LV U1 S m7Tv	TW0NT	NNW04T	TW	TWTT	7TWB0	T	T	9 V U1 S m7Tv	TWTT	7TWB0	6RRW	TW	
LV U1 S m7T4	TW0NT	NNW046	TW	TWTT	7TWB0	T	T	9 V U1 S m7T4	TWTT	7TWB0	6RRW	TW	
LV U1 S m7TN	TW0NT	NNW044	TW	TWTT	7TWB0	T	T	9 V U1 S m7TN	TWTT	7TWB0	6RRWG	TW	
LV U1 S m76T	TW0NT	NNW0NR	TW	TWTT	7TWB0	T	T	9 V U1 S m76T	TWTT	7TWB0	6RRWG	TW	

Bus		Voltage		Generation		Load		Load Flow					XFMR
2_	pV	k 9 agW	8 ngW	9 F	9 far	9 F	9 far	2_	9 F	9 far	8 j 3	k P.	k ma3
LV U1 S m765	TW NT	NN W v4	TW	TW TT	7I WB0	T	T	9 V U1 S m765	TW TT	7I WB0	6RR W	TW	
LV U1 S m76B	TW NT	NN W vN	TW	TW TT	7I WB0	T	T	9 V U1 S m76B	TW TT	7I WB0	6RR W	TW	
LV U1 S m76G	TW NT	NN W45	TW	TW TT	7I WB0	T	T	9 V U1 S m76G	TW TT	7I WB0	6RR W	TW	
LV U1 S m760	TW NT	NN W v4	TW	TW TT	7I WB0	T	T	9 V U1 S m760	TW TT	7I WB0	6RR W	TW	
LV U1 S m76v	TW NT	NN W NR	TW	TW TT	7I WB0	T	T	9 V U1 S m76v	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7RT	TW NT	NN W4N	TW	TW TT	7I WB0	T	T	9 V U1 S m7RT	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7R6	TW NT	NN W N6	TW	TW TT	7I WB0	T	T	9 V U1 S m7R6	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7RR	TW NT	NN W N5	TW	TW TT	7I WB0	T	T	9 V U1 S m7RR	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7R5	TW NT	NN W NG	TW	TW TT	7I WB0	T	T	9 V U1 S m7R5	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7RB	TW NT	NN WT v	TW	TW TT	7I WB0	T	T	9 V U1 S m7RB	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7RG	TW NT	NN WT4	TW	TW TT	7I WB0	T	T	9 V U1 S m7RG	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7R0	TW NT	NN W4G	TW	TW TT	7I WB0	T	T	9 V U1 S m7R0	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7Rv	TW NT	NN W4v	TW	TW TT	7I WB0	T	T	9 V U1 S m7Rv	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7R4	TW NT	NN W4N	TW	TW TT	7I WB0	T	T	9 V U1 S m7R4	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7RN	TW NT	NN W NT	TW	TW TT	7I WB0	T	T	9 V U1 S m7RN	TW TT	7I WB0	6RR WG	TW	
LV U1 S m756	TW NT	NN W vB	TW	TW TT	7I WB0	T	T	9 V U1 S m756	TW TT	7I WB0	6RR W	TW	
LV U1 S m75R	TW NT	NN W vv	TW	TW TT	7I WB0	T	T	9 V U1 S m75R	TW TT	7I WB0	6RR W	TW	
LV U1 S m755	TW NT	NN W v4	TW	TW TT	7I WB0	T	T	9 V U1 S m755	TW TT	7I WB0	6RR W	TW	
LV U1 S m75B	TW NT	NN W vG	TW	TW TT	7I WB0	T	T	9 V U1 S m75B	TW TT	7I WB0	6RR W	TW	
LV U1 S m750	TW NT	NN W v6	TW	TW TT	7I WB0	T	T	9 V U1 S m750	TW TT	7I WB0	6RR W	TW	
LV U1 S m75v	TW NT	NN W v6	TW	TW TT	7I WB0	T	T	9 V U1 S m75v	TW TT	7I WB0	6RR W	TW	
LV U1 S m75N	TW NT	NN W v5	TW	TW TT	7I WB0	T	T	9 V U1 S m75N	TW TT	7I WB0	6RR W	TW	
LV U1 S m7BT	TW NT	NN WR5	TW	TW TT	7I WB0	T	T	9 V U1 S m7BT	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7B6	TW NT	NN W N4	TW	TW TT	7I WB0	T	T	9 V U1 S m7B6	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7BR	TW NT	NN W N4	TW	TW TT	7I WB0	T	T	9 V U1 S m7BR	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7B5	TW NT	NN W N4	TW	TW TT	7I WB0	T	T	9 V U1 S m7B5	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7BB	TW NT	NN WTG	TW	TW TT	7I WB0	T	T	9 V U1 S m7BB	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7BG	TW NT	NN W66	TW	TW TT	7I WB0	T	T	9 V U1 S m7BG	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7B0	TW NT	NN W64	TW	TW TT	7I WB0	T	T	9 V U1 S m7B0	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7B4	TW NT	NN W4N	TW	TW TT	7I WB0	T	T	9 V U1 S m7B4	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7BN	TW NT	NN W NT	TW	TW TT	7I WB0	T	T	9 V U1 S m7BN	TW TT	7I WB0	6RR WG	TW	
LV U1 S m7GT	TW NT	NN W4N	TW	TW TT	7I WB0	T	T	9 V U1 S m7GT	TW TT	7I WB0	6RR WG	TW	
9 V U1 S m7T6	5BWGIT	NNWWT	TW	T	T	TW TB	TW TB	9 V U1 S m7TR	7I W TB	7I WGT	RWG	RW	
								LV U1 S m7T6	TW TT	TWB0	RWG	TW	
9 V U1 S m7TR	5BWGIT	NNWWR	TW	T	T	TW TB	TW TB	9 V U1 S m7T6	TW TB	TW TB	6W	BW	
								9 V U1 S m7T5	7I WT4	7I WRGB	BWR	5W	
								LV U1 S m7TR	TW TT	TWB0	RWG	TW	
9 V U1 S m7T5	5BWGIT	NNWWB	TW	T	T	TW TB	TW TB	9 V U1 S m7TR	TW T4	TWR6B	5W	5WW	
								9 V U1 S m7TB	7I W6R	7I W50B	0W	5WB	

Bus		Voltage		Generation		Load		Load Flow					XFMR
2_	pV	k 9 agW	8 ngW	9 F	9 far	9 F	9 far	2_	9 F	9 far	8 j 3	k P.	k ma3
								LV U1 S m7I5	TWTT	TWB0	RWG	TW	
9 V U1 S m7IB	5BWGIT	NNWv0	TW	T	T	TWIB	TWIB	9 V U1 S m7I5	TW6R	TW64	GW	5W	
								9 V U1 S m7IG	7TW6v	7TW04	vW	5W	
								LV U1 S m7IB	TWTT	TWB0	RWG	TW	
9 V U1 S m7IG	5BWGIT	NNW4T	TW	T	T	TWIB	TWIB	9 V U1 S m7IB	TW6v	TW60	vW	BW	
								9 V U1 S m7I4	7TWR6	7TW00	NWG	5W	
								LV U1 S m7IG	TWTT	TWB0	RWG	TW	
9 V U1 S m7I0	5BWGIT	NNW45	TW	T	T	TWIB	TWIB	9 V U1 S m7Iv	7TWIB	7TW6GT	RWG	RW	
								LV U1 S m7I0	TWTT	TWB0	RWG	TW	
9 V U1 S m7Iv	5BWGIT	NNW4B	TW	T	T	TWIB	TWIB	9 V U1 S m7I0	TWIB	TWR6	RW	5W	
								9 V U1 S m760	TWIB	TW40	6W	BW	
								9 V U1 S m76G	7TW6R	7TW0D	0W	5W	
								LV U1 S m7Iv	TWTT	TWB0	RWG	TW	
9 V U1 S m7I4	5BWGIT	NNW4G	TW	T	T	TWIB	TWIB	9 V U1 S m7IG	TWR6	TW0N	vW	BW	
								9 V U1 S m7IN	7TWRG	7TW6N	6TW	BW	
								LV U1 S m7I4	TWTT	TWB0	RWG	TW	
9 V U1 S m7IN	5BWGIT	NNWNR	TW	T	T	TWIB	TWIB	9 V U1 S m7I4	TWRG	TWRN	4W	GW	
								9 V U1 S m76T	7TWRN	7TWBN	6TW	BWG	
								LV U1 S m7IN	TWTT	TWB0	RWG	TW	
9 V U1 S m76T	5BWGIT	NNWN0	TW	T	T	TWIB	TWIB	9 V U1 S m7IN	TWRN	TWGG4	NW	GW	
								9 V U1 S m7RG	7TW55	7TWT4	66W	BW	
								LV U1 S m76T	TWTT	TWB0	RWG	TW	
9 V U1 S m765	5BWGIT	NNW4R	TW	T	T	TWIB	TWIB	9 V U1 S m76B	7TWIB	7TW6GT	RWG	RW	
								LV U1 S m765	TWTT	TWB0	RWG	TW	
9 V U1 S m76B	5BWGIT	NNW45	TW	T	T	TWIB	TWIB	9 V U1 S m765	TWIB	TW64	RW	5WG	
								9 V U1 S m76G	7TWT4	7TWR04	BWG	5W	
								LV U1 S m76B	TWTT	TWB0	RWG	TW	
9 V U1 S m76G	5BWGIT	NNW44	TW	T	T	TWIB	TWIB	9 V U1 S m7Iv	TW6R	TWR45	BW	BW	
								9 V U1 S m76B	TWT4	TW4N	5WR	BW	
								9 V U1 S m76v	7TWRG	7TW0RR	6TW	BW	
								LV U1 S m76G	TWTT	TWB0	RWG	TW	
9 V U1 S m760	5BWGIT	NNW4R	TW	T	T	TWIB	TWIB	9 V U1 S m7Iv	7TWIB	7TW6GT	RWG	RW	
								LV U1 S m760	TWTT	TWB0	RWG	TW	
9 V U1 S m76v	5BWGIT	NNWNv	TW	T	T	TWIB	TWIB	JU7R/6	7TWRN	7TW0T0	6TWR	BW	
								9 V U1 S m76G	TWRG	TWGC0	vW	GWG	
								LV U1 S m76v	TWTT	TWB0	RWG	TW	
9 V U1 S m7RT	5BWGIT	NNWNB	TW	T	T	TWIB	TWIB	9 V U1 S m7R6	7TWIB	7TW6GT	RWG	RW	
								LV U1 S m7RT	TWTT	TWB0	RWG	TW	
9 V U1 S m7R6	5BWGIT	NNWN0	TW	T	T	TWIB	TWIB	9 V U1 S m7RT	TWIB	TWvG	6W	GWG	

Bus		Voltage		Generation		Load		Load Flow					XFMR
2_	pV	k 9 agW	8 ngW	9 F	9 far	9 F	9 far	2_	9 F	9 far	8 j 3	k P.	k ma3
								9 V U1 S m7RR	7TWT4	7TWRRG	5W	5W	
								LV U1 S m7R6	TWTT	TWB0	RWG	TW	
9 V U1 S m7RR	5BWGT	NNWNv	TW	T	T	TWTB	TWTB	JU7R/6	7TW6v	7TWT4	0W	BW	
								9 V U1 S m7R6	TWT4	TWN0	5W	BW	
								9 V U1 S m7RN	TWTB	TW0R	6W	0W	
								LV U1 S m7RR	TWTT	TWB0	RWG	TW	
9 V U1 S m7R5	5BWGT	NNWNN	TW	T	T	TWTB	TWTB	4N 58	7TWB0	7TWvN	65W	GW	
								9 V U1 S m7R4	TWBR	TW0RN	6TW	0W	
								LV U1 S m7R5	TWTT	TWB0	RWG	TW	
9 V U1 S m7RB	5BWGT	6TTW66	TW	T	T	TWTB	TWTB	9 V U1 S m7RG	7TWTB	7TW6GT	RWG	RW	
								LV U1 S m7RB	TWTT	TWB0	RWG	TW	
9 V U1 S m7RG	5BWGT	6TTW6R	TW	T	T	TWTB	TWTB	4N 68	7TWBR	7TW445	4W	4W	
								9 V U1 S m76T	TW55	TWRR0	5W	6BW	
								9 V U1 S m7RB	TWTB	TWTv	6W	5W	
								LV U1 S m7RG	TWTT	TWB0	RWG	TW	
9 V U1 S m7R0	5BWGT	NNWNT	TW	T	T	TWTB	TWTB	9 V U1 S m7Rv	7TWTB	7TW6GT	RWG	RW	
								LV U1 S m7R0	TWTT	TWB0	RWG	TW	
9 V U1 S m7Rv	5BWGT	NNWN6	TW	T	T	TWTB	TWTB	9 V U1 S m7R0	TWTB	TW665	6W	5W	
								9 V U1 S m7R4	7TWT4	7TWR05	BW	5W	
								LV U1 S m7Rv	TWTT	TWB0	RWG	TW	
9 V U1 S m7R4	5BWGT	NNWN5	TW	T	T	TWTB	TWTB	9 V U1 S m7R5	7TWBR	7TW4R	65W	GW	
								9 V U1 S m7Rv	TWT4	TWRRv	5W	5W	
								9 V U1 S m755	TWRN	TWBTG	0W	vW	
								LV U1 S m7R4	TWTT	TWB0	RWG	TW	
9 V U1 S m7RN	5BWGT	NNWNG	TW	T	T	TWTB	TWTB	9 V U1 S m7RR	7TWTB	7TW6GT	RWG	RW	
								LV U1 S m7RN	TWTT	TWB0	RWG	TW	
9 V U1 S m756	5BWGT	NNWNvN	TW	T	T	TWTB	TWTB	9 V U1 S m75R	7TWTB	7TW6GT	RWG	RW	
								LV U1 S m756	TWTT	TWB0	RWG	TW	
9 V U1 S m75R	5BWGT	NNWN46	TW	T	T	TWTB	TWTB	9 V U1 S m756	TWTB	TWB6	TW	6TW	
								9 V U1 S m755	7TWT4	7TW6N6	5W	BW	
								LV U1 S m75R	TWTT	TWB0	RWG	TW	
9 V U1 S m755	5BWGT	NNWN45	TW	T	T	TWTB	TWTB	9 V U1 S m7R4	7TWRN	7TW0G5	6TW	BWG	
								9 V U1 S m75R	TWT4	TW605	RW	GW	
								9 V U1 S m75B	TW6v	TW5BT	GW	BW	
								LV U1 S m755	TWTT	TWB0	RWG	TW	
9 V U1 S m75B	5BWGT	NNWN4T	TW	T	T	TWTB	TWTB	9 V U1 S m755	7TW6v	7TW54B	0W	BW	
								9 V U1 S m750	TWT4	TWRT5	5W	BW	
								9 V U1 S m75N	TWTB	TW56	TWG	65WG	
								LV U1 S m75B	TWTT	TWB0	RWG	TW	

Bus		Voltage		Generation		Load		Load Flow					XFMR
2_	pV	k 9 agW	8 ngW	9 F	9 far	9 F	9 far	2_	9 F	9 far	8 j 3	k P.	k ma3
9 V U1 S m750	5BWGIT	NNWv0	TW	T	T	TWIB	TWIB	9 V U1 S m75B	7IWI4	7IWv5	BW	5W	
								9 V U1 S m75v	TWIB	TWR5	RW	5W	
								LV U1 S m750	TWIT	TWB0	RWG	TW	
9 V U1 S m75v	5BWGIT	NNWvG	TW	T	T	TWIB	TWIB	9 V U1 S m750	7IWIB	7IWGT	RWG	RW	
								LV U1 S m75v	TWIT	TWB0	RWG	TW	
9 V U1 S m75N	5BWGIT	NNWvv	TW	T	T	TWIB	TWIB	9 V U1 S m75B	7IWIB	7IWGT	RWG	RW	
								LV U1 S m75N	TWIT	TWB0	RWG	TW	
9 V U1 S m7BT	5BWGIT	6TIWRv	TW	T	T	TWIB	TWIB	4N B8	7IWBR	7IWBR	6TW	0WG	
								9 V U1 S m7B0	TW54	TWRNR	4W	vW	
								LV U1 S m7BT	TWIT	TWB0	RWG	TW	
9 V U1 S m7B6	5BWGIT	6TIWIR	TW	T	T	TWIB	TWIB	JU7B/6	7IWIB	7IWGT	RWG	RW	
								LV U1 S m7B6	TWIT	TWB0	RWG	TW	
9 V U1 S m7BR	5BWGIT	6TIWI5	TW	T	T	TWIB	TWIB	JU7B/6	7IW6v	7IW0T	0W	BW	
								9 V U1 S m7BN	TW65	TWR6T	5WG	0W	
								LV U1 S m7BR	TWIT	TWB0	RWG	TW	
9 V U1 S m7B5	5BWGIT	6TIWIR	TW	T	T	TWIB	TWIB	JU7B/6	7IWIB	7IWGT	RWG	RW	
								LV U1 S m7B5	TWIT	TWB0	RWG	TW	
9 V U1 S m7BB	5BWGIT	6TIW6T	TW	T	T	TWIB	TWIB	JU7B/6	TWRG	TWBvG	4W	GW	
								9 V U1 S m7BG	7IWRN	7IWRG	6TWG	BW	
								LV U1 S m7BB	TWIT	TWB0	RWG	TW	
9 V U1 S m7BG	5BWGIT	6TIW6G	TW	T	T	TWIB	TWIB	9 V U1 S m7BB	TWRN	TWGT5	4W	GW	
								9 V U1 S m7B0	7IW55	7IWGS	6TW	GW	
								LV U1 S m7BG	TWIT	TWB0	RWG	TW	
9 V U1 S m7B0	5BWGIT	6TIWRR	TW	T	T	TWIB	TWIB	9 V U1 S m7BT	7IW54	7IW6B	6TW	0W	
								9 V U1 S m7BG	TW55	TWR0B	vW	vW	
								LV U1 S m7B0	TWIT	TWB0	RWG	TW	
9 V U1 S m7B4	5BWGIT	NNWN5	TW	T	T	TWIB	TWIB	9 V U1 S m7BN	7IWIB	7IWGT	RWG	RW	
								LV U1 S m7B4	TWIT	TWB0	RWG	TW	
9 V U1 S m7BN	5BWGIT	NNWNG	TW	T	T	TWIB	TWIB	9 V U1 S m7BR	7IW6R	7IWvN	0W	5W	
								9 V U1 S m7B4	TW6B	6W	5W		
								9 V U1 S m7GT	TW6G	6W	5W		
								LV U1 S m7BN	TWIT	TWB0	RWG	TW	
9 V U1 S m7GT	5BWGIT	NNWN5	TW	T	T	TWIB	TWIB	9 V U1 S m7BN	7IWIB	7IWGT	RWG	RW	
								LV U1 S m7GT	TWIT	TWB0	RWG	TW	
* PO2	654WIT	NGWIT	TW	TWRR5	TWIB	T	T	4Nm68	TWRR5	TWIB	6W	6TIW	
9 Pm~5	65WIT	6TIW6N	TW	T	T	T	T	HV U1 S 9 Pm & 4Nm6U	TWIT	TWIT	TW	TW	

* 2ndicates a foltage regulated bus (foltage controlled or swing ty3e j achine connected to it)

2ndicates a bus with a load j isj atch oMj ore than TW9 V8

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
IF	AV	% p ag.	Mng.	p T	p var	p T	p var	IF	p T	p var	Mm8	%P1	%Da8
931NM	45.B00	N00.025	0.0	0	0	0	0	p V UGS D-2B	0.052	0.245	5.0	N7.6	
								93DNU	-0.052	-0.245	5.0	N7.6	
9312M	45.B00	N00.025	0.0	0	0	0	0	JU-2/N	0.056	0.430	6.6	NN7	
								93DNU	-0.056	-0.430	6.6	NN7	
9314M	45.B00	N00.025	0.0	0	0	0	0	p V UGS D-24	0.056	0.N40	2.4	44.N	
								93DNU	-0.056	-0.N40	2.4	44.N	
9315M	45.B00	N00.025	0.0	0	0	0	0	p V UGS D-50	0.052	-0.32N	NB.5	-5.B	
								93DNU	-0.052	0.32N	NB.5	-5.B	
93DNM	N49.000	N00.000	0.0	0	0	0	0	POI	-0.223	0.020	N0	-33.6	
								HV UGS p PD	0.223	-0.020	N0	-33.6	
93DNU	45.B00	N00.025	0.0	0	0	0	0	9315M	0.052	-0.32N	NB.5	-5.B	
								9314M	0.056	0.N40	2.4	44.N	
								9312M	0.056	0.430	6.6	NN7	
								931NM	0.052	0.245	5.0	N7.6	
								p PD-4	-0.N7B	0.N67	5.N	-72.4	
								& HV UGS p PD					
HV UGS p PD	N49.000	N00.000	0.0	0	0	0.0B5	0.N57	93DNM	-0.223	0.020	N0	-33.6	
								93DNU	0.N7B	-0.N67	N0	-72.4	
								& p PD-4					
JU-2/N	45.B00	N00.009	0.0	0	0	0	0	p V UGS D-N7	0.023	0.595	9.N	6.0	
								p V UGS D-22	0.0N7	0.426	B.B	B.N	
								9312M	-0.056	-0.9N0	N4.6	B.6	
JU-5/N	45.B00	N00.0N0	0.0	0	0	0	0	p V UGS D-5N	0.005	0.N20	2.0	4.B	
								p V UGS D-52	0.0N7	0.4BB	B.3	5.7	
								p V UGS D-54	0.005	0.N2N	2.0	4.5	
								p V UGS D-55	-0.02B	-0.B36	N0.0	5.2	
LV UGS D-0N	0.630	33.67B	0.0	0.000	-0.N5B	0	0	p V UGS D-0N	0.000	-0.N5B	N2N7	0.0	
LV UGS D-02	0.630	33.676	0.0	0.000	-0.N5B	0	0	p V UGS D-02	0.000	-0.N5B	N2N7	0.0	
LV UGS D-04	0.630	33.679	0.0	0.000	-0.N5B	0	0	p V UGS D-04	0.000	-0.N5B	N2N7	0.0	
LV UGS D-05	0.630	33.69N	0.0	0.000	-0.N5B	0	0	p V UGS D-05	0.000	-0.N5B	N2N7	0.0	
LV UGS D-0B	0.630	33.69B	0.0	0.000	-0.N5B	0	0	p V UGS D-0B	0.000	-0.N5B	N2N7	0.0	
LV UGS D-06	0.630	33.697	0.0	0.000	-0.N5B	0	0	p V UGS D-06	0.000	-0.N5B	N2N7	0.0	
LV UGS D-07	0.630	33.699	0.0	0.000	-0.N5B	0	0	p V UGS D-07	0.000	-0.N5B	N2N7	0.0	
LV UGS D-09	0.630	33.630	0.0	0.000	-0.N5B	0	0	p V UGS D-09	0.000	-0.N5B	N2N7	0.0	
LV UGS D-03	0.630	33.636	0.0	0.000	-0.N5B	0	0	p V UGS D-03	0.000	-0.N5B	N2N7	0.0	
LV UGS D-N0	0.630	33.70N	0.0	0.000	-0.N5B	0	0	p V UGS D-N0	0.000	-0.N5B	N2N7	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
IF	AV	% p ag.	Mng.	p T	p var	p T	p var	IF	p T	p var	Mm8	%P1	%Da8
LV UGS D-N4	0.630	33.697	0.0	0.000	-0.N5B	0	0	p V UGS D-N4	0.000	-0.N5B	N2N7	0.0	
LV UGS D-N5	0.630	33.699	0.0	0.000	-0.N5B	0	0	p V UGS D-N5	0.000	-0.N5B	N2N7	0.0	
LV UGS D-NB	0.630	33.632	0.0	0.000	-0.N5B	0	0	p V UGS D-NB	0.000	-0.N5B	N2N7	0.0	
LV UGS D-N6	0.630	33.697	0.0	0.000	-0.N5B	0	0	p V UGS D-N6	0.000	-0.N5B	N2N7	0.0	
LV UGS D-N7	0.630	33.70N	0.0	0.000	-0.N5B	0	0	p V UGS D-N7	0.000	-0.N5B	N2N7	0.0	
LV UGS D-20	0.630	33.639	0.0	0.000	-0.N5B	0	0	p V UGS D-20	0.000	-0.N5B	N2N7	0.0	
LV UGS D-2N	0.630	33.700	0.0	0.000	-0.N5B	0	0	p V UGS D-2N	0.000	-0.N5B	N2N7	0.0	
LV UGS D-22	0.630	33.70N	0.0	0.000	-0.N5B	0	0	p V UGS D-22	0.000	-0.N5B	N2N7	0.0	
LV UGS D-24	0.630	33.705	0.0	0.000	-0.N5B	0	0	p V UGS D-24	0.000	-0.N5B	N2N7	0.0	
LV UGS D-25	0.630	33.7NB	0.0	0.000	-0.N5B	0	0	p V UGS D-25	0.000	-0.N5B	N2N7	0.0	
LV UGS D-2B	0.630	33.7N6	0.0	0.000	-0.N5B	0	0	p V UGS D-2B	0.000	-0.N5B	N2N7	0.0	
LV UGS D-26	0.630	33.635	0.0	0.000	-0.N5B	0	0	p V UGS D-26	0.000	-0.N5B	N2N7	0.0	
LV UGS D-27	0.630	33.63B	0.0	0.000	-0.N5B	0	0	p V UGS D-27	0.000	-0.N5B	N2N7	0.0	
LV UGS D-29	0.630	33.639	0.0	0.000	-0.N5B	0	0	p V UGS D-29	0.000	-0.N5B	N2N7	0.0	
LV UGS D-23	0.630	33.633	0.0	0.000	-0.N5B	0	0	p V UGS D-23	0.000	-0.N5B	N2N7	0.0	
LV UGS D-4N	0.630	33.694	0.0	0.000	-0.N5B	0	0	p V UGS D-4N	0.000	-0.N5B	N2N7	0.0	
LV UGS D-42	0.630	33.696	0.0	0.000	-0.N5B	0	0	p V UGS D-42	0.000	-0.N5B	N2N7	0.0	
LV UGS D-44	0.630	33.697	0.0	0.000	-0.N5B	0	0	p V UGS D-44	0.000	-0.N5B	N2N7	0.0	
LV UGS D-45	0.630	33.695	0.0	0.000	-0.N5B	0	0	p V UGS D-45	0.000	-0.N5B	N2N7	0.0	
LV UGS D-46	0.630	33.690	0.0	0.000	-0.N5B	0	0	p V UGS D-46	0.000	-0.N5B	N2N7	0.0	
LV UGS D-47	0.630	33.690	0.0	0.000	-0.N5B	0	0	p V UGS D-47	0.000	-0.N5B	N2N7	0.0	
LV UGS D-43	0.630	33.692	0.0	0.000	-0.N5B	0	0	p V UGS D-43	0.000	-0.N5B	N2N7	0.0	
LV UGS D-50	0.630	33.742	0.0	0.000	-0.N5B	0	0	p V UGS D-50	0.000	-0.N5B	N2N7	0.0	
LV UGS D-5N	0.630	33.707	0.0	0.000	-0.N5B	0	0	p V UGS D-5N	0.000	-0.N5B	N2N7	0.0	
LV UGS D-52	0.630	33.709	0.0	0.000	-0.N5B	0	0	p V UGS D-52	0.000	-0.N5B	N2N7	0.0	
LV UGS D-54	0.630	33.707	0.0	0.000	-0.N5B	0	0	p V UGS D-54	0.000	-0.N5B	N2N7	0.0	
LV UGS D-55	0.630	33.7NB	0.0	0.000	-0.N5B	0	0	p V UGS D-55	0.000	-0.N5B	N2N7	0.0	
LV UGS D-5B	0.630	33.720	0.0	0.000	-0.N5B	0	0	p V UGS D-5B	0.000	-0.N5B	N2N7	0.0	
LV UGS D-56	0.630	33.727	0.0	0.000	-0.N5B	0	0	p V UGS D-56	0.000	-0.N5B	N2N7	0.0	
LV UGS D-59	0.630	33.633	0.0	0.000	-0.N5B	0	0	p V UGS D-59	0.000	-0.N5B	N2N7	0.0	
LV UGS D-53	0.630	33.700	0.0	0.000	-0.N5B	0	0	p V UGS D-53	0.000	-0.N5B	N2N7	0.0	
LV UGS D-B0	0.630	33.633	0.0	0.000	-0.N5B	0	0	p V UGS D-B0	0.000	-0.N5B	N2N7	0.0	
p V UGS D-0N	45.B00	33.377	0.0	0	0	0.005	0.005	p V UGS D-02	-0.005	-0.N53	2.B	2.9	
								LV UGS D-0N	0.000	0.N5B	2.5	0.0	
p V UGS D-02	45.B00	33.373	0.0	0	0	0.005	0.005	p V UGS D-0N	0.005	0.N04	N7	5.0	
								p V UGS D-04	-0.009	-0.2B2	5.2	4.4	
								LV UGS D-02	0.000	0.N5B	2.5	0.0	
p V UGS D-04	45.B00	33.39N	0.0	0	0	0.005	0.005	p V UGS D-02	0.009	0.2N2	4.6	4.3	
								p V UGS D-05	-0.0N2	-0.46N	6.0	4.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
IF	AV	% p ag.	Mng.	p T	p var	p T	p var	IF	p T	p var	Mm8	%P1	%Da8
								LV UGS D-04	0.000	0.N5B	2.5	0.0	
p V UGS D-05	45.B00	33.394	0.0	0	0	0.005	0.005	p V UGS D-04	0.0N2	0.4NB	B.4	5.0	
								p V UGS D-0B	-0.0N7	-0.565	7.9	4.6	
								LV UGS D-05	0.000	0.N5B	2.5	0.0	
p V UGS D-0B	45.B00	33.397	0.0	0	0	0.005	0.005	p V UGS D-05	0.0N7	0.5N2	6.3	5.0	
								p V UGS D-09	-0.02N	-0.B6N	3.5	4.7	
								LV UGS D-0B	0.000	0.N5B	2.5	0.0	
p V UGS D-06	45.B00	33.330	0.0	0	0	0.005	0.005	p V UGS D-07	-0.005	-0.N53	2.B	2.9	
								LV UGS D-06	0.000	0.N5B	2.5	0.0	
p V UGS D-07	45.B00	33.33N	0.0	0	0	0.005	0.005	p V UGS D-06	0.005	0.N20	2.0	4.B	
								p V UGS D-N6	0.005	0.095	N5	5.3	
								p V UGS D-NB	-0.0N2	-0.4B4	B.3	4.B	
								LV UGS D-07	0.000	0.N5B	2.5	0.0	
p V UGS D-09	45.B00	33.332	0.0	0	0	0.005	0.005	p V UGS D-0B	0.02N	0.565	7.9	5.B	
								p V UGS D-03	-0.02B	-0.6N4	N0.4	5.N	
								LV UGS D-09	0.000	0.N5B	2.5	0.0	
p V UGS D-03	45.B00	33.333	0.0	0	0	0.005	0.005	p V UGS D-09	0.02B	0.534	9.4	B.N	
								p V UGS D-N0	-0.023	-0.652	N0.9	5.B	
								LV UGS D-03	0.000	0.N5B	2.5	0.0	
p V UGS D-N0	45.B00	N00.004	0.0	0	0	0.005	0.005	p V UGS D-03	0.023	0.BBN	3.2	B.4	
								p V UGS D-2B	-0.044	-0.700	NN7	5.9	
								LV UGS D-N0	0.000	0.N5B	2.5	0.0	
p V UGS D-N4	45.B00	33.393	0.0	0	0	0.005	0.005	p V UGS D-N5	-0.005	-0.N53	2.B	2.9	
								LV UGS D-N4	0.000	0.N5B	2.5	0.0	
p V UGS D-N5	45.B00	33.330	0.0	0	0	0.005	0.005	p V UGS D-N4	0.005	0.NN7	2.0	4.B	
								p V UGS D-NB	-0.009	-0.266	5.B	4.N	
								LV UGS D-N5	0.000	0.N5B	2.5	0.0	
p V UGS D-NB	45.B00	33.335	0.0	0	0	0.005	0.005	p V UGS D-07	0.0N2	0.290	5.7	5.5	
								p V UGS D-N5	0.009	0.N97	4.N	5.B	
								p V UGS D-N7	-0.02B	-0.6N6	N0.4	5.0	
								LV UGS D-NB	0.000	0.N5B	2.5	0.0	
p V UGS D-N6	45.B00	33.393	0.0	0	0	0.005	0.005	p V UGS D-07	-0.005	-0.N53	2.B	2.9	
								LV UGS D-N6	0.000	0.N5B	2.5	0.0	
p V UGS D-N7	45.B00	N00.004	0.0	0	0	0.005	0.005	JU-2/N	-0.023	-0.B33	N0.0	5.3	
								p V UGS D-NB	0.02B	0.5B0	7.B	B.B	
								LV UGS D-N7	0.000	0.N5B	2.5	0.0	
p V UGS D-20	45.B00	N00.000	0.0	0	0	0.005	0.005	p V UGS D-2N	-0.005	-0.N53	2.B	2.9	
								LV UGS D-20	0.000	0.N5B	2.5	0.0	
p V UGS D-2N	45.B00	N00.002	0.0	0	0	0.005	0.005	p V UGS D-20	0.005	0.075	N2	B.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
IF	AV	% p ag.	Mng.	p T	p var	p T	p var	IF	p T	p var	Mm8	%P1	%Da8
								p V UGS D-22	-0.009	-0.224	4.7	4.7	
								LV UGS D-2N	0.000	0.N5B	2.5	0.0	
p V UGS D-22	45.B00	N00.005	0.0	0	0	0.005	0.005	JU-2/N	-0.0N7	-0.505	6.9	5.N	
								p V UGS D-2N	0.009	0.N35	4.2	5.4	
								p V UGS D-23	0.005	0.06N	N0	6.9	
								LV UGS D-22	0.000	0.N5B	2.5	0.0	
p V UGS D-24	45.B00	N00.006	0.0	0	0	0.005	0.005	9314M	-0.056	-0.769	N2.3	6.0	
								p V UGS D-29	0.052	0.6N8	N0.5	6.7	
								LV UGS D-24	0.000	0.N5B	2.5	0.0	
p V UGS D-25	45.B00	N00.0N7	0.0	0	0	0.005	0.005	p V UGS D-2B	-0.005	-0.N53	2.B	2.9	
								LV UGS D-25	0.000	0.N5B	2.5	0.0	
p V UGS D-2B	45.B00	N00.0N9	0.0	0	0	0.005	0.005	931NM	-0.052	-0.574	7.3	9.9	
								p V UGS D-N0	0.044	0.2N9	4.7	NB.2	
								p V UGS D-25	0.005	0.N06	N9	4.3	
								LV UGS D-2B	0.000	0.N5B	2.5	0.0	
p V UGS D-26	45.B00	33.337	0.0	0	0	0.005	0.005	p V UGS D-27	-0.005	-0.N53	2.B	2.9	
								LV UGS D-26	0.000	0.N5B	2.5	0.0	
p V UGS D-27	45.B00	33.339	0.0	0	0	0.005	0.005	p V UGS D-26	0.005	0.NN2	N3	4.7	
								p V UGS D-29	-0.009	-0.26N	5.5	4.2	
								LV UGS D-27	0.000	0.N5B	2.5	0.0	
p V UGS D-29	45.B00	N00.000	0.0	0	0	0.005	0.005	p V UGS D-24	-0.052	-0.772	N2.3	B.5	
								p V UGS D-27	0.009	0.22B	4.9	4.7	
								p V UGS D-44	0.023	0.439	6.7	7.4	
								LV UGS D-29	0.000	0.N5B	2.5	0.0	
p V UGS D-23	45.B00	N00.00N	0.0	0	0	0.005	0.005	p V UGS D-22	-0.005	-0.N53	2.B	2.9	
								LV UGS D-23	0.000	0.N5B	2.5	0.0	
p V UGS D-4N	45.B00	33.396	0.0	0	0	0.005	0.005	p V UGS D-42	-0.005	-0.N53	2.B	2.9	
								LV UGS D-4N	0.000	0.N5B	2.5	0.0	
p V UGS D-42	45.B00	33.399	0.0	0	0	0.005	0.005	p V UGS D-4N	0.005	0.043	0.7	N0.B	
								p V UGS D-44	-0.009	-0.N93	4.2	5.5	
								LV UGS D-42	0.000	0.N5B	2.5	0.0	
p V UGS D-44	45.B00	33.393	0.0	0	0	0.005	0.005	p V UGS D-29	-0.023	-0.656	N0.9	5.B	
								p V UGS D-42	0.009	0.N6N	2.7	B.2	
								p V UGS D-45	0.0N7	0.446	B.6	B.0	
								LV UGS D-44	0.000	0.N5B	2.5	0.0	
p V UGS D-45	45.B00	33.397	0.0	0	0	0.005	0.005	p V UGS D-44	-0.0N7	-0.490	6.5	5.5	
								p V UGS D-46	0.009	0.20N	4.5	5.N	
								p V UGS D-43	0.005	0.023	0.B	N5.0	
								LV UGS D-45	0.000	0.N5B	2.5	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
IF	AV	% p ag.	Mng.	p T	p var	p T	p var	IF	p T	p var	Mm8	%P1	%Da8
p V UGS D-46	45.B00	33.394	0.0	0	0	0.005	0.005	p V UGS D-45	-0.009	-0.27N	5.B	4.N	
								p V UGS D-47	0.005	0.N22	2.0	4.5	
								LV UGS D-46	0.000	0.N5B	2.5	0.0	
p V UGS D-47	45.B00	33.392	0.0	0	0	0.005	0.005	p V UGS D-46	-0.005	-0.N53	2.B	2.9	
								LV UGS D-47	0.000	0.N5B	2.5	0.0	
p V UGS D-43	45.B00	33.395	0.0	0	0	0.005	0.005	p V UGS D-45	-0.005	-0.N53	2.B	2.9	
								LV UGS D-43	0.000	0.N5B	2.5	0.0	
p V UGS D-50	45.B00	N00.045	0.0	0	0	0.005	0.005	9315M	-0.052	-0.642	N0.6	6.6	
								p V UGS D-56	0.049	0.594	9.N	7.9	
								LV UGS D-50	0.000	0.N5B	2.5	0.0	
p V UGS D-5N	45.B00	N00.003	0.0	0	0	0.005	0.005	JU-5/N	-0.005	-0.N53	2.B	2.9	
								LV UGS D-5N	0.000	0.N5B	2.5	0.0	
p V UGS D-52	45.B00	N00.0N0	0.0	0	0	0.005	0.005	JU-5/N	-0.0N7	-0.4B6	6.0	5.7	
								p V UGS D-53	0.0N4	0.207	4.B	6.0	
								LV UGS D-52	0.000	0.N5B	2.5	0.0	
p V UGS D-54	45.B00	N00.003	0.0	0	0	0.005	0.005	JU-5/N	-0.005	-0.N53	2.B	2.9	
								LV UGS D-54	0.000	0.N5B	2.5	0.0	
p V UGS D-55	45.B00	N00.0N7	0.0	0	0	0.005	0.005	JU-5/N	0.02B	0.563	7.3	B.4	
								p V UGS D-5B	-0.023	-0.6N9	N0.5	5.7	
								LV UGS D-55	0.000	0.N5B	2.5	0.0	
p V UGS D-5B	45.B00	N00.024	0.0	0	0	0.005	0.005	p V UGS D-55	0.023	0.536	9.4	B.3	
								p V UGS D-56	-0.044	-0.65B	N0.9	B.2	
								LV UGS D-5B	0.000	0.N5B	2.5	0.0	
p V UGS D-56	45.B00	N00.040	0.0	0	0	0.005	0.005	p V UGS D-50	-0.047	-0.60B	N0.N	6.2	
								p V UGS D-5B	0.044	0.5B6	7.6	7.4	
								LV UGS D-56	0.000	0.N5B	2.5	0.0	
p V UGS D-59	45.B00	N00.00N	0.0	0	0	0.005	0.005	p V UGS D-53	-0.005	-0.N53	2.B	2.9	
								LV UGS D-59	0.000	0.N5B	2.5	0.0	
p V UGS D-53	45.B00	N00.002	0.0	0	0	0.005	0.005	p V UGS D-52	-0.0N2	-0.476	6.4	4.4	
								p V UGS D-59	0.005	0.NN4	N3	4.7	
								p V UGS D-B0	0.005	0.NN5	N3	4.6	
								LV UGS D-53	0.000	0.N5B	2.5	0.0	
p V UGS D-B0	45.B00	N00.00N	0.0	0	0	0.005	0.005	p V UGS D-53	-0.005	-0.N53	2.B	2.9	
								LV UGS D-B0	0.000	0.N5B	2.5	0.0	
* POI	N49.000	N00.000	0.0	0.223	-0.026	0	0	93DNM	0.223	-0.026	N0	-33.5	
p PD-4	N4.900	N00.026	0.0	0	0	0	0	HV UGS p PD & 93DNU	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing ty8e machine connected to it)

Indicates a bus with a load mismatch ok more than 0.Np VM

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
-m	MV	f 8 agW	p ngW	8 D	8 %ar	8 D	8 %ar	-m	8 D	8 %ar	p _ 9	f P.	f Fa9
34. Np	5BWGG	NGGW7B	GW	C	G	C	C	8 V U6 S F271	GW37	GW5B	BWG	NRW	
								34FNU	2GW37	2GW5B	BWG	NRW	
34. 7p	5BWGG	NGGW7B	GW	C	G	C	C	JU27/N	GW30	GW54G	0WW	NNWR	
								34FNU	2GW30	2GW54G	0WW	NNWR	
34. 5p	5BWGG	NGGW7B	GW	C	G	C	C	8 V U6 S F275	GW30	GW5G	7WW	55WW	
								34FNU	2GW30	2GW5G	7WW	55WW	
34. Bp	5BWGG	NGGW7B	GW	C	G	C	C	8 V U6 S F2BG	GW37	2GW7N	N1WB	2BWW	
								34FNU	2GW37	GW7N	N1WB	2BWW	
34FNp	N53WGG	NG1WGG	GW	C	G	C	C	PO-	2GW5B	GWGG1	GWW	2NGGWG	
								HV U6 S 8 PF	GW5B	2GWG1	GWW	2NGGWG	
34FNU	5BWGG	NGGW7B	GW	C	G	C	C	34. Bp	GW37	2GW7N	N1WB	2BWW	
								34. 5p	GW30	GW5G	7WW	55WW	
								34. 7p	GW30	GW54G	0WW	NNWR	
								34. Np	GW37	GW5B	BWG	NRW	
								8 PF~5	2GWR1	GW0R	BWW	2R7WW	
								& HV U6 S 8 PF					
HV U6 S 8 PF	N53WGG	NG1WGG	GW	C	G	GW14	GW07	34FNp	2GW5B	GWGG1	GWW	2NGGWG	
								34FNU	GWR1	2GW0R	NWG	2R7WW	1WGGG
								& 8 PF~5					
JU27/N	5BWGG	NGGW3	GW	C	G	C	C	8 V U6 S F2NR	GW74	GWB3B	3WW	0WG	
								8 V U6 S F277	GWNR	GW70	1WW	1WW	
								34. 7p	2GW30	2GWNG	N5WW	1WW	
JU2B/N	5BWGG	NGGWNG	GW	C	G	C	C	8 V U6 S F2BN	GWGB	GW7G	7WG	5WW	
								8 V U6 S F2B7	GWNR	GW11	1WW	BWR	
								8 V U6 S F2B5	GWGB	GW7N	7WG	5WB	
								8 V U6 S F2BB	2GW71	2GW40	NGWG	BWW	
LV U6 S F2GN	GW04G	44W0R1	GW	GWGG	2GWW1	C	C	8 V U6 S F2GN	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G7	GW04G	44W0R0	GW	GWGG	2GWW1	C	C	8 V U6 S F2G7	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G5	GW04G	44W0R3	GW	GWGG	2GWW1	C	C	8 V U6 S F2G5	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2GB	GW04G	44W03N	GW	GWGG	2GWW1	C	C	8 V U6 S F2GB	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G1	GW04G	44W031	GW	GWGG	2GWW1	C	C	8 V U6 S F2G1	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G0	GW04G	44W03R	GW	GWGG	2GWW1	C	C	8 V U6 S F2G0	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2GR	GW04G	44W033	GW	GWGG	2GWW1	C	C	8 V U6 S F2GR	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G3	GW04G	44W04G	GW	GWGG	2GWW1	C	C	8 V U6 S F2G3	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2G4	GW04G	44W040	GW	GWGG	2GWW1	C	C	8 V U6 S F2G4	GWGG	2GWW1	N7NWR	GWG	
LV U6 S F2NG	GW04G	44WRGN	GW	GWGG	2GWW1	C	C	8 V U6 S F2NG	GWGG	2GWW1	N7NWR	GWG	

Bus		Voltage		Generation		Load		Load Flow					XFMR
-m	MV	f 8 agW	p ngW	8 D	8 %ar	8 D	8 %ar	-m	8 D	8 %ar	p _ 9	f P.	f Fa9
LV U6 S F2N5	G04G	44W3R	GG	GGCG	2GNB1	C	C	8 V U6 S F2N5	GGCG	2GNB1	N7NR	GG	
LV U6 S F2NB	G04G	44W33	GG	GGCG	2GNB1	C	C	8 V U6 S F2NB	GGCG	2GNB1	N7NR	GG	
LV U6 S F2Nl	G04G	44W47	GG	GGCG	2GNB1	C	C	8 V U6 S F2Nl	GGCG	2GNB1	N7NR	GG	
LV U6 S F2N0	G04G	44W3R	GG	GGCG	2GNB1	C	C	8 V U6 S F2N0	GGCG	2GNB1	N7NR	GG	
LV U6 S F2NR	G04G	44WRGN	GG	GGCG	2GNB1	C	C	8 V U6 S F2NR	GGCG	2GNB1	N7NR	GG	
LV U6 S F27G	G04G	44W43	GG	GGCG	2GNB1	C	C	8 V U6 S F27G	GGCG	2GNB1	N7NR	GG	
LV U6 S F27N	G04G	44WRCG	GG	GGCG	2GNB1	C	C	8 V U6 S F27N	GGCG	2GNB1	N7NR	GG	
LV U6 S F277	G04G	44WRGN	GG	GGCG	2GNB1	C	C	8 V U6 S F277	GGCG	2GNB1	N7NR	GG	
LV U6 S F275	G04G	44WRCB	GG	GGCG	2GNB1	C	C	8 V U6 S F275	GGCG	2GNB1	N7NR	GG	
LV U6 S F27B	G04G	44WRNl	GG	GGCG	2GNB1	C	C	8 V U6 S F27B	GGCG	2GNB1	N7NR	GG	
LV U6 S F271	G04G	44WRN0	GG	GGCG	2GNB1	C	C	8 V U6 S F271	GGCG	2GNB1	N7NR	GG	
LV U6 S F270	G04G	44W4B	GG	GGCG	2GNB1	C	C	8 V U6 S F270	GGCG	2GNB1	N7NR	GG	
LV U6 S F27R	G04G	44W41	GG	GGCG	2GNB1	C	C	8 V U6 S F27R	GGCG	2GNB1	N7NR	GG	
LV U6 S F273	G04G	44W43	GG	GGCG	2GNB1	C	C	8 V U6 S F273	GGCG	2GNB1	N7NR	GG	
LV U6 S F274	G04G	44W44	GG	GGCG	2GNB1	C	C	8 V U6 S F274	GGCG	2GNB1	N7NR	GG	
LV U6 S F25N	G04G	44W35	GG	GGCG	2GNB1	C	C	8 V U6 S F25N	GGCG	2GNB1	N7NR	GG	
LV U6 S F257	G04G	44W30	GG	GGCG	2GNB1	C	C	8 V U6 S F257	GGCG	2GNB1	N7NR	GG	
LV U6 S F255	G04G	44W3R	GG	GGCG	2GNB1	C	C	8 V U6 S F255	GGCG	2GNB1	N7NR	GG	
LV U6 S F25B	G04G	44W3B	GG	GGCG	2GNB1	C	C	8 V U6 S F25B	GGCG	2GNB1	N7NR	GG	
LV U6 S F250	G04G	44W3G	GG	GGCG	2GNB1	C	C	8 V U6 S F250	GGCG	2GNB1	N7NR	GG	
LV U6 S F25R	G04G	44W3G	GG	GGCG	2GNB1	C	C	8 V U6 S F25R	GGCG	2GNB1	N7NR	GG	
LV U6 S F254	G04G	44W37	GG	GGCG	2GNB1	C	C	8 V U6 S F254	GGCG	2GNB1	N7NR	GG	
LV U6 S F2BG	G04G	44WR57	GG	GGCG	2GNB1	C	C	8 V U6 S F2BG	GGCG	2GNB1	N7NR	GG	
LV U6 S F2BN	G04G	44WRGR	GG	GGCG	2GNB1	C	C	8 V U6 S F2BN	GGCG	2GNB1	N7NR	GG	
LV U6 S F2B7	G04G	44WRG3	GG	GGCG	2GNB1	C	C	8 V U6 S F2B7	GGCG	2GNB1	N7NR	GG	
LV U6 S F2B5	G04G	44WRGR	GG	GGCG	2GNB1	C	C	8 V U6 S F2B5	GGCG	2GNB1	N7NR	GG	
LV U6 S F2BB	G04G	44WRNl	GG	GGCG	2GNB1	C	C	8 V U6 S F2BB	GGCG	2GNB1	N7NR	GG	
LV U6 S F2Bl	G04G	44WR7G	GG	GGCG	2GNB1	C	C	8 V U6 S F2Bl	GGCG	2GNB1	N7NR	GG	
LV U6 S F2B0	G04G	44WR7R	GG	GGCG	2GNB1	C	C	8 V U6 S F2B0	GGCG	2GNB1	N7NR	GG	
LV U6 S F2B3	G04G	44W44	GG	GGCG	2GNB1	C	C	8 V U6 S F2B3	GGCG	2GNB1	N7NR	GG	
LV U6 S F2B4	G04G	44WRCG	GG	GGCG	2GNB1	C	C	8 V U6 S F2B4	GGCG	2GNB1	N7NR	GG	
LV U6 S F21G	G04G	44W44	GG	GGCG	2GNB1	C	C	8 V U6 S F21G	GGCG	2GNB1	N7NR	GG	
8 V U6 S F2GN	5BWCG	44WRR	GG	C	G	GGCB	GGCB	8 V U6 S F2G7	2GGCB	2GNB4	7W	7W	
								LV U6 S F2GN	GGCG	GNB1	7W	GG	
8 V U6 S F2G7	5BWCG	44WR4	GG	C	G	GGCB	GGCB	8 V U6 S F2GN	GGCB	GNG5	NR	BG	
								8 V U6 S F2G5	2GGG3	2GW17	BW	5W	
								LV U6 S F2G7	GGCG	GNB1	7W	GG	
8 V U6 S F2G5	5BWCG	44W3N	GG	C	G	GGCB	GGCB	8 V U6 S F2G7	GGG3	GW7N7	5W	5W	
								8 V U6 S F2GB	2GGN7	2G50N	0G	5W	

Bus		Voltage		Generation		Load		Load Flow					XFMR
-m	MV	f 8 agW	p ngW	8 D	8 %ar	8 D	8 %ar	-m	8 D	8 %ar	p _ 9	f P.	f Fa9
								LV U6 S F2G5	GWGG	GWB1	7WB	GWG	
8 V U6 S F2GB	5BWGG	44W35	GWG	C	G	GWGB	GWGB	8 V U6 S F2G5	GWN7	GWN1	1WV	BWG	
								8 V U6 S F2GI	2GWNR	2GWB0B	RWV	5WV	
								LV U6 S F2GB	GWGG	GWB1	7WB	GWG	
8 V U6 S F2GI	5BWGG	44W3R	GWG	C	G	GWGB	GWGB	8 V U6 S F2GB	GWNR	GWBN7	0WV	BWG	
								8 V U6 S F2G3	2GWG7N	2GW0N	4WB	5WR	
								LV U6 S F2GI	GWGG	GWB1	7WB	GWG	
8 V U6 S F2G0	5BWGG	44W4G	GWG	C	G	GWGB	GWGB	8 V U6 S F2GR	2GWGB	2GWB4	7WV	7WV	
								LV U6 S F2G0	GWGG	GWB1	7WB	GWG	
8 V U6 S F2GR	5BWGG	44W4N	GWG	C	G	GWGB	GWGB	8 V U6 S F2G0	GWGB	GWN7G	7WG	5WV	
								8 V U6 S F2N0	GWGB	GWB3B	NWB	BWV	
								8 V U6 S F2NI	2GWGN7	2GW15	1WV	5WV	
								LV U6 S F2GR	GWGG	GWB1	7WB	GWG	
8 V U6 S F2G3	5BWGG	44W47	GWG	C	G	GWGB	GWGB	8 V U6 S F2GI	GWG7N	GWB0B	RWV	BWV	
								8 V U6 S F2G4	2GWG71	2GW0N5	NGWV	BWV	
								LV U6 S F2G3	GWGG	GWB1	7WB	GWG	
8 V U6 S F2G4	5BWGG	44W44	GWG	C	G	GWGB	GWGB	8 V U6 S F2G3	GWG71	GWB45	3WV	1WV	
								8 V U6 S F2NG	2GWG74	2GW0B7	NGWV	BWV	
								LV U6 S F2G4	GWGG	GWB1	7WB	GWG	
8 V U6 S F2NG	5BWGG	NGGWGG5	GWG	C	G	GWGB	GWGB	8 V U6 S F2G4	GWG74	GW1N	4WV	1WV	
								8 V U6 S F271	2GWG55	2GWRGG	NWNR	BWV	
								LV U6 S F2NG	GWGG	GWB1	7WB	GWG	
8 V U6 S F2N5	5BWGG	44W34	GWG	C	G	GWGB	GWGB	8 V U6 S F2NB	2GWGB	2GWB4	7WV	7WV	
								LV U6 S F2N5	GWGG	GWB1	7WB	GWG	
8 V U6 S F2NB	5BWGG	44W4G	GWG	C	G	GWGB	GWGB	8 V U6 S F2N5	GWGB	GWNNR	7WG	5WV	
								8 V U6 S F2NI	2GWGG3	2GW00	BWV	5WV	
								LV U6 S F2NB	GWGG	GWB1	7WB	GWG	
8 V U6 S F2NI	5BWGG	44W4B	GWG	C	G	GWGB	GWGB	8 V U6 S F2GR	GWGN7	GW3G	BWR	BWB	
								8 V U6 S F2NB	GWGG3	GWB3R	5WV	BWV	
								8 V U6 S F2NR	2GWG71	2GW0N0	NGWV	BWG	
								LV U6 S F2NI	GWGG	GWB1	7WB	GWG	
8 V U6 S F2N0	5BWGG	44W34	GWG	C	G	GWGB	GWGB	8 V U6 S F2GR	2GWGB	2GWB4	7WV	7WV	
								LV U6 S F2N0	GWGG	GWB1	7WB	GWG	
8 V U6 S F2NR	5BWGG	NGGWGG5	GWG	C	G	GWGB	GWGB	JU27/N	2GWG74	2GW44	NGWG	BWV	
								8 V U6 S F2NI	GWG71	GWB1G	RWV	1WV	
								LV U6 S F2NR	GWGG	GWB1	7WB	GWG	
8 V U6 S F27G	5BWGG	NGGWGG	GWG	C	G	GWGB	GWGB	8 V U6 S F27N	2GWGB	2GWB4	7WV	7WV	
								LV U6 S F27G	GWGG	GWB1	7WB	GWG	
8 V U6 S F27N	5BWGG	NGGWGG7	GWG	C	G	GWGB	GWGB	8 V U6 S F27G	GWGB	GWGRB	NWV	1WV	

Bus		Voltage		Generation		Load		Load Flow					XFMR
-m	MV	f 8 agW	p ngW	8 D	8 %ar	8 D	8 %ar	-m	8 D	8 %ar	p _ 9	f P.	f Fa9
								8 V U6 S F277	2GWGG3	2GW775	5WR	5WR	
								LV U6 S F27N	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F277	5BWGG	NGGWGB	GWG	C	G	GWGB	GWGB	JU27/N	2GWNR	2GWBB	0W	BWN	
								8 V U6 S F27N	GWGB	GWN4B	5W	BW	
								8 V U6 S F274	GWGB	GW0N	NWG	0W	
								LV U6 S F277	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F275	5BWGG	NGGW0	GWG	C	G	GWGB	GWGB	34. 5p	2GWB0	2GWR03	N7W	0WG	
								8 V U6 S F273	GWB7	GWN4	NGWB	0WR	
								LV U6 S F275	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F27B	5BWGG	NGGWNR	GWG	C	G	GWGB	GWGB	8 V U6 S F271	2GWGB	2GWNB4	7W	7W	
								LV U6 S F27B	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F271	5BWGG	NGGWN3	GWG	C	G	GWGB	GWGB	34. Np	2GWB7	2GWBR5	RW	3W	
								8 V U6 S F2NG	GW55	GWN3	5WR	N1W	
								8 V U6 S F27B	GWGB	GWNC0	NW	5W	
								LV U6 S F271	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F270	5BWGG	44W4R	GWG	C	G	GWGB	GWGB	8 V U6 S F27R	2GWGB	2GWNB4	7W	7W	
								LV U6 S F270	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F27R	5BWGG	44W43	GWG	C	G	GWGB	GWGB	8 V U6 S F270	GWGB	GWN7	NW	5WR	
								8 V U6 S F273	2GWGB	2GW0N	BWB	5W	
								LV U6 S F27R	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F273	5BWGG	NGGWGG	GWG	C	G	GWGB	GWGB	8 V U6 S F275	2GWB7	2GWRR7	N7W	1WB	
								8 V U6 S F27R	GWGB	GW71	5W	5WR	
								8 V U6 S F255	GW74	GW543	0WR	RW	
								LV U6 S F273	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F274	5BWGG	NGGWGN	GWG	C	G	GWGB	GWGB	8 V U6 S F277	2GWGB	2GWNB4	7W	7W	
								LV U6 S F274	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F25N	5BWGG	44W30	GWG	C	G	GWGB	GWGB	8 V U6 S F257	2GWGB	2GWNB4	7W	7W	
								LV U6 S F25N	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F257	5BWGG	44W33	GWG	C	G	GWGB	GWGB	8 V U6 S F25N	GWGB	GW54	GWR	NGW	
								8 V U6 S F255	2GWGB	2GWN4	5W	BWB	
								LV U6 S F257	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F255	5BWGG	44W34	GWG	C	G	GWGB	GWGB	8 V U6 S F273	2GW74	2GWB0	NGW	BW	
								8 V U6 S F257	GWGB	GWN0N	7WR	1W	
								8 V U6 S F25B	GWNR	GW550	1W	1WG	
								LV U6 S F255	GWGGG	GWNB1	7WB	GWG	
8 V U6 S F25B	5BWGG	44W3R	GWG	C	G	GWGB	GWGB	8 V U6 S F255	2GWNR	2GW53G	0WB	BWB	
								8 V U6 S F250	GWGB	GWGN	5WB	BWN	
								8 V U6 S F254	GWGB	GW74	GW	NBWG	
								LV U6 S F25B	GWGGG	GWNB1	7WB	GWG	

Prolect:	TD OH D -Tm	**ETAP**		Page:	1
Location:	Paulding, OH	N0WGWGC		mate:	NG2G027GNR
Contract:				ST:	D ESFD OOmP
Engineer:	Josh Venden			v e%sion:	Gf k ET
. ilena_ e:	TD j OH	Study Case: NG1P6 NP.		ConAgW	Tor_ al

Bus		Voltage		Generation		Load		Load Flow					XFMR
-m	MV	f 8 agW	p ngW	8 D	8 %ar	8 D	8 %ar	-m	8 D	8 %ar	p_9	f P.	f Fa9
8 V U6 S F250	5BWCG	44W35	GW	C	G	GWCB	GWCB	8 V U6 S F25B	2GWG3	2GW7RN	BW	5W	
								8 V U6 S F25R	GWCB	GW77	7W	5W	
								LV U6 S F250	GWCG	GWB1	7W	GW	
8 V U6 S F25R	5BWCG	44W37	GW	C	G	GWCB	GWCB	8 V U6 S F250	2GWCB	2GWB4	7W	7W	
								LV U6 S F25R	GWCG	GWB1	7W	GW	
8 V U6 S F254	5BWCG	44W3B	GW	C	G	GWCB	GWCB	8 V U6 S F25B	2GWCB	2GWB4	7W	7W	
								LV U6 S F254	GWCG	GWB1	7W	GW	
8 V U6 S F2BG	5BWCG	NGGW5B	GW	C	G	GWCB	GWCB	34. Bp	2GW37	2GW57	NGW	0W	
								8 V U6 S F2B0	GW53	GWB5	3W	RW	
								LV U6 S F2BG	GWCG	GWB1	7W	GW	
8 V U6 S F2BN	5BWCG	NGGWC4	GW	C	G	GWCB	GWCB	JU2B/N	2GWCB	2GWB4	7W	7W	
								LV U6 S F2BN	GWCG	GWB1	7W	GW	
8 V U6 S F2B7	5BWCG	NGGWNG	GW	C	G	GWCB	GWCB	JU2B/N	2GWNR	2GW10	0WG	BW	
								8 V U6 S F2B4	GWN5	GW7CR	5W	0WG	
								LV U6 S F2B7	GWCG	GWB1	7W	GW	
8 V U6 S F2B5	5BWCG	NGGWC4	GW	C	G	GWCB	GWCB	JU2B/N	2GWCB	2GWB4	7W	7W	
								LV U6 S F2B5	GWCG	GWB1	7W	GW	
8 V U6 S F2BB	5BWCG	NGGWNR	GW	C	G	GWCB	GWCB	JU2B/N	GW71	GWB04	RW	1W	
								8 V U6 S F2B1	2GW74	2GW7N3	NGW8	BW	
								LV U6 S F2BB	GWCG	GWB1	7W	GW	
8 V U6 S F2B1	5BWCG	NGGW75	GW	C	G	GWCB	GWCB	8 V U6 S F2BB	GW74	GWB40	3W	1W	
								8 V U6 S F2B0	2GW55	2GW7B1	NGW	1W	
								LV U6 S F2B1	GWCG	GWB1	7W	GW	
8 V U6 S F2B0	5BWCG	NGGW5G	GW	C	G	GWCB	GWCB	8 V U6 S F2BG	2GW5R	2GW7G1	NGW	0W	
								8 V U6 S F2B1	GW55	GWB10	RW	RW	
								LV U6 S F2B0	GWCG	GWB1	7W	GW	
8 V U6 S F2B3	5BWCG	NGGWCN	GW	C	G	GWCB	GWCB	8 V U6 S F2B4	2GWCB	2GWB4	7W	7W	
								LV U6 S F2B3	GWCG	GWB1	7W	GW	
8 V U6 S F2B4	5BWCG	NGGWC7	GW	C	G	GWCB	GWCB	8 V U6 S F2B7	2GWN7	2GW5R0	0W	5W	
								8 V U6 S F2B3	GWCB	GWN5	NW	5W	
								8 V U6 S F21G	GWCB	GWNB	NW	5W	
								LV U6 S F2B4	GWCG	GWB1	7W	GW	
8 V U6 S F21G	5BWCG	NGGWCN	GW	C	G	GWCB	GWCB	8 V U6 S F2B4	2GWCB	2GWB4	7W	7W	
								LV U6 S F21G	GWCG	GWB1	7W	GW	
* PO-	N53WCG	NG1WCG	GW	GW5B	2GWNN	C	C	34FNp	GW5B	2GWNN	GW	244W	
8 PF~5	N5WCG	NGGW70	GW	C	G	C	C	HV U6 S 8 PF & 34FNU	GWCG	GWCG	GW	GW	

* -ndicates a %ltage regulated bus (%ltage controlled or swing ty9e _ achine connected to it)

-ndicates a bus with a load _ is_ atch oA_ ore than GW8 Vp

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
34YFp	52.CD0	F00.7CD	7.F	0	0	0	0	8 V B1 S I -7G	-6.F32	-F.F55	F02.4	43.2	
								34I FB	6.F32	F.F55	F02.4	43.2	
34Y7p	52.CD0	F00.7CD	7.F	0	0	0	0	JB-7/F	-6.305	-F.FFG	FFGF	43.R	
								34I FB	6.305	F.FFG	FFGF	43.R	
34Y5p	52.CD0	F00.7CD	7.F	0	0	0	0	8 V B1 S I -75	-6.300	-F.5R0	FFG3	43.0	
								34I FB	6.300	F.5R0	FFG3	43.0	
34Y2p	52.CD0	F00.7CD	7.F	0	0	0	0	8 V B1 S I -20	-6.F63	-7.7R3	F04.3	45.3	
								34I FB	6.F63	7.7R3	F04.3	45.3	
34I Fp	F53.000	F00.007	0.0	0	0	0	0	PON	7G3R6	2.R5G	FF0.F	43.2	
								HV B1 S 8 PI	-7G3R6	-2.R5G	FF0.F	43.2	
34I FB	52.CD0	F00.7CD	7.F	0	0	0	0	34Y2p	-6.F63	-7.7R3	F04.3	45.3	
								34Y5p	-6.300	-F.5R0	FFG3	43.0	
								34Y7p	-6.305	-F.FFG	FFGF	43.R	
								34YFp	-6.F32	-F.F55	F02.4	43.2	
								8 PI ~5	7G4C2	G34R	222.5	4RG	
								& HV B1 S 8 PI					
HV B1 S 8 PI	F53.000	F00.007	0.0	0	0	0.0C2	0.F2R	34I Fp	7G3R6	2.R5G	FF0.F	43.2	
								34I FB	-7G474	-2.337	FF0.2	43.5	0.67G
								& 8 PI ~5					
JB-7/F	52.CD0	F00.566	7.7	0	0	0	0	8 V B1 S I -FR	-2.555	-0.2R3	R7.R	44.2	
								8 V B1 S I -77	-7.2RR	-0.77G	2F.G	44.6	
								34Y7p	6.304	0.R05	FF2.F	44.G	
JB-2/F	52.CD0	F00.337	7.G	0	0	0	0	8 V B1 S I -2F	-0.670	-0.0F3	F0.5	F00.0	
								8 V B1 S I -27	-7.2RR	-0.F43	2F.7	44.R	
								8 V B1 S I -25	-0.670	-0.0FR	F0.5	F00.0	
								8 V B1 S I -22	5.RFR	0.752	6F.3	44.3	
LV B1 S I -0F	0.640	F00.323	5.F	0.67G	0.000	0	0	8 V B1 S I -0F	0.67G	0.000	GF3.G	F00.0	
LV B1 S I -07	0.640	F00.37F	5.F	0.67G	0.000	0	0	8 V B1 S I -07	0.67G	0.000	GF3.6	F00.0	
LV B1 S I -05	0.640	F00.RR2	5.F	0.67G	0.000	0	0	8 V B1 S I -05	0.67G	0.000	GF3.4	F00.0	
LV B1 S I -02	0.640	F00.R27	5.F	0.67G	0.000	0	0	8 V B1 S I -02	0.67G	0.000	GF4.0	F00.0	
LV B1 S I -0G	0.640	F00.64G	5.F	0.67G	0.000	0	0	8 V B1 S I -0G	0.67G	0.000	GF4.5	F00.0	
LV B1 S I -06	0.640	F00.63F	5.0	0.67G	0.000	0	0	8 V B1 S I -06	0.67G	0.000	GF4.2	F00.0	
LV B1 S I -0R	0.640	F00.665	5.0	0.67G	0.000	0	0	8 V B1 S I -0R	0.67G	0.000	GF4.2	F00.0	
LV B1 S I -03	0.640	F00.6G4	5.0	0.67G	0.000	0	0	8 V B1 S I -03	0.67G	0.000	GF4.G	F00.0	
LV B1 S I -04	0.640	F00.60G	5.0	0.67G	0.000	0	0	8 V B1 S I -04	0.67G	0.000	GF4.R	F00.0	
LV B1 S I -F0	0.640	F00.GR6	5.0	0.67G	0.000	0	0	8 V B1 S I -F0	0.67G	0.000	GF4.4	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
LV B1 S I -F5	0.640	F00.R7R	5.0	0.67G	0.000	0	0	8 V B1 S I -F5	0.67G	0.000	GF4.F	F00.0	
LV B1 S I -F2	0.640	F00.R03	5.0	0.67G	0.000	0	0	8 V B1 S I -F2	0.67G	0.000	GF4.7	F00.0	
LV B1 S I -FG	0.640	F00.6F5	5.0	0.67G	0.000	0	0	8 V B1 S I -FG	0.67G	0.000	GF4.R	F00.0	
LV B1 S I -F6	0.640	F00.R07	5.0	0.67G	0.000	0	0	8 V B1 S I -F6	0.67G	0.000	GF4.7	F00.0	
LV B1 S I -FR	0.640	F00.G54	5.0	0.67G	0.000	0	0	8 V B1 S I -FR	0.67G	0.000	G70.F	F00.0	
LV B1 S I -70	0.640	F00.6G5	5.0	0.67G	0.000	0	0	8 V B1 S I -70	0.67G	0.000	GF4.G	F00.0	
LV B1 S I -7F	0.640	F00.603	5.0	0.67G	0.000	0	0	8 V B1 S I -7F	0.67G	0.000	GF4.R	F00.0	
LV B1 S I -77	0.640	F00.GR5	5.0	0.67G	0.000	0	0	8 V B1 S I -77	0.67G	0.000	GF4.4	F00.0	
LV B1 S I -75	0.640	F00.G66	5.0	0.67G	0.000	0	0	8 V B1 S I -75	0.67G	0.000	GF4.4	F00.0	
LV B1 S I -72	0.640	F00.2GR	7.4	0.67G	0.000	0	0	8 V B1 S I -72	0.67G	0.000	G70.G	F00.0	
LV B1 S I -7G	0.640	F00.223	7.4	0.67G	0.000	0	0	8 V B1 S I -7G	0.67G	0.000	G70.6	F00.0	
LV B1 S I -76	0.640	F00.664	5.0	0.67G	0.000	0	0	8 V B1 S I -76	0.67G	0.000	GF4.2	F00.0	
LV B1 S I -7R	0.640	F00.626	5.0	0.67G	0.000	0	0	8 V B1 S I -7R	0.67G	0.000	GF4.G	F00.0	
LV B1 S I -73	0.640	F00.602	5.0	0.67G	0.000	0	0	8 V B1 S I -73	0.67G	0.000	GF4.3	F00.0	
LV B1 S I -74	0.640	F00.67G	5.0	0.67G	0.000	0	0	8 V B1 S I -74	0.67G	0.000	GF4.6	F00.0	
LV B1 S I -5F	0.640	F00.R32	5.F	0.67G	0.000	0	0	8 V B1 S I -5F	0.67G	0.000	GF3.3	F00.0	
LV B1 S I -57	0.640	F00.RF3	5.F	0.67G	0.000	0	0	8 V B1 S I -57	0.67G	0.000	GF4.7	F00.0	
LV B1 S I -55	0.640	F00.63G	5.F	0.67G	0.000	0	0	8 V B1 S I -55	0.67G	0.000	GF4.5	F00.0	
LV B1 S I -52	0.640	F00.R7G	5.F	0.67G	0.000	0	0	8 V B1 S I -52	0.67G	0.000	GF4.F	F00.0	
LV B1 S I -56	0.640	F00.303	5.F	0.67G	0.000	0	0	8 V B1 S I -56	0.67G	0.000	GF3.R	F00.0	
LV B1 S I -5R	0.640	F00.372	5.F	0.67G	0.000	0	0	8 V B1 S I -5R	0.67G	0.000	GF3.6	F00.0	
LV B1 S I -54	0.640	F00.R4R	5.F	0.67G	0.000	0	0	8 V B1 S I -54	0.67G	0.000	GF3.3	F00.0	
LV B1 S I -20	0.640	F00.35G	5.F	0.67G	0.000	0	0	8 V B1 S I -20	0.67G	0.000	GF3.6	F00.0	
LV B1 S I -2F	0.640	F0F.052	5.7	0.67G	0.000	0	0	8 V B1 S I -2F	0.67G	0.000	GFR.G	F00.0	
LV B1 S I -27	0.640	F0F.0FR	5.7	0.67G	0.000	0	0	8 V B1 S I -27	0.67G	0.000	GFR.6	F00.0	
LV B1 S I -25	0.640	F0F.055	5.7	0.67G	0.000	0	0	8 V B1 S I -25	0.67G	0.000	GFR.G	F00.0	
LV B1 S I -22	0.640	F00.460	5.7	0.67G	0.000	0	0	8 V B1 S I -22	0.67G	0.000	GFR.4	F00.0	
LV B1 S I -2G	0.640	F00.470	5.7	0.67G	0.000	0	0	8 V B1 S I -2G	0.67G	0.000	GF3.F	F00.0	
LV B1 S I -26	0.640	F00.3RF	5.7	0.67G	0.000	0	0	8 V B1 S I -26	0.67G	0.000	GF3.2	F00.0	
LV B1 S I -23	0.640	F0F.FCG	5.5	0.67G	0.000	0	0	8 V B1 S I -23	0.67G	0.000	GF6.4	F00.0	
LV B1 S I -24	0.640	F0F.F55	5.5	0.67G	0.000	0	0	8 V B1 S I -24	0.67G	0.000	GFR.0	F00.0	
LV B1 S I -C0	0.640	F0F.FG2	5.5	0.67G	0.000	0	0	8 V B1 S I -C0	0.67G	0.000	GF6.4	F00.0	
8 V B1 S I -0F	52.G00	F00.RF2	7.5	0	0	0.002	0.002	8 V B1 S I -07	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -0F	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -07	52.G00	F00.636	7.5	0	0	0.002	0.002	8 V B1 S I -0F	-0.670	-0.056	F0.5	44.3	
								8 V B1 S I -05	F.720	0.072	70.6	F00.0	
								LV B1 S I -07	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -05	52.G00	F00.654	7.5	0	0	0.002	0.002	8 V B1 S I -07	-F.754	-0.062	70.6	44.4	
								8 V B1 S I -02	F.3G4	0.0G7	50.4	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
								LV B1 S I -05	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -02	52.GD0	F00.603	7.5	0	0	0.002	0.002	8 V B1 S I -05	-F.3G3	-0.044	5F.0	44.4	
								8 V B1 S I -0G	7.2R3	0.03R	2F.7	44.4	
								LV B1 S I -02	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -0G	52.GD0	F00.G60	7.5	0	0	0.002	0.002	8 V B1 S I -02	-7.2RR	-0.F20	2F.5	44.3	
								8 V B1 S I -03	5.04R	0.F73	GF.6	44.4	
								LV B1 S I -0G	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -06	52.GD0	F00.G26	7.5	0	0	0.002	0.002	8 V B1 S I -0R	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -06	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -0R	52.GD0	F00.G74	7.5	0	0	0.002	0.002	8 V B1 S I -06	-0.670	-0.0F3	F0.5	F00.0	
								8 V B1 S I -F6	-0.670	-0.0G2	F0.2	44.6	
								8 V B1 S I -FG	F.3G4	0.060	5F.0	44.4	
								LV B1 S I -0R	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -03	52.GD0	F00.G72	7.5	0	0	0.002	0.002	8 V B1 S I -0G	-5.046	-0.77G	GF.R	44.R	
								8 V B1 S I -04	5.RF6	0.7F2	67.0	44.3	
								LV B1 S I -03	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -04	52.GD0	F00.2RF	7.5	0	0	0.002	0.002	8 V B1 S I -03	-5.RF2	-0.555	67.F	44.6	
								8 V B1 S I -F0	2.552	0.57F	R7.2	44.R	
								LV B1 S I -04	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -F0	52.GD0	F00.22F	7.5	0	0	0.002	0.002	8 V B1 S I -04	-2.555	-0.2F7	R7.G	44.6	
								8 V B1 S I -7G	2.4G7	0.200	37.3	44.R	
								LV B1 S I -F0	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -F5	52.GD0	F00.G45	7.5	0	0	0.002	0.002	8 V B1 S I -F2	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -F5	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -F2	52.GD0	F00.GR2	7.5	0	0	0.002	0.002	8 V B1 S I -F5	-0.670	-0.07F	F0.5	44.4	
								8 V B1 S I -FG	F.720	0.004	70.6	F00.0	
								LV B1 S I -F2	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -FG	52.GD0	F00.2R4	7.5	0	0	0.002	0.002	8 V B1 S I -0R	-F.3G3	-0.F55	5F.0	44.R	
								8 V B1 S I -F2	-F.753	-0.034	70.R	44.R	
								8 V B1 S I -FR	5.RFR	0.7F0	67.0	44.3	
								LV B1 S I -FG	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -F6	52.GD0	F00.G6R	7.5	0	0	0.002	0.002	8 V B1 S I -0R	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -F6	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -FR	52.GD0	F00.202	7.7	0	0	0.002	0.002	JB-7/F	2.552	0.562	R7.G	44.6	
								8 V B1 S I -FG	-5.RF2	-0.5R6	67.7	44.G	
								LV B1 S I -FR	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -70	52.GD0	F00.GF4	7.7	0	0	0.002	0.002	8 V B1 S I -7F	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -70	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -7F	52.GD0	F00.2R2	7.7	0	0	0.002	0.002	8 V B1 S I -70	-0.670	-0.062	F0.2	44.G	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
								8 V B1 S I -77	F.720	0.0G7	70.R	44.4	
								LV B1 S I -7F	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -77	52.GD0	F00.253	7.7	0	0	0.002	0.002	JB-7/F	7.2R4	0.F2R	2F.2	44.3	
								8 V B1 S I -7F	-F.754	-0.037	70.R	44.3	
								8 V B1 S I -74	-0.670	-0.0RR	F0.2	44.7	
								LV B1 S I -77	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -75	52.GD0	F00.257	7.5	0	0	0.002	0.002	34Y5p	6.3F0	0.R2G	FF2.F	44.2	
								8 V B1 S I -73	-6.F40	-0.RGR	F05.4	44.5	
								LV B1 S I -75	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -72	52.GD0	F00.577	7.7	0	0	0.002	0.002	8 V B1 S I -7G	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -72	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -7G	52.GD0	F00.5F5	7.7	0	0	0.002	0.002	34YFp	6.F3R	0.343	F02.5	44.0	
								8 V B1 S I -F0	-2.42R	-0.3R3	35.3	43.G	
								8 V B1 S I -72	-0.670	-0.05F	F0.2	44.4	
								LV B1 S I -7G	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -76	52.GD0	F00.G52	7.5	0	0	0.002	0.002	8 V B1 S I -7R	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -76	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -7R	52.GD0	F00.GF7	7.5	0	0	0.002	0.002	8 V B1 S I -76	-0.670	-0.076	F0.5	44.4	
								8 V B1 S I -73	F.720	0.0F2	70.6	F00.0	
								LV B1 S I -7R	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -73	52.GD0	F00.264	7.5	0	0	0.002	0.002	8 V B1 S I -75	6.F47	0.606	F05.6	44.G	
								8 V B1 S I -7R	-F.754	-0.0GF	70.R	44.4	
								8 V B1 S I -55	-2.555	-0.G6R	R7.3	44.7	
								LV B1 S I -73	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -74	52.GD0	F00.24F	7.7	0	0	0.002	0.002	8 V B1 S I -77	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -74	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -5F	52.GD0	F00.624	7.5	0	0	0.002	0.002	8 V B1 S I -57	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -5F	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -57	52.GD0	F00.GB5	7.5	0	0	0.002	0.002	8 V B1 S I -5F	-0.6F4	-0.044	F0.2	43.R	
								8 V B1 S I -55	F.754	0.033	70.R	44.3	
								LV B1 S I -57	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -55	52.GD0	F00.GGD	7.5	0	0	0.002	0.002	8 V B1 S I -73	2.556	0.570	R7.2	44.R	
								8 V B1 S I -57	-F.754	-0.FFG	70.R	44.6	
								8 V B1 S I -52	-7.2RR	-0.7F6	2F.2	44.6	
								LV B1 S I -55	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -52	52.GD0	F00.G40	7.5	0	0	0.002	0.002	8 V B1 S I -55	7.2R3	0.FR7	2F.5	44.3	
								8 V B1 S I -56	-F.754	-0.0RG	70.6	44.3	
								8 V B1 S I -54	-0.6F4	-0.F04	F0.G	43.G	
								LV B1 S I -52	-0.672	0.003	F0.2	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
8 V B1 S I -56	52.GD0	F00.6R2	7.2	0	0	0.002	0.002	8 V B1 S I -52	F.720	0.002	70.6	F00.0	
								8 V B1 S I -5R	-0.670	-0.0F6	F0.5	F00.0	
								LV B1 S I -56	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -5R	52.GD0	F00.640	7.2	0	0	0.002	0.002	8 V B1 S I -56	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -5R	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -54	52.GD0	F00.667	7.2	0	0	0.002	0.002	8 V B1 S I -52	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -54	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -20	52.GD0	F00.R00	7.2	0	0	0.002	0.002	34Y2p	6.F34	0.R2R	F05.6	44.5	
								8 V B1 S I -26	-GG64	-0.RG4	45.2	44.F	
								LV B1 S I -20	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -2F	52.GD0	F00.400	7.G	0	0	0.002	0.002	JB-2/F	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -2F	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -27	52.GD0	F00.335	7.G	0	0	0.002	0.002	JB-2/F	7.2RR	0.F43	2F.7	44.R	
								8 V B1 S I -24	-F.3GR	-0.704	5F.0	44.2	
								LV B1 S I -27	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -25	52.GD0	F00.344	7.G	0	0	0.002	0.002	JB-2/F	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -25	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -22	52.GD0	F00.37G	7.G	0	0	0.002	0.002	JB-2/F	-5.RFG	-0.56F	6F.4	44.G	
								8 V B1 S I -2G	2.552	0.524	R7.7	44.R	
								LV B1 S I -22	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -2G	52.GD0	F00.R36	7.G	0	0	0.002	0.002	8 V B1 S I -22	-2.555	-0.2RF	R7.2	44.2	
								8 V B1 S I -26	2.4G5	0.260	37.6	44.6	
								LV B1 S I -2G	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -26	52.GD0	F00.R5R	7.2	0	0	0.002	0.002	8 V B1 S I -20	GGRF	0.65R	45.F	44.2	
								8 V B1 S I -2G	-2.4GF	-0.624	37.4	44.7	
								LV B1 S I -26	-0.672	0.003	F0.2	F00.0	
8 V B1 S I -23	52.GD0	F0F.07F	7.G	0	0	0.002	0.002	8 V B1 S I -24	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -23	-0.672	0.003	F0.5	F00.0	
8 V B1 S I -24	52.GD0	F00.444	7.G	0	0	0.002	0.002	8 V B1 S I -27	F.3G4	0.053	50.3	F00.0	
								8 V B1 S I -23	-0.670	-0.07G	F0.5	44.4	
								8 V B1 S I -CD	-0.670	-0.072	F0.5	44.4	
								LV B1 S I -24	-0.672	0.003	F0.5	F00.0	
8 V B1 S I -CD	52.GD0	F0F.070	7.G	0	0	0.002	0.002	8 V B1 S I -24	0.670	-0.0F7	F0.5	-F00.0	
								LV B1 S I -CD	-0.672	0.003	F0.5	F00.0	
* PON	F53.000	F00.000	0.0	-7G3RG	-2.R54	0	0	34I Fp	-7G3RG	-2.R54	FF0.F	43.2	
8 PI ~5	F5.300	F00.502	7.5	0	0	0	0	HV B1 S 8 PI & 34I FB	0.000	0.000	0.0	0.0	

* Nidicates a %oltage regulated bus (%oltage controlled or swing ty9e machine connected to it)

Nidicates a bus with a load mismatch oAmore than 0.F 8 Vp

Pro7ect:	F m OH m RF j	**ETAP**		Page:	N
Location:	Paulding, OH	NWDDDC		j ate:	NDvD%f DNk
Contract:				SF :	m ES_m OOj P
Engineer:	Josh Venden	Study Case: NPG 16L. 0		AeMsion:	f 6p 0 EF
I ilena- e:	F m 2OH			Con8igT	F or- al

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	. - 4	p PI	p _a4
51I N	B%6LDD	NDDN1W	f TN	E	D	E	E	3 V UGS _vf6	vWN5B	vf DWD	ND5T5	1%dI	
								51_NU	WN5B	f DWD	ND5T5	1%dI	
51I f.	B%6LDD	NDDN1W	f TN	E	D	E	E	JUvf/N	vW5Df	vf NB6	NN1TN	16T%	
								51_NU	W5Df	f NB6	NN1TN	16T%	
51I B.	B%6LDD	NDDN1W	f TN	E	D	E	E	3 V UGS _vfB	vWk15	vf B51	NfDP%	1%dB	
								51_NU	Wk15	f B51	NfDP%	1%dB	
51I %	B%6LDD	NDDN1W	f TN	E	D	E	E	3 V UGS _v%D	vWNWV	vBfDB	NNWD	55Tk	
								51_NU	WNWV	BfDB	NNWD	55Tk	
51_N	NB5TDDD	NDDDDf	DfD	E	D	E	E	POR	f6T5W5	5T5B5	NN%dD	16TD	
								HV UGS 3 P_	vf6T5W5	v5T5B5	NN%dD	16TD	
51_NU	B%6LDD	NDDN1W	f TN	E	D	E	E	51I %	vWNWV	vBfDB	NNWD	55Tk	
								51I B.	vWk15	vf B51	NfDP%	1%dB	
								51I f.	vW5Df	vf NB6	NN1TN	16T%	
								51I N	vWN5B	vf DWD	ND5T5	1%dI	
								3 P_~B	f6TI%I	1Tk55	%WBIf	1BIW	
								& HV UGS 3 P_					
HV UGS 3 P_	NB5TDDD	NDDDDf	DfD	E	D	DfD6%	DfN%k	51_N	f6T5W5	5T5B5	NN%dD	16TD	
								51_NU	vf6TIf N	v5TW5W	NN%P%	1%d5	NIf6D
								& 3 P_~B					
JUvf/N	B%6LDD	NDDBB5	f Tf	E	D	E	E	3 V UGS _vNk	v%BBBf	vNNf5	k%dk	1W5	
								3 V UGS _vf f	vf P/kk	vDf61W	%fT6	1kTf	
								51I f.	W5DI	Nkf%	NNkTN	1WII	
JUv%N	B%6LDD	NDDIIBI	f T5	E	D	E	E	3 V UGS _v%N	vDfWD	vDfNN	NDP%	15T%	
								3 V UGS _v%f	vf P/kk	vDf5kD	%fTN	1kT5	
								3 V UGS _v%B	vDfWD	vDfNND	NDP%	15T5	
								3 V UGS _v%%	BIkNW	DIk1N	WBID	1kT5	
LV UGS _vDN	DfWD	NDNDD%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDN	DfWf6	DfDIB	6fBIf	15TI	
LV UGS _vDf	DfWD	NDNDNW	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDf	DfWf6	DfDIB	6fBIB	15TI	
LV UGS _vDB	DfWD	NDDIIW5	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDB	DfWf6	DfDIB	6fBIW	15TI	
LV UGS _vD%	DfWD	NDDIIB%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vD%	DfWf6	DfDIB	6fBI5	15TI	
LV UGS _vD6	DfWD	NDD55%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vD6	DfWf6	DfDIB	6f%dD	15TI	
LV UGS _vDW	DfWD	NDD5Wf	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDW	DfWf6	DfDIB	6f%dN	15TI	
LV UGS _vDk	DfWD	NDD5%%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDk	DfWf6	DfDIB	6f%df	15TI	
LV UGS _vD5	DfWD	NDD5%%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vD5	DfWf6	DfDIB	6f%df	15TI	
LV UGS _vDI	DfWD	NDDIk5%	BfD	DfWf6	DfDIB	E	E	3 V UGS _vDI	DfWf6	DfDIB	6f%d6	15TI	
LV UGS _vND	DfWD	NDDIk6D	BfD	DfWf6	DfDIB	E	E	3 V UGS _vND	DfWf6	DfDIB	6f%dk	15TI	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	. - 4	p PI	p _a4
LV UGS _vNB	DfWD	NDDIIDf5	BfD	DfWf6	DfDfB	E	E	3 V UGS _vNB	DfWf6	DfDfB	6f BfI	15fI	
LV UGS _vN%	DfWD	NDD555	BfD	DfWf6	DfDfB	E	E	3 V UGS _vN%	DfWf6	DfDfB	6f %fD	15fI	
LV UGS _vN6	DfWD	NDDk1N	BfD	DfWf6	DfDfB	E	E	3 V UGS _vN6	DfWf6	DfDfB	6f %f6	15fI	
LV UGS _vNW	DfWD	NDD55%	BfD	DfWf6	DfDfB	E	E	3 V UGS _vNW	DfWf6	DfDfB	6f %fD	15fI	
LV UGS _vNk	DfWD	NDDkDk	BfD	DfWf6	DfDfB	E	E	3 V UGS _vNk	DfWf6	DfDfB	6f %fI	15fI	
LV UGS _vfD	DfWD	NDD5fB	BfD	DfWf6	DfDfB	E	E	3 V UGS _vfD	DfWf6	DfDfB	6f %fB	15fI	
LV UGS _vfN	DfWD	NDDkkk	BfD	DfWf6	DfDfB	E	E	3 V UGS _vfN	DfWf6	DfDfB	6f %fW	15fI	
LV UGS _vff	DfWD	NDDk%D	BfD	DfWf6	DfDfB	E	E	3 V UGS _vff	DfWf6	DfDfB	6f %f5	15fI	
LV UGS _vfB	DfWD	NDDk%f	BfD	DfWf6	DfDfB	E	E	3 V UGS _vfB	DfWf6	DfDfB	6f %f5	15fI	
LV UGS _vf%	DfWD	NDDWDI	f`II	DfWf6	DfDfB	E	E	3 V UGS _vf%	DfWf6	DfDfB	6f 6Tf%	15fI	
LV UGS _vf6	DfWD	NDD611	f`II	DfWf6	DfDfB	E	E	3 V UGS _vf6	DfWf6	DfDfB	6f 6Tf6	15fI	
LV UGS _vfW	DfWD	NDD56%	BfD	DfWf6	DfDfB	E	E	3 V UGS _vfW	DfWf6	DfDfB	6f %ff	15fI	
LV UGS _vfk	DfWD	NDD5BN	BfD	DfWf6	DfDfB	E	E	3 V UGS _vfk	DfWf6	DfDfB	6f %fB	15fI	
LV UGS _vf5	DfWD	NDDk5k	BfD	DfWf6	DfDfB	E	E	3 V UGS _vf5	DfWf6	DfDfB	6f %f6	15fI	
LV UGS _vf1	DfWD	NDDk1%	BfD	DfWf6	DfDfB	E	E	3 V UGS _vf1	DfWf6	DfDfB	6f %f6	15fI	
LV UGS _vBN	DfWD	NDDII5f	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBN	DfWf6	DfDfB	6f BfI6	15fI	
LV UGS _vBf	DfWD	NDDIIN6	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBf	DfWf6	DfDfB	6f BfI	15fI	
LV UGS _vBB	DfWD	NDD55D	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBB	DfWf6	DfDfB	6f %fD	15fI	
LV UGS _vB%	DfWD	NDDIIf B	BfD	DfWf6	DfDfB	E	E	3 V UGS _vB%	DfWf6	DfDfB	6f BfI5	15fI	
LV UGS _vBW	DfWD	NDNIDDI	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBW	DfWf6	DfDfB	6f BfI%	15fI	
LV UGS _vBk	DfWD	NDNIDf6	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBk	DfWf6	DfDfB	6f BfIB	15fI	
LV UGS _vBl	DfWD	NDDII1k	BfD	DfWf6	DfDfB	E	E	3 V UGS _vBl	DfWf6	DfDfB	6f BfI%	15fI	
LV UGS _v%D	DfWD	NDNID66	BfN	DfWf6	DfDfB	E	E	3 V UGS _v%D	DfWf6	DfDfB	6f BfN	15fI	
LV UGS _v%N	DfWD	NDNIf5f	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%N	DfWf6	DfDfB	6ff`ID	15fI	
LV UGS _v%f	DfWD	NDNIfW6	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%f	DfWf6	DfDfB	6ff`ID	15fI	
LV UGS _v%B	DfWD	NDNIf5f	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%B	DfWf6	DfDfB	6ff`ID	15fI	
LV UGS _v%%	DfWD	NDNIfDN	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%%	DfWf6	DfDfB	6ff`I%	15fI	
LV UGS _v%6	DfWD	NDNIN6W	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%6	DfWf6	DfDfB	6ff`IW	15fI	
LV UGS _v%W	DfWD	NDNIDI5	BfN	DfWf6	DfDfB	E	E	3 V UGS _v%W	DfWf6	DfDfB	6ff`II	15fI	
LV UGS _v%k	DfWD	NDNI%ND	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%k	DfWf6	DfDfB	6fNIB	15fI	
LV UGS _v%l	DfWD	NDNIB55	BIf	DfWf6	DfDfB	E	E	3 V UGS _v%l	DfWf6	DfDfB	6fNI%	15fI	
LV UGS _v6D	DfWD	NDNI%DI	BIf	DfWf6	DfDfB	E	E	3 V UGS _v6D	DfWf6	DfDfB	6fNIB	15fI	
3 V UGS _vDN	B%f5LD	NDDkNl	f`IB	E	D	DfDD%	DfDD%	3 V UGS _vDf	DfWfD	DfD5N	NDI%	11fT	
								LV UGS _vDN	vDfWf%	vDfD56	NDI6	11fTN	
3 V UGS _vDf	B%f5LD	NDDfWN	f`IB	E	D	DfDD%	DfDD%	3 V UGS _vDN	vDfWfD	vDfNf5	NDI6	1kfI	
								3 V UGS _vDB	NIf%D	DIfND	f`DII	15fW	
								LV UGS _vDf	vDfWf%	vDfD56	NDI6	11fTN	
3 V UGS _vDB	B%f5LD	NDDfWfi	f`IB	E	D	DfDD%	DfDD%	3 V UGS _vDf	vNIfBl	vDIf6D	f`NID	15fD	
								3 V UGS _vD%	N5661	DIBBBN	BNI%	15f6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	. - 4	p PI	p _a4
								LV UGS _vDB	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vD%	B%65LD	NDDMD5	f`B	L	D	DDD%	DDD%	3 V UGS _vDB	vN565	vDBk5	BNJ6	15TD	
								3 V UGS _vD6	f`P4k5	DP%61	%NTl	15TB	
								LV UGS _vD%	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vD6	B%65LD	NDD665	f`B	L	D	DDD%	DDD%	3 V UGS _vD%	vf`P4kk	vDJ6NN	%4`N	1kTl	
								3 V UGS _vD5	BJDD1k	DJ61f	6f`J6	15Tf	
								LV UGS _vD6	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vDW	B%65LD	NDD6B6	f`B	L	D	DDD%	DDD%	3 V UGS _vDk	DMFD	DD5N	NDP%	11Tf	
								LV UGS _vDW	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vDk	B%65LD	NDD6N5	f`B	L	D	DDD%	DDD%	3 V UGS _vDW	vDMFD	vDNNN	NDJ6	15TP%	
								3 V UGS _vNW	vDMFD	vDN%4W	NDJW	1kTB	
								3 V UGS _vN6	N561	DBBB5	BNJ6	15TP%	
								LV UGS _vDk	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vD5	B%65LD	NDD6N5	f`B	L	D	DDD%	DDD%	3 V UGS _vD6	vBJDDlW	vDMW61	6f`J5	1kTW	
								3 V UGS _vDl	BJkNW	DJkkN	WBJf	1kTl	
								LV UGS _vD5	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vDl	B%65LD	NDDP%5	f`B	L	D	DDD%	DDD%	3 V UGS _vD5	vBJkN%	vDJ51D	WBJW	1kTf	
								3 V UGS _vND	%4BBB	DJlkN	k%4D	1kTW	
								LV UGS _vDl	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vND	B%65LD	NDDP4%	f`B	L	D	DDD%	DDD%	3 V UGS _vDl	v%4BBf	vNDMf	k%4B	1kTN	
								3 V UGS _vf6	%4l6f	NJN%B	5%4k	1kTP%	
								LV UGS _vND	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vNB	B%65LD	NDD65f	f`B	L	D	DDD%	DDD%	3 V UGS _vN%	DMFD	DD5N	NDP%	11Tf	
								LV UGS _vNB	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vN%	B%65LD	NDD6Wf	f`B	L	D	DDD%	DDD%	3 V UGS _vNB	vDMFD	vDNNB	NDJ6	15TP%	
								3 V UGS _vN6	NJf%D	DJNl6	fDJl	15T5	
								LV UGS _vN%	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vN6	B%65LD	NDDPAW%	f`B	L	D	DDD%	DDD%	3 V UGS _vDk	vN565	vDP%Nf	BNJk	1kTW	
								3 V UGS _vN%	vNJfB5	vDJfk6	fNJN	1kTW	
								3 V UGS _vNk	BJkNk	DJkWk	WBJf	1kTl	
								LV UGS _vN6	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vNW	B%65LD	NDD66k	f`B	L	D	DDD%	DDD%	3 V UGS _vDk	DMFD	DD5N	NDP%	11Tf	
								LV UGS _vNW	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vNk	B%65LD	NDDB5N	f`Tf	L	D	DDD%	DDD%	JUvf/N	%4BB%	NDN%	k%4f	1kTP%	
								3 V UGS _vN6	vBJkN%	vDJlBB	WBJ5	1kTD	
								LV UGS _vNk	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vfD	B%65LD	NDDP4k	f`Tf	L	D	DDD%	DDD%	3 V UGS _vfN	DMFD	DD5N	NDP%	11Tf	
								LV UGS _vfD	vDMF%	vDD56	NDJ6	11TN	
3 V UGS _vfN	B%65LD	NDDP%D	f`Tf	L	D	DDD%	DDD%	3 V UGS _vfD	vDMFD	vDN6k	NDJW	1kTD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	. - 4	p PI	p _a4
								3 V UGS _vf f	NfBl	DfBS	f NlD	15Tf	
								LV UGS _vf N	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf f	B%65DD	NDDP%NB	f Tf	D	D	DDD%	DDD%	JUvf /N	f P/k5	D65Nl	%6Tf	1k Tl	
								3 V UGS _vf N	vNfBl	vDfW5	f NlN	1k Tk	
								3 V UGS _vf 1	vDWfD	vDNkD	NDfk	1W0%	
								LV UGS _vf f	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf B	B%65DD	NDDP%N6	f TB	D	D	DDD%	DDD%	511B	W5Dl	NkWW	NNkTf	1W5	
								3 V UGS _vf 5	vWN51	vNW56	NDWl	1W6	
								LV UGS _vf B	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf %	B%65DD	NDDf 5f	f Tf	D	D	DDD%	DDD%	3 V UGS _vf 6	DWfD	DD5N	NDP%	11Tf	
								LV UGS _vf %	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf 6	B%65DD	NDDfkf	f Tf	D	D	DDD%	DDD%	511N	WN5W	N5f6	NDkTW	16Tl	
								3 V UGS _vND	v%l1%W	vNWfD	5Wll	16TD	
								3 V UGS _vf %	vDWfD	vDNf%	NDf6	15TN	
								LV UGS _vf 6	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf W	B%65DD	NDD6f 5	f TB	D	D	DDD%	DDD%	3 V UGS _vf k	DWfD	DD5N	NDP%	11Tf	
								LV UGS _vf W	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf k	B%65DD	NDD6D6	f TB	D	D	DDD%	DDD%	3 V UGS _vf W	vDWfD	vDNNl	NDf6	15Tf	
								3 V UGS _vf 5	NfP%D	DfDD	f Dll	15Tk	
								LV UGS _vf k	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf 5	B%65DD	NDDP%WN	f TB	D	D	DDD%	DDD%	3 V UGS _vf B	WNlN	N5B%	NDWB	1k TN	
								3 V UGS _vf k	vNfBl	vDfBW	f NlD	15Tf	
								3 V UGS _vBB	v%BBf	vNfNk	k6TD	1WB	
								LV UGS _vf 5	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vf 1	B%65DD	NDDP%W5	f Tf	D	D	DDD%	DDD%	3 V UGS _vf f	DWfD	DD5N	NDP%	11Tf	
								LV UGS _vf 1	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vBN	B%65DD	NDDW6W	f TB	D	D	DDD%	DDD%	3 V UGS _vBf	DWfD	DD5N	NDP%	11Tf	
								LV UGS _vBN	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vBf	B%65DD	NDD651	f TB	D	D	DDD%	DDD%	3 V UGS _vBN	vDWNl	vDNlf	NDf5	16T5	
								3 V UGS _vBB	NfBl	DfkB	f NlN	1k Tk	
								LV UGS _vBf	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vBB	B%65DD	NDD66%	f TB	D	D	DDD%	DDD%	3 V UGS _vf 5	%BBW	DllkD	kBll	1k TW	
								3 V UGS _vBf	vNfBl	vDBDN	f Nlf	1k Tf	
								3 V UGS _vB%	vf P/kk	vD655	%6TP%	1k TB	
								LV UGS _vBB	vDWf%	vDD56	NDf6	11TN	
3 V UGS _vB%	B%65DD	NDD61k	f TB	D	D	DDD%	DDD%	3 V UGS _vBB	f P/k5	D65%	%6Tf	1k Tk	
								3 V UGS _vBW	vNfBl	vDfWN	f NlN	1k Tl	
								3 V UGS _vBl	vDWNl	vDfDf	NDf5	16TN	
								LV UGS _vB%	vDWf%	vDD56	NDf6	11TN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Rj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	Rj	3 m	3 Mar	. - 4	p PI	p _a4
3 V UGS _vBW	B%6LDD	NDDW8B	f TB	L	D	DDD%	DDD%	3 V UGS _vB%	NIf%D	DfN1D	f D5	15T5	
								3 V UGS _vBk	vDWFD	vDfNDI	NDI6	15T6	
								LV UGS _vBW	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _vBk	B%6LDD	NDDkDD	f TB	L	D	DDD%	DDD%	3 V UGS _vBW	DWFD	DDI5N	NDP%	11Tf	
								LV UGS _vBk	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _vBl	B%6LDD	NDDWkN	f TB	L	D	DDD%	DDD%	3 V UGS _vB%	DWFD	DDI5N	NDP%	11Tf	
								LV UGS _vBl	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _v%D	B%6LDD	NDDkf1	f T%	L	D	DDD%	DDD%	511%	WN55	NfWkW	NDW6	1W6	
								3 V UGS _v%W	v6T6W8	vN5616	1Wlf	1WfN	
								LV UGS _v%D	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _v%N	B%6LDD	NDDll6k	f T6	L	D	DDD%	DDD%	JUv%N	DWFD	DDI5N	NDP%	11Tf	
								LV UGS _v%N	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v%f	B%6LDD	NDDll%D	f T6	L	D	DDD%	DDD%	JUv%N	f T%kk	DT6Wl	%fTN	1kT6	
								3 V UGS _v%l	vN56k	vDP%5	BNI5	1Wk	
								LV UGS _v%f	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v%B	B%6LDD	NDDll6k	f T6	L	D	DDD%	DDD%	JUv%N	DWFD	DDI5N	NDP%	11Tf	
								LV UGS _v%B	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v%%	B%6LDD	NDD5kW	f T6	L	D	DDD%	DDD%	JUv%N	vBkN%	vDIlN5	WBI6	1kTN	
								3 V UGS _v%6	%BB3%	DIl11	kBI5	1kT%	
								LV UGS _v%%	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v%6	B%6LDD	NDD5BD	f T%	L	D	DDD%	DDD%	3 V UGS _v%%	v%BBB	vNNNf	k%IB	1W5	
								3 V UGS _v%W	%l16f	NfIDB	5%IW	1kTf	
								LV UGS _v%6	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _v%W	B%6LDD	NDDkkf	f T%	L	D	DDD%	DDD%	3 V UGS _v%D	6T6kD	NP%kB	16Tk	1Wk	
								3 V UGS _v%6	v%l16D	vNB1f	56T%	1WB	
								LV UGS _v%W	vDWF%	vDDI56	NDI6	11TN	
3 V UGS _v%5	B%6LDD	NDNfD56	f T6	L	D	DDD%	DDD%	3 V UGS _v%l	DWFD	DDI5N	NDIB	11Tf	
								LV UGS _v%5	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v%l	B%6LDD	NDNfDWB	f T6	L	D	DDD%	DDD%	3 V UGS _v%f	N5661	DIBNW	BNIf	15TW	
								3 V UGS _v%5	vDWFD	vDfNN5	NDP%	15Tf	
								3 V UGS _v6D	vDWFD	vDfNNk	NDP%	15TB	
								LV UGS _v%l	vDWF%	vDDI56	NDP%	11TN	
3 V UGS _v6D	B%6LDD	NDNfD56	f T6	L	D	DDD%	DDD%	3 V UGS _v%l	DWFD	DDI5N	NDIB	11Tf	
								LV UGS _v6D	vDWF%	vDDI56	NDP%	11TN	
* POR	NB5TDDD	NDDDDD	DID	vf6T5W8	v5T6%f	L	L	51_N	vf6T5W8	v5T6%f	NN%ID	16TD	
3 P_~B	NB5LDD	NDDBD%	f T%	L	D	L	L	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DID	DID	

* Rndicates a Moltage regulated bus (Moltage controlled or swing ty4e - achine connected to it)

Rndicates a bus with a load - is- atch o8- ore than DfN3 V.

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
5N-06	1 BCDDD	0DDD1 f	f TD	E	D	E	E	3 V U1 S _%G	%WD51	%fTDG5	0D5TN	NBTN	
								5N_0U	WD51	f TDG5	0D5TN	NBTN	
5N-f6	1 BCDDD	0DDD1 f	f TD	E	D	E	E	JU%/0	%W5Df	%fTD1 I	00ND	NGIB	
								5N_0U	W5Df	f TD1 I	00ND	NGIB	
5N-I6	1 BCDDD	0DDD1 f	f TD	E	D	E	E	3 V U1 S _%I	%WkN5	%fT 5k	0f DIB	NBIB	
								5N_0U	WkN5	f T 5k	0f DIB	NBIB	
5N-B6	1 BCDDD	0DDD1 f	f TD	E	D	E	E	3 V U1 S _%BD	%WDWW	%fTDD	00WD	55T5	
								5N_0U	WDWW	I TfDD	00WD	55T5	
5N_06	01 5TDDD	NGIDDf	DID	E	D	E	E	POv	fG5kI	5TGBI	0f DID	NGID	
								HV U1 S 3 P_	%G5kI	%fTGBI	0f DID	NGID	
5N_0U	1 BCDDD	0DDD1 f	f TD	E	D	E	E	5N-B6	%WDWW	%fTDD	00WD	55T5	
								5N-I6	%WkN5	%fT 5k	0f DIB	NBIB	
								5N-f6	%W5Df	%fTD1 I	00ND	NGIB	
								5N-06	%WD51	%fTDG5	0D5TN	NBTN	
								3 P_~I	fGNBN	NkkN	BWTB	NTW	
								& HV U1 S 3 P_					
HV U1 S 3 P_	01 5TDDD	NGIDDf	DID	E	D	DDB5	DD1 I	5N_06	fG5kI	5TGBI	0f DID	NGID	
								5N_0U	%GNf0	%fTWkW	0f DIB	NBT5	%TkGD
								& 3 P_~I					
JU%/0	1 BCDDD	0DDfkI	f Tf	E	D	E	E	3 V U1 S _%0k	%BII f	%0Df k	kBIk	NW5	
								3 V U1 S _%f	%fTEkk	%DfGNW	BfTG	NkTf	
								5N-f6	W5DN	0Tkf I	00kTf	NWN	
JU%B/0	1 BCDDD	0DD5kG	f TG	E	D	E	E	3 V U1 S _%B0	%DWFD	%DD00	0DIB	NSTB	
								3 V U1 S _%Bf	%fTEkk	%DfCkD	BfTf	NkTG	
								3 V U1 S _%BI	%DWFD	%DD0D	0DIB	NSTG	
								3 V U1 S _%BB	I Tk0W	DkN0	WTD	NkT5	
LV U1 S _%D0	DWND	0DDN50	I TD	DWFG	DIDN	E	E	3 V U1 S _%D0	DWFG	DIDN	GfI TG	NSTN	
LV U1 S _%Df	DWND	0DDNGf	I TD	DWFG	DIDN	E	E	3 V U1 S _%Df	DWFG	DIDN	GfI Tk	NSTN	
LV U1 S _%DI	DWND	0DDNDB	I TD	DWFG	DIDN	E	E	3 V U1 S _%DI	DWFG	DIDN	GfI TN	NSTN	
LV U1 S _%DB	DWND	0DD5kD	I TD	DWFG	DIDN	E	E	3 V U1 S _%DB	DWFG	DIDN	GfBID	NSTN	
LV U1 S _%DG	DWND	0DD5fD	I TD	DWFG	DIDN	E	E	3 V U1 S _%DG	DWFG	DIDN	GfBIT	NSTN	
LV U1 S _%DW	DWND	0DDkN5	I TD	DWFG	DIDN	E	E	3 V U1 S _%DW	DWFG	DIDN	GfBIG	NSTN	
LV U1 S _%Dk	DWND	0DDk5D	I TD	DWFG	DIDN	E	E	3 V U1 S _%Dk	DWFG	DIDN	GfBIW	NSTN	
LV U1 S _%D5	DWND	0DDk5D	I TD	DWFG	DIDN	E	E	3 V U1 S _%D5	DWFG	DIDN	GfBIW	NSTN	
LV U1 S _%DN	DWND	0DDkfD	I TD	DWFG	DIDN	E	E	3 V U1 S _%DN	DWFG	DIDN	GfBIN	NSTN	
LV U1 S _%0D	DWND	0DDW5W	I TD	DWFG	DIDN	E	E	3 V U1 S _%0D	DWFG	DIDN	GfGID	NSTN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
LV U1 S _%0I	DWND	0DD5BB	I TD	DWFG	DDN	E	E	3 V U1 S _%0I	DWFG	DDN	GFBIf	NSTN	
LV U1 S _%0B	DWND	0DD5fG	I TD	DWFG	DDN	E	E	3 V U1 S _%0B	DWFG	DDN	GFBIf	NSTN	
LV U1 S _%0G	DWND	0DDkfk	I TD	DWFG	DDN	E	E	3 V U1 S _%0G	DWFG	DDN	GFB5	NSTN	
LV U1 S _%0W	DWND	0DD5fD	I TD	DWFG	DDN	E	E	3 V U1 S _%0W	DWFG	DDN	GFBIB	NSTN	
LV U1 S _%0k	DWND	0DDWBI	I TD	DWFG	DDN	E	E	3 V U1 S _%0k	DWFG	DDN	GFGIf	NSTN	
LV U1 S _%D	DWND	0DDkGN	I TD	DWFG	DDN	E	E	3 V U1 S _%D	DWFG	DDN	GFBIk	NSTN	
LV U1 S _%0	DWND	0DDk0I	I TD	DWFG	DDN	E	E	3 V U1 S _%0	DWFG	DDN	GFBIN	NSTN	
LV U1 S _%f	DWND	0DDWkW	I TD	DWFG	DDN	E	E	3 V U1 S _%f	DWFG	DDN	GFGID	NSTN	
LV U1 S _%I	DWND	0DDWk5	I TD	DWFG	DDN	E	E	3 V U1 S _%I	DWFG	DDN	GFGID	NSTN	
LV U1 S _%B	DWND	0DDGBG	f TN	DWFG	DDN	E	E	3 V U1 S _%B	DWFG	DDN	GFG5	NSTN	
LV U1 S _%G	DWND	0DDGI G	f TN	DWFG	DDN	E	E	3 V U1 S _%G	DWFG	DDN	GFG5	NSTN	
LV U1 S _%W	DWND	0DDkND	I TD	DWFG	DDN	E	E	3 V U1 S _%W	DWFG	DDN	GFBIG	NSTN	
LV U1 S _%k	DWND	0DDkWk	I TD	DWFG	DDN	E	E	3 V U1 S _%k	DWFG	DDN	GFBIW	NSTN	
LV U1 S _%5	DWND	0DDkfI	I TD	DWFG	DDN	E	E	3 V U1 S _%5	DWFG	DDN	GFBIN	NSTN	
LV U1 S _%N	DWND	0DDkI D	I TD	DWFG	DDN	E	E	3 V U1 S _%N	DWFG	DDN	GFB5	NSTN	
LV U1 S _%0	DWND	0DDN05	I TD	DWFG	DDN	E	E	3 V U1 S _%0	DWFG	DDN	GF1T5	NSTN	
LV U1 S _%f	DWND	0DD5C0	I TD	DWFG	DDN	E	E	3 V U1 S _%f	DWFG	DDN	GFBIf	NSTN	
LV U1 S _%I	DWND	0DD50W	I TD	DWFG	DDN	E	E	3 V U1 S _%I	DWFG	DDN	GFBIB	NSTN	
LV U1 S _%B	DWND	0DD5GN	I TD	DWFG	DDN	E	E	3 V U1 S _%B	DWFG	DDN	GFBID	NSTN	
LV U1 S _%W	DWND	0DDNBG	I TD	DWFG	DDN	E	E	3 V U1 S _%W	DWFG	DDN	GF1Tk	NSTN	
LV U1 S _%k	DWND	0DDNW0	I TD	DWFG	DDN	E	E	3 V U1 S _%k	DWFG	DDN	GF1TW	NSTN	
LV U1 S _%N	DWND	0DDNI I	I TD	DWFG	DDN	E	E	3 V U1 S _%N	DWFG	DDN	GF1T5	NSTN	
LV U1 S _%BD	DWND	0DDNN0	I TD	DWFG	DDN	E	E	3 V U1 S _%BD	DWFG	DDN	GF1TG	NSTN	
LV U1 S _%B0	DWND	0DDTf05	I Tf	DWFG	DDN	E	E	3 V U1 S _%B0	DWFG	DDN	GffTI	NSTN	
LV U1 S _%Bf	DWND	0DDTfD0	I Tf	DWFG	DDN	E	E	3 V U1 S _%Bf	DWFG	DDN	GffTB	NSTN	
LV U1 S _%BI	DWND	0DDTf05	I Tf	DWFG	DDN	E	E	3 V U1 S _%BI	DWFG	DDN	GffTI	NSTN	
LV U1 S _%BB	DWND	0DDTD1 k	I Tf	DWFG	DDN	E	E	3 V U1 S _%BB	DWFG	DDN	GffTk	NSTN	
LV U1 S _%BG	DWND	0DDTDNf	I Tf	DWFG	DDN	E	E	3 V U1 S _%BG	DWFG	DDN	GffTN	NSTN	
LV U1 S _%BW	DWND	0DDTDI B	I TD	DWFG	DDN	E	E	3 V U1 S _%BW	DWFG	DDN	GF1Tf	NSTN	
LV U1 S _%B5	DWND	0DDTBBW	I Tf	DWFG	DDN	E	E	3 V U1 S _%B5	DWFG	DDN	GF0TW	NSTN	
LV U1 S _%BN	DWND	0DDTfB	I Tf	DWFG	DDN	E	E	3 V U1 S _%BN	DWFG	DDN	GF0Tk	NSTN	
LV U1 S _%GD	DWND	0DDTBG	I Tf	DWFG	DDN	E	E	3 V U1 S _%GD	DWFG	DDN	GF0TW	NSTN	
3 V U1 S _%D0	IBTGLD	0DDWGG	f Tf	E	D	DDDB	DDDB	3 V U1 S _%Df	DWFD	DD50	0DB	NNTf	
								LV U1 S _%D0	%DWFB	%DD5G	0DIG	NND	
3 V U1 S _%Df	IBTGLD	0DDWfk	f Tf	E	D	DDDB	DDDB	3 V U1 S _%D0	%DWFD	%DDf5	0DIG	NkTN	
								3 V U1 S _%DI	0TBD	DfDN	fDN	NSTW	
								LV U1 S _%Df	%DWFB	%DD5G	0DIG	NND	
3 V U1 S _%DI	IBTGLD	0DDDk5	f Tf	E	D	DDDB	DDDB	3 V U1 S _%Df	%0TfIN	%DfBN	f0TD	NSTD	
								3 V U1 S _%DB	0T5GN	DfI0	I0TB	NSTG	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								LV U1 S _%I	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%B	1BGDD	0DDIGBB	f Tf	E	D	DDDB	DDDB	3 V U1 S _%I	%0T5G5	%DTkk	1 0TW	N5TD	
								3 V U1 S _%G	f TBk5	DBG5	B0TN	N5Tf	
								LV U1 S _%B	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%G	1BGDD	0DDBNB	f Tf	E	D	DDDB	DDDB	3 V U1 S _%B	%TBkk	%DD00	BfTD	NkTN	
								3 V U1 S _%5	I TDNk	DIGNf	GfTG	N5Tf	
								LV U1 S _%G	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%W	1BGDD	0DDBk0	f Tf	E	D	DDDB	DDDB	3 V U1 S _%k	DMWD	DD50	0DIB	NNf	
								LV U1 S _%W	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%k	1BGDD	0DDBGI	f Tf	E	D	DDDB	DDDB	3 V U1 S _%W	%DMWD	%DD00	0DIG	N5TB	
								3 V U1 S _%0W	%DMWD	%DDBW	0DIW	NkTf	
								3 V U1 S _%G	0T5GN	DI15	1 0TG	N5TB	
								LV U1 S _%k	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%5	1BGDD	0DDBGB	f Tf	E	D	DDDB	DDDB	3 V U1 S _%G	%TDNW	%DW5N	GfT5	NkTW	
								3 V U1 S _%N	I Tk0W	DkkD	WfTf	NkTN	
								LV U1 S _%5	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%N	1BGDD	0DDINB	f Tf	E	D	DDDB	DDDB	3 V U1 S _%5	%Tk0B	%D55N	WfTk	NkTf	
								3 V U1 S _%0D	BII1	DNkD	kBfD	NkTW	
								LV U1 S _%N	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0D	1BGDD	0DDIWD	f Tf	E	D	DDDB	DDDB	3 V U1 S _%N	%BII1 f	%TDW0	kBfB	NkTD	
								3 V U1 S _%G	BfNGf	0TDBf	5BfK	NkTB	
								LV U1 S _%0D	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0I	1BGDD	0DDID5	f Tf	E	D	DDDB	DDDB	3 V U1 S _%0B	DMWD	DD50	0DIB	NNf	
								LV U1 S _%0I	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0B	1BGDD	0DDBN5	f Tf	E	D	DDDB	DDDB	3 V U1 S _%0I	%DMWD	%DD0I	0DIG	N5TB	
								3 V U1 S _%0G	0TfBD	DDNG	fDfN	N5T5	
								LV U1 S _%0B	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0G	1BGDD	0DDBDD	f Tf	E	D	DDDB	DDDB	3 V U1 S _%0k	%0T5G5	%DB00	1 0Tk	NkTW	
								3 V U1 S _%0B	%0TI15	%DTkB	f 0TD	NkTW	
								3 V U1 S _%0k	I Tk0k	DkWk	WfTf	NkTN	
								LV U1 S _%0G	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0W	1BGDD	0DDBNI	f Tf	E	D	DDDB	DDDB	3 V U1 S _%0k	DMWD	DD50	0DIB	NNf	
								LV U1 S _%0W	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0k	1BGDD	0DDI0k	f Tf	E	D	DDDB	DDDB	JU%/0	BII1B	0TD0I	kBfT	NkTB	
								3 V U1 S _%0G	%Tk0B	%DNIf	WfTN	NkTD	
								LV U1 S _%0k	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%D	1BGDD	0DDBIf	f Tf	E	D	DDDB	DDDB	3 V U1 S _%0	DMWD	DD50	0DIB	NNf	
								LV U1 S _%D	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0	1BGDD	0DDI5W	f Tf	E	D	DDDB	DDDB	3 V U1 S _%D	%DMWD	%DDGW	0DIk	NkTD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								3 V U1 S _%f	0TI1 N	DfI5	f0TD	NSTf	
								LV U1 S _%0	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%f	1BTGDD	0DDfIBN	f Tf	D	D	DDDB	DDDB	JU%/0	f TBk5	DGD5	BfTf	NkTN	
								3 V U1 S _%0	%0TI1 N	%DfWS	f0TD	NkTk	
								3 V U1 S _%N	%DMWD	%DDkD	0DIk	NWG	
								LV U1 S _%f	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%I	1BTGDD	0DDfIC0	f Tf	D	D	DDDB	DDDB	5N-I 6	W5DN	0TkWG	00kTf	NW5	
								3 V U1 S _%5	%WD5N	%0TW5B	0DkTD	NWG	
								LV U1 S _%I	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%B	1BTGDD	0DDf05	f Tf	D	D	DDDB	DDDB	3 V U1 S _%G	DMWD	DD50	0DIB	NNf	
								LV U1 S _%B	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%G	1BTGDD	0DDfD5	f Tf	D	D	DDDB	DDDB	5N-06	WD5W	0T5fB	0DkTk	NGN	
								3 V U1 S _%D	%BNBW	%0TW0N	5WN	NGD	
								3 V U1 S _%B	%DMWD	%DDfB	0DIW	NSTD	
								LV U1 S _%G	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%W	1BTGDD	0DDBWB	f Tf	D	D	DDDB	DDDB	3 V U1 S _%k	DMWD	DD50	0DIB	NNf	
								LV U1 S _%W	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%k	1BTGDD	0DDBB0	f Tf	D	D	DDDB	DDDB	3 V U1 S _%W	%DMWD	%DD0N	0DIG	NSTf	
								3 V U1 S _%5	0TBD	DfDD	f DN	NSTk	
								LV U1 S _%k	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%5	1BTGDD	0DDfNk	f Tf	D	D	DDDB	DDDB	3 V U1 S _%I	WDN0	0TGI	0DWf	NkTD	
								3 V U1 S _%k	%0TI1 N	%DfI1W	f0TD	NSTf	
								3 V U1 S _%I	%BfI1f	%0T0W	kGID	NWf	
								LV U1 S _%5	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%N	1BTGDD	0DDBDB	f Tf	D	D	DDDB	DDDB	3 V U1 S _%f	DMWD	DD50	0DIB	NNf	
								LV U1 S _%N	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%0	1BTGDD	0DDGNf	f Tf	D	D	DDDB	DDDB	3 V U1 S _%f	DMWD	DD50	0DIB	NNf	
								LV U1 S _%0	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%f	1BTGDD	0DDGfB	f Tf	D	D	DDDB	DDDB	3 V U1 S _%0	%DM0N	%DDNf	0DI5	NGG	
								3 V U1 S _%I	0TI1 N	DfkI	f0TD	NkTk	
								LV U1 S _%f	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%I	1BTGDD	0DDBND	f Tf	D	D	DDDB	DDDB	3 V U1 S _%5	BfI1W	DfNkD	kBID	NkTW	
								3 V U1 S _%f	%0TI1 N	%DfID0	f0Tf	NkTf	
								3 V U1 S _%B	%fTBkk	%DG5k	BfTB	NkTI	
								LV U1 S _%I	%DMWB	%DD5G	0DIG	NND	
3 V U1 S _%B	1BTGDD	0DDGI I	f Tf	D	D	DDDB	DDDB	3 V U1 S _%I	f TBk5	DGBB	BfTf	NkTk	
								3 V U1 S _%W	%0TI1 N	%DfWD	f0TD	NkTN	
								3 V U1 S _%N	%DM0N	%DfDf	0DI5	NGD	
								LV U1 S _%B	%DMWB	%DD5G	0DIG	NND	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
3 V U1 S _%W	1 B GDD	0 DDWN	f T	D	D	DDDB	DDDB	3 V U1 S _%B	0 TBD	DDND	f DN	NS5	
								3 V U1 S _%k	%DWD	%DDDN	0 DG	NSTG	
								LV U1 S _%W	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%k	1 B GDD	0 DDWG	f T	D	D	DDDB	DDDB	3 V U1 S _%W	DWD	DD50	0 DB	NNT	
								LV U1 S _%k	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%N	1 B GDD	0 DDWDk	f T	D	D	DDDB	DDDB	3 V U1 S _%B	DWD	DD50	0 DB	NNT	
								LV U1 S _%N	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%BD	1 B GDD	0 DDWWG	f TB	D	D	DDDB	DDDB	5N+B6	WD55	0 TWkG	0 DWW	NWG	
								3 V U1 S _%BW	%GGW5	%0 TGNB	NWT	NWD	
								LV U1 S _%BD	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%B0	1 B GDD	0 DD5NI	f TG	D	D	DDDB	DDDB	JU%B/0	DWD	DD50	0 DB	NNT	
								LV U1 S _%B0	%DWB	%DD5G	0 DB	NND	
3 V U1 S _%Bf	1 B GDD	0 DD5kW	f TG	D	D	DDDB	DDDB	JU%B/0	f TBkk	DGWN	BfTT	NkTG	
								3 V U1 S _%BN	%0 T5Gk	%DB55	I 0 TN	NWk	
								LV U1 S _%Bf	%DWB	%DD5G	0 DB	NND	
3 V U1 S _%Bl	1 B GDD	0 DD5NI	f TG	D	D	DDDB	DDDB	JU%B/0	DWD	DD50	0 DB	NNT	
								LV U1 S _%Bl	%DWB	%DD5G	0 DB	NND	
3 V U1 S _%BB	1 B GDD	0 DD50f	f TG	D	D	DDDB	DDDB	JU%B/0	%Tk0B	%DN05	WTG	NkTD	
								3 V U1 S _%BG	BTI1B	DTNNN	kI T5	NkTB	
								LV U1 S _%BB	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%BG	1 B GDD	0 DDkWW	f TB	D	D	DDDB	DDDB	3 V U1 S _%BB	%BTI1	%0 Df0	kBT	NWS	
								3 V U1 S _%BW	BTNGf	0 TfDf	5BTW	NkTf	
								LV U1 S _%BG	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%BW	1 B GDD	0 DDkD5	f TB	D	D	DDDB	DDDB	3 V U1 S _%BD	GGkD	0 TBkf	NGTk	NWk	
								3 V U1 S _%BG	%BTNGD	%0 TND	5GTB	NWT	
								LV U1 S _%BW	%DWB	%DD5G	0 DG	NND	
3 V U1 S _%B5	1 B GDD	0 D0TDf0	f TG	D	D	DDDB	DDDB	3 V U1 S _%BN	DWD	DD50	0 DB	NNT	
								LV U1 S _%B5	%DWB	%DD5G	0 DB	NND	
3 V U1 S _%BN	1 B GDD	0 DDNNN	f TG	D	D	DDDB	DDDB	3 V U1 S _%Bf	0 T5GN	DI 0W	I 0 TT	NSTW	
								3 V U1 S _%B5	%DWD	%DD05	0 DG	NSTT	
								3 V U1 S _%GD	%DWD	%DD0k	0 DB	NSTT	
								LV U1 S _%BN	%DWB	%DD5G	0 DB	NND	
3 V U1 S _%GD	1 B GDD	0 D0TDf0	f TG	D	D	DDDB	DDDB	3 V U1 S _%BN	DWD	DD50	0 DB	NNT	
								LV U1 S _%GD	%DWB	%DD5G	0 DB	NND	
* POv	0I 5TDDD	NGIDDD	DID	%GT5kI	%5TGBW	D	D	5N_06	%GT5kI	%5TGBW	0f DID	NGID	
3 P_~I	0I T5LD	0 DDfI N	f TB	D	D	D	D	HV U1 S 3 P_ & 5N_0U	DDDD	DDDD	DID	DID	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DD 3 V6

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	70	3 m	3 Aar	. I 4	MPj	M_a4
51j N	BvT5LDD	NDDP%BW	%dN	L	D	L	L	3 V UGS _R%6	RWNF 1	%DDNB	NDST5	R\6TN	
								51_NU	WNF 1	R%DDNB	NDST5	R\6TN	
51j %	BvT5LDD	NDDP%BW	%dN	L	D	L	L	JUR%N	RWF15	%Bv6	N%DDN	R\vT5	
								51_NU	WF15	R%Bv6	N%DDN	R\vT5	
51j B.	BvT5LDD	NDDP%BW	%dN	L	D	L	L	3 V UGS _R%B	RWF16	%DD1B	NN5TF	R\6TW	
								51_NU	WF16	R%DD1B	NN5TF	R\6TW	
51j v.	BvT5LDD	NDDP%BW	%dN	L	D	L	L	3 V UGS _RvD	RWNW	D5ff	NDBII	R\1TD	
								51_NU	WNW	RD5ff	NDBII	R\1TD	
51_N	NBSTDDD	11T111	DID	L	D	L	L	PO7	%6T56W	RST5NW	NN3II	R\6TD	
								HV UGS 3 P_	R%6T56W	5T5NW	NN3II	R\6TD	
51_NU	BvT5LDD	NDDP%BW	%dN	L	D	L	L	51j v.	RWNW	D5ff	NDBII	R\1TD	
								51j B.	RWF16	%DD1B	NN5TF	R\6TW	
								51j %	RWF15	%Bv6	N%DDN	R\vT5	
								51j N	RWNF 1	%DDNB	NDST5	R\6TN	
								3 P_~B	%6TIBW	R"TB%5	v6DID	R\W%	
								& HV UGS 3 P_					
HV UGS 3 P_	NBSTDDD	11T111	DID	L	D	DID6B	DNvf	51_N	%6T56W	RST5NW	NN3II	R\6TD	
								51_NU	R%6TINO	5TBWI	NN3II	R\6T%	RNP%6D
								& 3 P_~B					
JUR%N	BvT5LDD	NDDP%WI	%2%	L	D	L	L	3 V UGS _RNf	RvTBBD	NT%B	ff"T5	R\%II	
								3 V UGS _R%%	R%vf6	NDBBB	vvT5	R\%B	
								51j %	W5D6	R%f66	N%%6	R\%f	
JURv/N	BvT5LDD	NDDW1B	%dW	L	D	L	L	3 V UGS _RvN	RDWWD	DP%W	NNW	R\DP%	
								3 V UGS _Rv%	R%vfW	NDWWD	vvII	R\NII	
								3 V UGS _RvB	RDWWD	DP%f	NNW	R\DP%	
								3 V UGS _Rvv	BTN6	RNW6v	WfT	R\NW	
LV UGS _RDN	DWD	11"1155	BT%	DWW6	RDBN%	L	L	3 V UGS _RDN	DWW6	RDBN%	65vT5	RS1T5	
LV UGS _RD%	DWD	11"1WB	BT%	DWW6	RDBN%	L	L	3 V UGS _RD%	DWW6	RDBN%	65vTf	RS1T5	
LV UGS _RDB	DWD	11"1%N	BT%	DWW6	RDBN%	L	L	3 V UGS _RDB	DWW6	RDBN%	65vII	RS1T5	
LV UGS _RDv	DWD	11"51W	BT%	DWW6	RDBN%	L	L	3 V UGS _RDv	DWW6	RDBN%	656TN	RS1T5	
LV UGS _RD6	DWD	11"565	BT%	DWW6	RDBN%	L	L	3 V UGS _RD6	DWW6	RDBN%	656"B	RS1T5	
LV UGS _RDW	DWD	11"5fB	BTN	DWW6	RDBN%	L	L	3 V UGS _RDW	DWW6	RDBN%	656T%	RS1T5	
LV UGS _RDf	DWD	11"565	BTN	DWW6	RDBN%	L	L	3 V UGS _RDf	DWW6	RDBN%	656"B	RS1T5	
LV UGS _RD5	DWD	11"5BW	BTN	DWW6	RDBN%	L	L	3 V UGS _RD5	DWW6	RDBN%	656Tv	RS1T5	
LV UGS _RDI	DWD	11"5Dv	BTN	DWW6	RDBN%	L	L	3 V UGS _RDI	DWW6	RDBN%	656TW	RS1T5	
LV UGS _RND	DWD	11"f51	BTN	DWW6	RDBN%	L	L	3 V UGS _RND	DWW6	RDBN%	656Tf	RS1T5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	70	3 m	3 Aar	. I 4	MPj	M_a4
LV UGS _RNB	DIWD	11Tl%D	BIN	DIW6	RDIBN%	E	E	3 V UGS _RNB	DIW6	RDIBN%	65vTl	RS1T5	
LV UGS _RNv	DIWD	11TlDB	BIN	DIW6	RDIBN%	E	E	3 V UGS _RNv	DIW6	RDIBN%	656TD	RS1T5	
LV UGS _RN6	DIWD	11T5N5	BIN	DIW6	RDIBN%	E	E	3 V UGS _RN6	DIW6	RDIBN%	656T6	RS1T5	
LV UGS _RNW	DIWD	11T51%	BIN	DIW6	RDIBN%	E	E	3 V UGS _RNW	DIW6	RDIBN%	656TN	RS1T5	
LV UGS _RNf	DIWD	11Tf%	BIN	DIW6	RDIBN%	E	E	3 V UGS _RNf	DIW6	RDIBN%	656T5	RS1T5	
LV UGS _R%D	DIWD	11T55B	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%D	DIW6	RDIBN%	656TN	RS1T5	
LV UGS _R%N	DIWD	11T5vB	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%N	DIW6	RDIBN%	656Tv	RS1T5	
LV UGS _R%%	DIWD	11T5NN	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%%	DIW6	RDIBN%	656T6	RS1T5	
LV UGS _R%B	DIWD	11TfW	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%B	DIW6	RDIBN%	656Tf	RS1T5	
LV UGS _R%v	DIWD	11Tv5	BID	DIW6	RDIBN%	E	E	3 V UGS _R%v	DIW6	RDIBN%	656Tl	RS1T5	
LV UGS _R%6	DIWD	11TvD	BID	DIW6	RDIBN%	E	E	3 V UGS _R%6	DIW6	RDIBN%	65WD	RS1T5	
LV UGS _R%W	DIWD	11T5v6	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%W	DIW6	RDIBN%	656TB	RS1T5	
LV UGS _R%f	DIWD	11T5%6	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%f	DIW6	RDIBN%	656T6	RS1T5	
LV UGS _R%5	DIWD	11Tf5W	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%5	DIW6	RDIBN%	656Tf	RS1T5	
LV UGS _R%4	DIWD	11T565	BIN	DIW6	RDIBN%	E	E	3 V UGS _R%4	DIW6	RDIBN%	656TB	RS1T5	
LV UGS _RBN	DIWD	11TlN6	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBN	DIW6	RDIBN%	65vTl	RS1T5	
LV UGS _RB%	DIWD	11T56W	BI%	DIW6	RDIBN%	E	E	3 V UGS _RB%	DIW6	RDIBN%	656TB	RS1T5	
LV UGS _RBB	DIWD	11T5%W	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBB	DIW6	RDIBN%	656T6	RS1T5	
LV UGS _RBv	DIWD	11T565	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBv	DIW6	RDIBN%	656TB	RS1T5	
LV UGS _RBW	DIWD	11TlBB	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBW	DIW6	RDIBN%	65vT5	RS1T5	
LV UGS _RBf	DIWD	11Tlv5	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBf	DIW6	RDIBN%	65vTf	RS1T5	
LV UGS _RBl	DIWD	11Tl%B	BI%	DIW6	RDIBN%	E	E	3 V UGS _RBl	DIW6	RDIBN%	65vTl	RS1T5	
LV UGS _RvD	DIWD	11T51B	BIB	DIW6	RDIBN%	E	E	3 V UGS _RvD	DIW6	RDIBN%	656TN	RS1T5	
LV UGS _RvN	DIWD	11Tl1v	BIv	DIW6	RDIBN%	E	E	3 V UGS _RvN	DIW6	RDIBN%	65vT6	RS1T5	
LV UGS _Rv%	DIWD	11Tlf1	BIv	DIW6	RDIBN%	E	E	3 V UGS _Rv%	DIW6	RDIBN%	65vTW	RS1T5	
LV UGS _RvB	DIWD	11Tl1v	BIv	DIW6	RDIBN%	E	E	3 V UGS _RvB	DIW6	RDIBN%	65vT6	RS1T5	
LV UGS _Rvv	DIWD	11Tlvv	BIv	DIW6	RDIBN%	E	E	3 V UGS _Rvv	DIW6	RDIBN%	65vT5	RS1T5	
LV UGS _Rv6	DIWD	11Tl%6	BIB	DIW6	RDIBN%	E	E	3 V UGS _Rv6	DIW6	RDIBN%	65vTl	RS1T5	
LV UGS _RvW	DIWD	11TlDf	BIB	DIW6	RDIBN%	E	E	3 V UGS _RvW	DIW6	RDIBN%	656TD	RS1T5	
LV UGS _Rv5	DIWD	NDDIDI%	BI5	DIW6	RDIBN%	E	E	3 V UGS _Rv5	DIW6	RDIBN%	65BTl	RS1T5	
LV UGS _Rv1	DIWD	NDDIDfB	BI5	DIW6	RDIBN%	E	E	3 V UGS _Rv1	DIW6	RDIBN%	65vTD	RS1T5	
LV UGS _R6D	DIWD	NDDIDIN	BI5	DIW6	RDIBN%	E	E	3 V UGS _R6D	DIW6	RDIBN%	65BTl	RS1T5	
3 V UGS _RDN	BvT5LD	NDD65D%	%6v	E	D	DIDDv	DIDDv	3 V UGS _RD%	DIWD	RDIB%W	NNTf	RS5T5	
								LV UGS _RDN	RDIWv	DIB%%	NNTf	RS5Tl	
3 V UGS _RD%	BvT5LD	NDDWff	%6v	E	D	DIDDv	DIDDv	3 V UGS _RDN	RDIWKl	DPf1	NNIB	RtNI%	
								3 V UGS _RDB	NP%Bl	RDIWD6	%BID	RS1Tl	
								LV UGS _RD%	RDIWv	DIB%%	NNTf	RS5Tl	
3 V UGS _RDB	BvT5LD	NDDWB6	%6v	E	D	DIDDv	DIDDv	3 V UGS _RD%	RNP%B5	DT5W6	%%Tf	RtNID	
								3 V UGS _RDv	N5665	RDT51N	BvTB	RtDI%	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	70	3 m	3 Aar	. I 4	MPj	M_a4
								LV UGS _RDB	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _RDv	BvT6LD	NDDWND	%dv	L	D	DDDv	DDDv	3 V UGS _RDB	RN56f	D5vv	BvTD	RlNlD	
								3 V UGS _RD6	%dvff	RNNfD	v6'If	RlDlv	
								LV UGS _RDv	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _RD6	BvT6LD	NDDBf'%	%dv	L	D	DDDv	DDDv	3 V UGS _RDv	R%dvfW	NNN5	v6'fB	RlNlN	
								3 V UGS _RD5	BfDl6	RNfvv	6WIl	RlDlW	
								LV UGS _RD6	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RDW	BvT6LD	NDDB55	%dv	L	D	DDDv	DDDv	3 V UGS _RDf	DfW4D	RDfB?AV	NNIf	R5'T6	
								LV UGS _RDW	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RDf	BvT6LD	NDDBf'%	%dB	L	D	DDDv	DDDv	3 V UGS _RDW	RDfW4D	DP4dW	NNI6	RlDP%	
								3 V UGS _RNW	RDfWNl	DP4WN	NNP%	Rl%P%	
								3 V UGS _RN6	N5661	RD5'5B	BvTB	RlDlB	
								LV UGS _RDf	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RD5	BvT6LD	NDDB6N	%dv	L	D	DDDv	DDDv	3 V UGS _RD6	RBfDlv	NBvf	6WIB	RlNIf	
								3 V UGS _RDl	BfTNv	RNWfB	WfTl	RlNP%	
								LV UGS _RD5	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RDl	BvT6LD	NDDBNl	%dB	L	D	DDDv	DDDv	3 V UGS _RD5	RBfTNN	N566v	WfTN	Rl%P%	
								3 V UGS _RND	vTBBN	RN55D	f'5'T5	RlNIf	
								LV UGS _RDl	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RND	BvT6LD	NDDBD6	%dB	L	D	DDDv	DDDv	3 V UGS _RDl	RvTBBD	NIf51	f'5'P%	Rl%dv	
								3 V UGS _R%6	vTlv1	R%dNN6	51'T5	Rl%dD	
								LV UGS _RND	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RNB	BvT6LD	NDDWBv	%dv	L	D	DDDv	DDDv	3 V UGS _RNv	DfW4D	RDfB?AV	NNIf	R5'T6	
								LV UGS _RNB	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _RNv	BvT6LD	NDDWNf	%dv	L	D	DDDv	DDDv	3 V UGS _RNB	RDfW4D	DP4dv	NNIv	RlDlv	
								3 V UGS _RN6	NP4Bl	RDfW4D	%BfN	R51'v	
								LV UGS _RNv	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _RN6	BvT6LD	NDDBB9%	%dB	L	D	DDDv	DDDv	3 V UGS _RDf	RN56f	D5ND	BB5'5	RlNIf	
								3 V UGS _RNv	RNP4B5	D6vD	%%6	RlNIf	
								3 V UGS _RNf	BfTN6	RNWfW	W5'TD	RlNP%	
								LV UGS _RN6	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _RNW	BvT6LD	NDDWDf	%dv	L	D	DDDv	DDDv	3 V UGS _RDf	DfW4D	RDfB?AV	NNIf	R5'T6	
								LV UGS _RNW	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _RNf	BvT6LD	NDDP%f	%dB	L	D	DDDv	DDDv	JURW%N	vTBBN	RN5Bf	f'5'T6	Rl%dN	
								3 V UGS _RN6	RBfTN%	N6NN	WWIl	Rl%dW	
								LV UGS _RNf	RDfWv	DfB%%	NNIf	R5'T5	
3 V UGS _R%D	BvT6LD	NDDBl5	%dB	L	D	DDDv	DDDv	3 V UGS _R%N	DfW4D	RDfB?AV	NNIf	R5'T6	
								LV UGS _R%D	RDfWv	DfB%%	NNIf	R5'Tl	
3 V UGS _R%N	BvT6LD	NDDB65	%dB	L	D	DDDv	DDDv	3 V UGS _R%D	RDfWNl	DP%N	NNIN	Rl%df	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	70	3 m	3 Aar	. I 4	MPj	M_a4
								3 V UGS _R%%	NPAB1	RDf5fW	%%f5	RtDIf	
								LV UGS _RAN	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _R%%	BvY5LDD	NDDfB%AW	%fB	D	D	DfDDv	DfDDv	JURAN	%fvff	RNTNND	v6'fB	RtNfB	
								3 V UGS _RAN	RNPABS	Df5vW	%%fW	RtNf5	
								3 V UGS _R%i	RDfWNl	DPABf	NNfN	RtBfv	
								LV UGS _R%%	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RAB	BvY5LDD	NDDPAi%	%fB	D	D	DfDDv	DfDDv	51j B	WS5DW	RAfNS	N%%B	Rt%II	
								3 V UGS _R%5	RWN5W	%fBS1	NNDIf	RtBfB	
								LV UGS _RAB	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RAv	BvY5LDD	NDDPAWB	%fP%	D	D	DfDDv	DfDDv	3 V UGS _R%6	DfWAD	RDfB%AW	NNIf	fS5'f5	
								LV UGS _RAv	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _R%6	BvY5LDD	NDDP%6W	%fP%	D	D	DfDDv	DfDDv	51j N	WN5B	RAfPv5	NDIf5	RtvfD	
								3 V UGS _RND	RvTIvB	NfWD	5WIl	RtvfI	
								3 V UGS _RAv	RDfWAD	DP%5B	NNIv	RtNfD	
								LV UGS _R%6	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RAAW	BvY5LDD	NDDfB61	%fv	D	D	DfDDv	DfDDv	3 V UGS _RAf	DfWAD	RDfB%AW	NNIf	fS5'f5	
								LV UGS _RAAW	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RAf	BvY5LDD	NDDfBBl	%fB	D	D	DfDDv	DfDDv	3 V UGS _RAAV	RDfWNl	DP%55	NNIv	RtDIf	
								3 V UGS _R%5	NPABl	RDfWNv	%BfN	fS1fW	
								LV UGS _RAf	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _R%5	BvY5LDD	NDDfBfDN	%fB	D	D	DfDDv	DfDDv	3 V UGS _RAB	WN55	RAf5Bl	NNNfW	Rt%f5	
								3 V UGS _RAf	RNPABl	Df5f5	%%f5	RtDfW	
								3 V UGS _RBB	RvTBBD	NfWB6	ff'P%	RtBf5	
								LV UGS _R%5	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RAi	BvY5LDD	NDDfBf'B	%fB	D	D	DfDDv	DfDDv	3 V UGS _R%%	DfWAD	RDfB%AW	NNIf	fS5'f5	
								LV UGS _RAi	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RBN	BvY5LDD	NDDfvBD	%fv	D	D	DfDDv	DfDDv	3 V UGS _RB%	DfWAD	RDfB%AW	NNIf	fS5'f5	
								LV UGS _RBN	RDfWv	DfB%%	NNIf	fS5'Il	
3 V UGS _RB%	BvY5LDD	NDDfBf'N	%fv	D	D	DfDDv	DfDDv	3 V UGS _RBN	RDfWNl	DP%N5	NDIl	RtvfV	
								3 V UGS _RBB	NPABl	RDf5vN	%%f5	RtNfW	
								LV UGS _RB%	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RBB	BvY5LDD	NDDfBvN	%fv	D	D	DfDDv	DfDDv	3 V UGS _R%5	vTBBv	RNf55N	f5'f5	RtNIf	
								3 V UGS _RB%	RNPABS	Df5Nv	%%fv	Rt%fv	
								3 V UGS _RBv	RAvfW	NDv%	vvf5	Rt%P%	
								LV UGS _RBB	RDfWv	DfB%%	NNIf	fS5'f5	
3 V UGS _RBv	BvY5LDD	NDDfBf'B	%fv	D	D	DfDDv	DfDDv	3 V UGS _RBB	%fvff	RNfD56	v6'fN	RtNfW	
								3 V UGS _RBW	RNPABS	Df56v	%%fW	RtNfB	
								3 V UGS _RBl	RDfWNl	DP%D6	NDIl	RtvfI	
								LV UGS _RBv	RDfWv	DfB%%	NNIf	fS5'f5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	70	3 m	3 Aar	. I 4	MPj	M_a4
3 V UGS _RBW	BvT5LDD	NDDWvf	%dv	L	D	DDDv	DDDv	3 V UGS _RBv	NP%B1	RDWWv	%BIN	I51"B	
								3 V UGS _RBf	RDWWD	DP%15	NNI6	RtLDN	
								LV UGS _RBW	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RBf	BvT5LDD	NDDWW%	%65	L	D	DDDv	DDDv	3 V UGS _RBW	DWWD	RDIB%W	NNIf	I55"I6	
								LV UGS _RBf	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RB1	BvT5LDD	NDDWBf	%dv	L	D	DDDv	DDDv	3 V UGS _RBv	DWWD	RDIB%W	NNIf	I55"I6	
								LV UGS _RB1	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RvD	BvT5LDD	NDDWDf	%65	L	D	DDDv	DDDv	51j v.	WIN56	R%dvD%	NNDIW	RtBP%	
								3 V UGS _RvW	R6T6W6	%DDff	11"ID	RtBIf	
								LV UGS _RvD	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RvN	BvT5LDD	NDD6LD5	%dW	L	D	DDDv	DDDv	JURv/N	DWWD	RDIB%W	NNIf	I55"I6	
								LV UGS _RvN	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _Rv%	BvT5LDD	NDDW1B	%dW	L	D	DDDv	DDDv	JURv/N	%6vfW	RNDIWN	vvIl	RtNII	
								3 V UGS _Rv1	RN56W	DIfB6	BBP%	RtBID	
								LV UGS _Rv%	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RvB	BvT5LDD	NDD6LD5	%dW	L	D	DDDv	DDDv	JURv/N	DWWD	RDIB%W	NNIf	I55"I6	
								LV UGS _RvB	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _Rvv	BvT5LDD	NDDW65	%dW	L	D	DDDv	DDDv	JURv/N	RBIfN%	NI6%5	WWIl	Rt%65	
								3 V UGS _Rv6	vTBB%	RN56v	f5T6	RtNII	
								LV UGS _Rvv	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _Rv6	BvT5LDD	NDDWBl	%dW	L	D	DDDv	DDDv	3 V UGS _Rvv	RvTBBD	NIfBB	ffTIf	Rt%65	
								3 V UGS _RvW	vTI6D	R%D61	51"B	Rt%dB	
								LV UGS _Rv6	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _RvW	BvT5LDD	NDDW%N	%65	L	D	DDDv	DDDv	3 V UGS _RvD	6T6Wf	R%dNIf	11"If	RtBID	
								3 V UGS _Rv6	RvTIv5	NI5fN	55"N	RtBI6	
								LV UGS _RvW	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _Rv5	BvT5LDD	NDDWD6	%df	L	D	DDDv	DDDv	3 V UGS _Rv1	DWWD	RDIB%W	NNIW	I55"I6	
								LV UGS _Rv5	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _Rv1	BvT5LDD	NDD65W	%df	L	D	DDDv	DDDv	3 V UGS _Rv%	NI561	RDIIDW	BvIv	I51"II	
								3 V UGS _Rv5	RDWWl	DP%51	NNIv	RtLDW	
								3 V UGS _R6D	RDWWl	DP%1D	NNIv	RtLD6	
								LV UGS _Rv1	RDWWv	DIB%%	NNIf	I55"II	
3 V UGS _R6D	BvT5LDD	NDDWD6	%df	L	D	DDDv	DDDv	3 V UGS _Rv1	DWWD	RDIB%W	NNIW	I55"I6	
								LV UGS _R6D	RDWWv	DIB%%	NNIf	I55"II	
* PO7	NB5TLDD	NDDDDD	DID	R%6T56W	5T6N%	L	L	51_N	R%6T56W	5T6N%	NNBII	Rt6TD	
3 P_~B	NB5LDD	NDDNDI	%dB	L	D	L	L	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DID	R%dB	

* 7ndicates a Aoltage regulated bus (Aoltage controlled or swing ty4e I achine connected to it)

7ndicates a bus with a load I isI atch o8I ore than DIN3 V.

Pro7ect:	F m OH m RF W	**ETAP**		Page:	N
Location:	Paulding, OH	NTIOIOC		Wate:	NGaGl v%GNF
Contract:				SF :	m ES_m OOWj
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		k eAision:	%lM p EF
I ilena- e:	F m 2OH			Con8igD	F or- al

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
5. I N0	j BDCGG	NGGDNj	%DN	C	G	C	C	3 V U6 S _v%l	vIDNf.	%0ZNl	NG5DT	v. 1DN	
								5. _NU	TDNf.	v%0ZNl	NG5DT	v. 1DN	
5. I %0	j BDCGG	NGGDNj	%DN	C	G	C	C	JUv%N	vIDD. 5	%jDBf	N%GDN	v. BD	
								5. _NU	TDD. 5	v%jDBf	N%GDN	v. BD	
5. I j 0	j BDCGG	NGGDNj	%DN	C	G	C	C	3 V U6 S _v%j	vIDD. 1	%0i 1	NN5D5	v. 1DT	
								5. _NU	TDD. 1	v%0i 1	NN5D5	v. 1DT	
5. I B0	j BDCGG	NGGDNj	%DN	C	G	C	C	3 V U6 S _vBG	vIDNTB	GD35G	NGBI0G	v. . I0G	
								5. _NU	TDNTB	vGD35G	NGBI0G	v. . I0G	
5. _N0	Nj 5I0CGG	NGBD. .	GI0G	C	G	C	C	POR	%lD51N	v5DIBN	NG5DD	v. 1I0G	
								HV U6 S 3 P_	v%lD51N	5DIBN	NG5DD	v. 1I0G	
5. _NU	j BDCGG	NGGDNj	%DN	C	G	C	C	5. I B0	vIDNTB	GD35G	NGBI0G	v. . I0G	
								5. I j 0	vIDD. 1	%0i 1	NN5D5	v. 1DT	
								5. I %0	vIDD. 5	%jDBf	N%GDN	v. BD	
								5. I N0	vIDNf.	%0ZNl	NG5DT	v. 1DN	
								3 P_~j	%lDj T	vfDjf	B1GDj	v. TD%	
								& HV U6 S 3 P_					
HV U6 S 3 P_	Nj 5I0CGG	NGBD. .	GI0G	C	G	GI0GI.	GDNT%	5. _N0	%lD51N	v5DIBN	NG5DD	v. 1I0G	
								5. _NU	v%lDNG	5Djf.	NG5DD	v. 1DN	jD51G
								& 3 P_~j					
JUv%N	j BDCGG	NGGD%GT	%D%	C	G	C	C	3 V U6 S _vNf	vBDjG	ND%B	ff5D	v. %D	
								3 V U6 S _v%%	v%BBf1	N0jj	BBD5	v. %j	
								5. I %0	TD5Gl	v%D1f	N%%DT	v. %D	
JUvB'N	j BDCGG	NGGBBj G	%DT	C	G	C	C	3 V U6 S _vBN	vGD%G	GD% T	NNDB	v. GD%	
								3 V U6 S _vB%	v%BBf T	N0iN	BBD	v. ND	
								3 V U6 S _vBj	vGD%G	GD% f	NNDB	v. GD%	
								3 V U6 S _vBB	jD5Nl	vNDT1B	Tf5D	v. NDB	
LV U6 S _vGN	GDF. G	. . D%l	j D%	GD%l	vGjDN%	C	C	3 V U6 S _vGN	GD%l	vGjDN%	15BD	v5. D	
LV U6 S _vG%	GDF. G	. . DGG	j D%	GD%l	vGjDN%	C	C	3 V U6 S _vG%	GD%l	vGjDN%	151I0G	v5. D	
LV U6 S _vGj	GDF. G	. . D515	j D%	GD%l	vGjDN%	C	C	3 V U6 S _vGj	GD%l	vGjDN%	151D	v5. D	
LV U6 S _vGB	GDF. G	. . D5j %	j D%	GD%l	vGjDN%	C	C	3 V U6 S _vGB	GD%l	vGjDN%	151DB	v5. D	
LV U6 S _vGl	GDF. G	. . DD. B	j D%	GD%l	vGjDN%	C	C	3 V U6 S _vGl	GD%l	vGjDN%	151DT	v5. D	
LV U6 S _vGT	GDF. G	. . D5NG	j DN	GD%l	vGjDN%	C	C	3 V U6 S _vGT	GD%l	vGjDN%	151DT	v5. D	
LV U6 S _vGf	GDF. G	. . DD. B	j DN	GD%l	vGjDN%	C	C	3 V U6 S _vGf	GD%l	vGjDN%	151DT	v5. D	
LV U6 S _vG5	GDF. G	. . DDfj	j DN	GD%l	vGjDN%	C	C	3 V U6 S _vG5	GD%l	vGjDN%	151D5	v5. D	
LV U6 S _vG	GDF. G	. . DDBG	j DN	GD%l	vGjDN%	C	C	3 V U6 S _vG	GD%l	vGjDN%	15TI0G	v5. D	
LV U6 S _vNG	GDF. G	. . DD%T	j DN	GD%l	vGjDN%	C	C	3 V U6 S _vNG	GD%l	vGjDN%	15TI0G	v5. D	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
LV U6 S _vNj	GDT. G	. . I51T	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _vNj	GDT%l	vGDpN%	151Dp	v5. D	
LV U6 S _vNB	GDT. G	. . I5j .	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _vNB	GDT%l	vGDpN%	151DB	v5. D	
LV U6 S _vNl	GDT. G	. . D51B	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _vNl	GDT%l	vGDpN%	151D	v5. D	
LV U6 S _vNT	GDT. G	. . I5%	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _vNT	GDT%l	vGDpN%	151DB	v5. D	
LV U6 S _vNf	GDT. G	. . DBG	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _vNf	GDT%l	vGDpN%	15TDN	v5. D	
LV U6 S _v%G	GDT. G	. . I5%G	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%G	GDT%l	vGDpN%	151D	v5. D	
LV U6 S _v%N	GDT. G	. . D5G	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%N	GDT%l	vGDpN%	151Df	v5. D	
LV U6 S _v%%	GDT. G	. . DBB5	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%%	GDT%l	vGDpN%	151D	v5. D	
LV U6 S _v%j	GDT. G	. . DNj	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%j	GDT%l	vGDpN%	15TDN	v5. D	
LV U6 S _v%B	GDT. G	. . D51	j I0i	GDT%l	vGDpN%	C	C	3 V U6 S _v%B	GDT%l	vGDpN%	15TDp	v5. D	
LV U6 S _v%l	GDT. G	. . DTf f	j I0i	GDT%l	vGDpN%	C	C	3 V U6 S _v%l	GDT%l	vGDpN%	15TDp	v5. D	
LV U6 S _v%T	GDT. G	. . D5N	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%T	GDT%l	vGDpN%	151Df	v5. D	
LV U6 S _v%f	GDT. G	. . DTN	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%f	GDT%l	vGDpN%	1515	v5. D	
LV U6 S _v%5	GDT. G	. . D%j	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%5	GDT%l	vGDpN%	15TDN	v5. D	
LV U6 S _v%	GDT. G	. . D. 1	j DN	GDT%l	vGDpN%	C	C	3 V U6 S _v%	GDT%l	vGDpN%	151DT	v5. D	
LV U6 S _vj N	GDT. G	. . I51%	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj N	GDT%l	vGDpN%	151Dp	v5. D	
LV U6 S _vj %	GDT. G	. . D. j	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj %	GDT%l	vGDpN%	151Df	v5. D	
LV U6 S _vj j	GDT. G	. . DTj	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj j	GDT%l	vGDpN%	1515	v5. D	
LV U6 S _vj B	GDT. G	. . D. 1	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj B	GDT%l	vGDpN%	151DT	v5. D	
LV U6 S _vj T	GDT. G	. . I5fG	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj T	GDT%l	vGDpN%	151D%	v5. D	
LV U6 S _vj f	GDT. G	. . I55B	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj f	GDT%l	vGDpN%	151DN	v5. D	
LV U6 S _vj .	GDT. G	. . I5TG	j D%	GDT%l	vGDpN%	C	C	3 V U6 S _vj .	GDT%l	vGDpN%	151Dp	v5. D	
LV U6 S _vBG	GDT. G	. . I5%	j Ip	GDT%l	vGDpN%	C	C	3 V U6 S _vBG	GDT%l	vGDpN%	151DB	v5. D	
LV U6 S _vBN	GDT. G	. . Dj N	j IB	GDT%l	vGDpN%	C	C	3 V U6 S _vBN	GDT%l	vGDpN%	15B5	v5. D	
LV U6 S _vB%	GDT. G	. . DNT	j IB	GDT%l	vGDpN%	C	C	3 V U6 S _vB%	GDT%l	vGDpN%	15BD	v5. D	
LV U6 S _vBj	GDT. G	. . Dj G	j IB	GDT%l	vGDpN%	C	C	3 V U6 S _vBj	GDT%l	vGDpN%	15B5	v5. D	
LV U6 S _vBB	GDT. G	. . I55N	j IB	GDT%l	vGDpN%	C	C	3 V U6 S _vBB	GDT%l	vGDpN%	151DN	v5. D	
LV U6 S _vBl	GDT. G	. . I5T%	j Ip	GDT%l	vGDpN%	C	C	3 V U6 S _vBl	GDT%l	vGDpN%	151D%	v5. D	
LV U6 S _vBT	GDT. G	. . I5Bj	j Ip	GDT%l	vGDpN%	C	C	3 V U6 S _vBT	GDT%l	vGDpN%	151DB	v5. D	
LV U6 S _vB5	GDT. G	NGGI0P%	j D	GDT%l	vGDpN%	C	C	3 V U6 S _vB5	GDT%l	vGDpN%	15BDp	v5. D	
LV U6 S _vB.	GDT. G	NGGI0IG	j D	GDT%l	vGDpN%	C	C	3 V U6 S _vB.	GDT%l	vGDpN%	15BDB	v5. D	
LV U6 S _vlG	GDT. G	NGGI0P%	j D	GDT%l	vGDpN%	C	C	3 V U6 S _vlG	GDT%l	vGDpN%	15BDp	v5. D	
3 V U6 S _vGN	jBDCGj	NGGIBj .	%lD	C	G	GI0CB	GI0CB	3 V U6 S _vC%	GDT%G	vGDp%T	NNDf	v55D	
								LV U6 S _vGN	vGDT%B	GDp%%	NNDf	v55D	
3 V U6 S _vC%	jBDCGj	NGGIBNl	%lB	C	G	GI0CB	GI0CB	3 V U6 S _vGN	vGDTN	GDpf.	NNDp	v. N5%	
								3 V U6 S _vGj	NDpj .	vGDTGl	%j I0i	v5. D	
								LV U6 S _vC%	vGDT%B	GDp%%	NNDf	v55D	
3 V U6 S _vGj	jBDCGj	NGGIDf%	%lB	C	G	GI0CB	GI0CB	3 V U6 S _vC%	vNDpj 5	GDTl	%lDf	v. N0i	
								3 V U6 S _vGB	N5l5	vGf5. N	jBDB	v. GD%	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
								LV U6 S _vGj	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vGB	j BDDCG	NGGDpBf	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vGj	vN51f	G5BBB	j BDGi	v. NDGi	
								3 V U6 S _vGl	%4Bff	vNDNfG	BlDD	v. GDB	
								LV U6 S _vGB	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vGl	j BDDCG	NGGDpG	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vGB	v%4BfT	NDNN5	BlDp	v. NDN	
								3 V U6 S _vG5	j DGi 1	vNBBBB	1fDGi	v. GDT	
								LV U6 S _vGl	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vGT	j BDDCG	NGGDp%l	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vGT	GDY%G	vGDp%T	NNDD	v55DD	
								LV U6 S _vGT	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vGT	j BDDCG	NGGDpG	%4p	C	G	GDGCB	GDGCB	3 V U6 S _vGT	vGDY%G	GD% T	NNDD	v. GD%	
								3 V U6 S _vNT	vGDN	GD%dN	NND%	v. %D%	
								3 V U6 S _vNl	N51.	vG55j	j BDp	v. GDp	
								LV U6 S _vGT	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vG5	j BDDCG	NGGD%55	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vGl	vj DGi B	NDpBf	1TDp	v. NDD	
								3 V U6 S _vG	j DDNB	vNDfj	T5DGi	v. ND%	
								LV U6 S _vG5	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vG	j BDDCG	NGGD%dT	%4p	C	G	GDGCB	GDGCB	3 V U6 S _vG5	vj DDNN	ND11	TfDD%	v. %D%	
								3 V U6 S _vNG	BDpj N	vN55N	f5D5	v. NDD	
								LV U6 S _vG	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNG	j BDDCG	NGGD%8%	%4p	C	G	GDGCB	GDGCB	3 V U6 S _vG	vBDpj G	ND. G	f5D%	v. %4B	
								3 V U6 S _v%l	BDB.	v%4DNT	5. D	v. ND	
								LV U6 S _vNG	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNj	j BDDCG	NGGDpfN	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vNB	GDY%G	vGDp%T	NNDD	v55DD	
								LV U6 S _vNj	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNB	j BDDCG	NGGDp1B	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vNj	vGDY%G	GD% B	NNDB	v. GDB	
								3 V U6 S _vNl	NDj.	vGDY%G	%jDN	v5. DB	
								LV U6 S _vNB	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNl	j BDDCG	NGGD%fG	%4p	C	G	GDGCB	GDGCB	3 V U6 S _vGT	vN51f	G5NG	j j 5D	v. NDD	
								3 V U6 S _vNB	vNDj 5	GDBG	%4D	v. NDD	
								3 V U6 S _vNT	j DDNl	vNDfT	T5DGi	v. ND%	
								LV U6 S _vNl	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNT	j BDDCG	NGGDpBB	%4B	C	G	GDGCB	GDGCB	3 V U6 S _vGT	GDY%G	vGDp%T	NNDD	v55DD	
								LV U6 S _vNT	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _vNT	j BDDCG	NGGD%%B	%4p	C	G	GDGCB	GDGCB	JUv%N	BDpj N	vN5j f	f5DT	v. %4N	
								3 V U6 S _vNl	vj DDN%	NDN%	TTD	v. %4T	
								LV U6 S _vNT	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _v%G	j BDDCG	NGGDpj 1	%4p	C	G	GDGCB	GDGCB	3 V U6 S _v%N	GDY%G	vGDp%T	NNDD	v55DD	
								LV U6 S _v%G	vGDY%B	GDp%%	NNDD	v555D	
3 V U6 S _v%N	j BDDCG	NGGD%1	%4p	C	G	GDGCB	GDGCB	3 V U6 S _v%G	vGDN	GD%dN	NNDN	v. %4D	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
								3 V U6 S _v%%	NDj .	vGDf f	%&5	v. GD	
								LV U6 S _v%N	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%%	j BDCGG	NGGD4j	%j	C	G	GDCB	GDCB	JUv%N	%&Bf f	vNDNG	Bl Dj	v. Nj	
								3 V U6 S _v%N	vNDj 5	GDBf	%&T	v. ND	
								3 V U6 S _v%	vGDN	GDj 5	NNDN	v. j DB	
								LV U6 S _v%%	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%j	j BDCGG	NGGD%	%j	C	G	GDCB	GDCB	5. I j 0	TD5GT	v%&NT	N%&j	v. %D	
								3 V U6 S _v%5	vTD55T	%j. N	NNGD	v. j Dj	
								LV U6 S _v%j	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%B	j BDCGG	NGGD%GG	%D%	C	G	GDCB	GDCB	3 V U6 S _v%d	GDf%G	vGDj%T	NND	v55D	
								LV U6 S _v%B	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%d	j BDCGG	NGGDN j	%D%	C	G	GDCB	GDCB	5. I N0	TD55j	v%DdG	NG D	v. BG	
								3 V U6 S _vNG	vBDBj	NDTBN	5f G	v. BD	
								3 V U6 S _v%B	vGDf%G	GD5j	NNB	v. NG	
								LV U6 S _v%d	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%T	j BDCGG	NGGD% T	%B	C	G	GDCB	GDCB	3 V U6 S _v%f	GDf%G	vGDj%T	NND	v55D	
								LV U6 S _v%T	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%f	j BDCGG	NGGD%f f	%B	C	G	GDCB	GDCB	3 V U6 S _v%T	vGDN	GD5 5	NNB	v. GD	
								3 V U6 S _v%5	NDj .	vGDNB	%j DN	v5. D	
								LV U6 S _v%f	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%5	j BDCGG	NGGDj 5	%j	C	G	GDCB	GDCB	3 V U6 S _v%j	TD55	v%DBG	NNND	v. %D	
								3 V U6 S _v%f	vNDj .	GDf 5	%&5	v. GD	
								3 V U6 S _vj j	vBDj G	NDj T	f f j	v. j D	
								LV U6 S _v%5	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _v%	j BDCGG	NGGDjNG	%j	C	G	GDCB	GDCB	3 V U6 S _v%%	GDf%G	vGDj%T	NND	v55D	
								LV U6 S _v%	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _vj N	j BDCGG	NGGDjTf	%B	C	G	GDCB	GDCB	3 V U6 S _vj %	GDf%G	vGDj%T	NND	v55D	
								LV U6 S _vj N	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _vj %	j BDCGG	NGGDjG5	%B	C	G	GDCB	GDCB	3 V U6 S _vj N	vGDN	GDNT	NGD	v. BB	
								3 V U6 S _vj j	NDj .	vGDBN	%&T	v. ND	
								LV U6 S _vj %	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _vj j	j BDCGG	NGGD%f 5	%B	C	G	GDCB	GDCB	3 V U6 S _v%5	BDj B	vN55N	f 5	v. ND	
								3 V U6 S _vj %	vNDj 5	GDNB	%&B	v. %B	
								3 V U6 S _vj B	v%&Bf T	NGBB%	BB5	v. %D%	
								LV U6 S _vj j	vGDf%B	GDj%%	NND	v5515	
3 V U6 S _vj B	j BDCGG	NGGDjNG	%B	C	G	GDCB	GDCB	3 V U6 S _vj j	%&Bf f	vNG5 1	Bl DN	v. ND	
								3 V U6 S _vj T	vNDj 5	GD1B	%&T	v. Nj	
								3 V U6 S _vj .	vGDN	GDf%Gl	NGD	v. BD	
								LV U6 S _vj B	vGDf%B	GDj%%	NND	v5515	

Pro7ect:	F m OH m RF W	**ETAP**		Page:	1
Location:	Paulding, OH	NTOOOC		Wate:	NGvGl v%GNF
Contract:				SF :	m ES_m OOWj
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		k eAision:	%lM p EF
I ilena- e:	F m 2OH			Con8igD	F or- al

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
3 V U6 S _vj T	j BDCG	NGGp5B	%0	C	G	GOCB	GOCB	3 V U6 S _vj B	N%j .	vGD%B	%j DN	v5. Ip	
								3 V U6 S _vj f	vGD%G	GP% 5	NND	v. GDN	
								LV U6 S _vj T	vGD%B	GDp%%	NNDf	v55I5	
3 V U6 S _vj f	j BDCG	NGGp. .	%0	C	G	GOCB	GOCB	3 V U6 S _vj T	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _vj f	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vj .	j BDCG	NGGpf 1	%0B	C	G	GOCB	GOCB	3 V U6 S _vj B	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _vj .	vGD%B	GDp%%	NNDf	v55I5	
3 V U6 S _vBG	j BDCG	NGGpBB	%0	C	G	GOCB	GOCB	5. I B0	TD551	v%DBGCB	NNGDf	v. j D%	
								3 V U6 S _vBT	v1DT1	%0f 5	. . DN	v. j Df	
								LV U6 S _vBG	vGD%B	GDp%%	NNDf	v55I5	
3 V U6 S _vBN	j BDCG	NGGDBBl	%0T	C	G	GOCB	GOCB	JUvB/N	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _vBN	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vB%	j BDCG	NGGDBj G	%0T	C	G	GOCB	GOCB	JUvB/N	%DBf T	vN0i1N	BBD	v. ND	
								3 V U6 S _vB.	vN551T	GBDj T	j j Dj	v. j I0G	
								LV U6 S _vB%	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vBj	j BDCG	NGGDBBl	%0T	C	G	GOCB	GOCB	JUvB/N	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _vBj	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vBB	j BDCG	NGGDp. 1	%0T	C	G	GOCB	GOCB	JUvB/N	vj Df N%	ND%	TTD	v. %0	
								3 V U6 S _vBl	BDpj %	vN551 1	f 5DT	v. ND	
								LV U6 S _vBB	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vBl	j BDCG	NGGpf T	%0T	C	G	GOCB	GOCB	3 V U6 S _vBB	vBDpj G	NDj B	f f I5	v. %05	
								3 V U6 S _vBT	BD1G	v%0i1 .	5. IB	v. %4p	
								LV U6 S _vBl	vGD%B	GDp%%	NNDf	v55I5	
3 V U6 S _vBT	j BDCG	NGGp15	%0	C	G	GOCB	GOCB	3 V U6 S _vBG	1DTf	v%0N 5	. . I5	v. j I0G	
								3 V U6 S _vBl	vBDBB5	N5f %	55D%	v. j D	
								LV U6 S _vBT	vGD%B	GDp%%	NNDf	v55I5	
3 V U6 S _vB5	j BDCG	NGGDBB%	%0	C	G	GOCB	GOCB	3 V U6 S _vB.	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _vB5	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _vB.	j BDCG	NGGD%j	%0	C	G	GOCB	GOCB	3 V U6 S _vB%	N551.	vGDGT	j BDB	v5. D	
								3 V U6 S _vB5	vGDN	GP%5.	NNDB	v. GDT	
								3 V U6 S _v1G	vGDN	GP% N	NNDB	v. GD	
								LV U6 S _vB.	vGD%B	GDp%%	NNDf	v55D	
3 V U6 S _v1G	j BDCG	NGGDBB%	%0	C	G	GOCB	GOCB	3 V U6 S _vB.	GD%G	vGDp%T	NNDf	v55D	
								LV U6 S _v1G	vGD%B	GDp%%	NNDf	v55D	
* POR	Nj 5I0CG	NGlI0CG	GI0G	v%I5 1N	5Dj T	C	C	5. _N0	v%I5 1N	5Dj T	NG5D	v. 1I0G	
3 P_~j	Nj I5CG	NGGI0BT	%0	C	G	C	C	HV U6 S 3 P_	GOCG	GOCG	GI0G	GI0G	
								& 5. _NU					

* Rndicates a Aoltage regulated bus (Aoltage controlled or swing ty4e - achine connected to it)

Rndicates a bus with a load - is- atch o8 - ore than GDN3 V0

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
34YFp	52.CD0	44.364	2.R	0	0	0	0	8 V B1 S I -7G	-F5.522	-0.RR0	772.0	44.3	
								34I FB	F5.522	0.RR0	772.0	44.3	
34Y7p	52.CD0	44.364	2.R	0	0	0	0	JB-7/F	-F2.63F	-0.R76	726.5	44.4	
								34I FB	F2.63F	0.R76	726.5	44.4	
34Y5p	52.CD0	44.364	2.R	0	0	0	0	8 V B1 S I -75	-F2.66R	-0.4CF	726.5	44.3	
								34I FB	F2.66R	0.4CF	726.5	44.3	
34Y2p	52.CD0	44.364	2.R	0	0	0	0	8 V B1 S I -20	-F5.7R6	-F.37G	772.6	44.F	
								34I FB	F5.7R6	F.37G	772.6	44.F	
34I Fp	F53.000	F00.00F	0.0	0	0	0	0	PON	CG307	-0.270	755.G	F00.0	
								HV B1 S 8 PI	-CG307	0.270	755.G	F00.0	
34I FB	52.CD0	44.364	2.R	0	0	0	0	34Y2p	-F5.7R6	-F.37G	772.6	44.F	
								34Y5p	-F2.66R	-0.4CF	726.5	44.3	
								34Y7p	-F2.63F	-0.R76	726.5	44.4	
								34YFp	-F5.522	-0.RR0	772.0	44.3	
								8 PI ~5	CG463	2.7R7	420.6	44.R	
								& HV B1 S 8 PI					
HV B1 S 8 PI	F53.000	F00.00F	0.0	0	0	0.0C2	0.F2R	34I Fp	CG307	-0.270	755.G	F00.0	
								34I FB	-CG3C6	0.7R5	755.R	F00.0	0.67G
								& 8 PI ~5					
JB-7/F	52.CD0	F00.03R	2.3	0	0	0	0	8 V B1 S I -FR	-4.5G4	-0.7CG	FC6.G	F00.0	
								8 V B1 S I -77	-G5C5	-0.F05	34.G	F00.0	
								34Y7p	F2.RFF	0.5C3	726.F	F00.0	
JB-2/F	52.CD0	F0F.0F5	GG	0	0	0	0	8 V B1 S I -2F	-F.52F	0.0FF	77.7	F00.0	
								8 V B1 S I -27	-G5CG	-0.03F	33.R	F00.0	
								8 V B1 S I -25	-F.52F	0.0F7	77.7	F00.0	
								8 V B1 S I -22	3.056	0.0C3	F55.F	F00.0	
LV B1 S I -0F	0.640	F0F.0R7	6.R	F.5C0	0.000	0	0	8 V B1 S I -0F	F.5C0	0.000	FFFR.5	F00.0	
LV B1 S I -07	0.640	F0F.0F5	6.R	F.5C0	0.000	0	0	8 V B1 S I -07	F.5C0	0.000	FFF3.0	F00.0	
LV B1 S I -05	0.640	F00.4F7	6.R	F.5C0	0.000	0	0	8 V B1 S I -05	F.5C0	0.000	FFF4.F	F00.0	
LV B1 S I -02	0.640	F00.322	6.R	F.5C0	0.000	0	0	8 V B1 S I -02	F.5C0	0.000	FFF4.3	F00.0	
LV B1 S I -0G	0.640	F00.R22	6.R	F.5C0	0.000	0	0	8 V B1 S I -0G	F.5C0	0.000	FF7F.0	F00.0	
LV B1 S I -06	0.640	F00.R74	6.6	F.5C0	0.000	0	0	8 V B1 S I -06	F.5C0	0.000	FF7F.F	F00.0	
LV B1 S I -0R	0.640	F00.647	6.6	F.5C0	0.000	0	0	8 V B1 S I -0R	F.5C0	0.000	FF7F.G	F00.0	
LV B1 S I -03	0.640	F00.6R0	6.6	F.5C0	0.000	0	0	8 V B1 S I -03	F.5C0	0.000	FF7F.3	F00.0	
LV B1 S I -04	0.640	F00.C60	6.6	F.5C0	0.000	0	0	8 V B1 S I -04	F.5C0	0.000	FF75.0	F00.0	
LV B1 S I -F0	0.640	F00.CD0	6.G	F.5C0	0.000	0	0	8 V B1 S I -F0	F.5C0	0.000	FF75.R	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
LV B1 S I -F5	0.640	F00.350	6.6	F.5C0	0.000	0	0	8 V B1 S I -F5	F.5C0	0.000	FF70.0	F00.0	
LV B1 S I -F2	0.640	F00.R34	6.6	F.5C0	0.000	0	0	8 V B1 S I -F2	F.5C0	0.000	FF70.G	F00.0	
LV B1 S I -FG	0.640	F00.CB6	6.6	F.5C0	0.000	0	0	8 V B1 S I -FG	F.5C0	0.000	FF77.R	F00.0	
LV B1 S I -F6	0.640	F00.RRG	6.6	F.5C0	0.000	0	0	8 V B1 S I -F6	F.5C0	0.000	FF70.6	F00.0	
LV B1 S I -FR	0.640	F00.257	6.G	F.5C0	0.000	0	0	8 V B1 S I -FR	F.5C0	0.000	FF72.2	F00.0	
LV B1 S I -70	0.640	F00.63F	6.G	F.5C0	0.000	0	0	8 V B1 S I -70	F.5C0	0.000	FF7F.R	F00.0	
LV B1 S I -7F	0.640	F00.CBG	6.G	F.5C0	0.000	0	0	8 V B1 S I -7F	F.5C0	0.000	FF77.R	F00.0	
LV B1 S I -77	0.640	F00.CD4	6.G	F.5C0	0.000	0	0	8 V B1 S I -77	F.5C0	0.000	FF75.6	F00.0	
LV B1 S I -75	0.640	F00.2R2	6.G	F.5C0	0.000	0	0	8 V B1 S I -75	F.5C0	0.000	FF72.0	F00.0	
LV B1 S I -72	0.640	F00.7R6	6.2	F.5C0	0.000	0	0	8 V B1 S I -72	F.5C0	0.000	FF76.7	F00.0	
LV B1 S I -7G	0.640	F00.7CG	6.2	F.5C0	0.000	0	0	8 V B1 S I -7G	F.5C0	0.000	FF76.2	F00.0	
LV B1 S I -76	0.640	F00.632	6.6	F.5C0	0.000	0	0	8 V B1 S I -76	F.5C0	0.000	FF7F.6	F00.0	
LV B1 S I -7R	0.640	F00.65R	6.6	F.5C0	0.000	0	0	8 V B1 S I -7R	F.5C0	0.000	FF77.7	F00.0	
LV B1 S I -73	0.640	F00.C2G	6.6	F.5C0	0.000	0	0	8 V B1 S I -73	F.5C0	0.000	FF75.7	F00.0	
LV B1 S I -74	0.640	F00.67F	6.G	F.5C0	0.000	0	0	8 V B1 S I -74	F.5C0	0.000	FF77.5	F00.0	
LV B1 S I -5F	0.640	F00.4F3	6.R	F.5C0	0.000	0	0	8 V B1 S I -5F	F.5C0	0.000	FFF4.0	F00.0	
LV B1 S I -57	0.640	F00.RRR	6.R	F.5C0	0.000	0	0	8 V B1 S I -57	F.5C0	0.000	FF70.6	F00.0	
LV B1 S I -55	0.640	F00.R06	6.R	F.5C0	0.000	0	0	8 V B1 S I -55	F.5C0	0.000	FF7F.2	F00.0	
LV B1 S I -52	0.640	F00.R4F	6.R	F.5C0	0.000	0	0	8 V B1 S I -52	F.5C0	0.000	FF70.2	F00.0	
LV B1 S I -56	0.640	F00.464	6.R	F.5C0	0.000	0	0	8 V B1 S I -56	F.5C0	0.000	FFF3.G	F00.0	
LV B1 S I -5R	0.640	F0F.002	6.R	F.5C0	0.000	0	0	8 V B1 S I -5R	F.5C0	0.000	FFF3.F	F00.0	
LV B1 S I -54	0.640	F00.42G	6.R	F.5C0	0.000	0	0	8 V B1 S I -54	F.5C0	0.000	FFF3.R	F00.0	
LV B1 S I -20	0.640	F00.477	6.4	F.5C0	0.000	0	0	8 V B1 S I -20	F.5C0	0.000	FFF4.0	F00.0	
LV B1 S I -2F	0.640	F0F.5F4	RF	F.5C0	0.000	0	0	8 V B1 S I -2F	F.5C0	0.000	FFF2.6	F00.0	
LV B1 S I -27	0.640	F0F.732	RF	F.5C0	0.000	0	0	8 V B1 S I -27	F.5C0	0.000	FFFG0	F00.0	
LV B1 S I -25	0.640	F0F.5F3	RF	F.5C0	0.000	0	0	8 V B1 S I -25	F.5C0	0.000	FFF2.6	F00.0	
LV B1 S I -22	0.640	F0F.F66	R0	F.5C0	0.000	0	0	8 V B1 S I -22	F.5C0	0.000	FFF6.5	F00.0	
LV B1 S I -2G	0.640	F0F.03R	R0	F.5C0	0.000	0	0	8 V B1 S I -2G	F.5C0	0.000	FFFR.7	F00.0	
LV B1 S I -26	0.640	F00.447	6.4	F.5C0	0.000	0	0	8 V B1 S I -26	F.5C0	0.000	FFF3.7	F00.0	
LV B1 S I -23	0.640	F0F.GR2	RF	F.5C0	0.000	0	0	8 V B1 S I -23	F.5C0	0.000	FFFF.3	F00.0	
LV B1 S I -24	0.640	F0F.G73	RF	F.5C0	0.000	0	0	8 V B1 S I -24	F.5C0	0.000	FFF7.5	F00.0	
LV B1 S I -C0	0.640	F0F.GR7	RF	F.5C0	0.000	0	0	8 V B1 S I -C0	F.5C0	0.000	FFFF.3	F00.0	
8 V B1 S I -0F	52.C00	F00.305	GF	0	0	0.002	0.002	8 V B1 S I -07	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -0F	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -07	52.C00	F00.R25	GF	0	0	0.002	0.002	8 V B1 S I -0F	-F.52F	-0.006	77.5	F00.0	
								8 V B1 S I -05	7.637	-0.052	22.6	F00.0	
								LV B1 S I -07	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -05	52.C00	F00.627	GF	0	0	0.002	0.002	8 V B1 S I -07	-7.6R4	-0.00G	22.6	F00.0	
								8 V B1 S I -02	2.07F	-0.056	66.4	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
								LV B1 S I -05	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -02	52.C00	F00.GRG	GF	0	0	0.002	0.002	8 V B1 S I -05	-2.0F3	-0.0F0	66.4	F00.0	
								8 V B1 S I -0G	G5G4	-0.05F	34.7	F00.0	
								LV B1 S I -02	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -0G	52.C00	F00.2R2	GF	0	0	0.002	0.002	8 V B1 S I -02	-G5G2	-0.070	34.7	F00.0	
								8 V B1 S I -03	6.64G	-0.07F	FFF.G	F00.0	
								LV B1 S I -0G	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -06	52.C00	F00.260	G0	0	0	0.002	0.002	8 V B1 S I -0R	F.52F	-0.02F	77.2	-F00.0	
								LV B1 S I -06	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -0R	52.C00	F00.277	G0	0	0	0.002	0.002	8 V B1 S I -06	-F.52F	0.0F7	77.5	F00.0	
								8 V B1 S I -F6	-F.520	-0.072	77.5	F00.0	
								8 V B1 S I -FG	2.075	-0.074	6R.0	F00.0	
								LV B1 S I -0R	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -03	52.C00	F00.200	G0	0	0	0.002	0.002	8 V B1 S I -0G	-6.640	-0.0R5	FFF.G	F00.0	
								8 V B1 S I -04	3.057	0.057	F55.4	F00.0	
								LV B1 S I -03	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -04	52.C00	F00.734	G0	0	0	0.002	0.002	8 V B1 S I -03	-3.075	-0.F2G	F55.4	F00.0	
								8 V B1 S I -F0	4.562	0.F02	FG6.5	F00.0	
								LV B1 S I -04	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -F0	52.C00	F00.750	2.4	0	0	0.002	0.002	8 V B1 S I -04	-4.5G4	-0.F40	FG6.5	F00.0	
								8 V B1 S I -7G	F0.R00	0.F24	FR3.R	F00.0	
								LV B1 S I -F0	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -F5	52.C00	F00.G60	G0	0	0	0.002	0.002	8 V B1 S I -F2	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -F5	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -F2	52.C00	F00.G70	G0	0	0	0.002	0.002	8 V B1 S I -F5	-F.52F	0.004	77.5	F00.0	
								8 V B1 S I -FG	7.637	-0.0C0	22.R	-F00.0	
								LV B1 S I -F2	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -FG	52.C00	F00.5F6	G0	0	0	0.002	0.002	8 V B1 S I -0R	-2.0F3	-0.025	6R.0	F00.0	
								8 V B1 S I -F2	-7.6RR	-0.074	22.R	F00.0	
								8 V B1 S I -FR	3.056	0.05F	F52.F	F00.0	
								LV B1 S I -FG	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -F6	52.C00	F00.C0G	G0	0	0	0.002	0.002	8 V B1 S I -0R	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -F6	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -FR	52.C00	F00.F67	2.4	0	0	0.002	0.002	JB-7/F	4.566	0.F2R	FG6.G	F00.0	
								8 V B1 S I -FG	-3.072	-0.F33	F52.F	F00.0	
								LV B1 S I -FR	-F.52G	0.053	77.G	-F00.0	
8 V B1 S I -70	52.C00	F00.2FF	2.4	0	0	0.002	0.002	8 V B1 S I -7F	F.52F	-0.02F	77.2	-F00.0	
								LV B1 S I -70	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -7F	52.C00	F00.5FG	2.4	0	0	0.002	0.002	8 V B1 S I -70	-F.520	-0.052	77.2	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
								8 V B1 S I -77	7.63F	-0.00R	22.R	F00.0	
								LV B1 S I -7F	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -77	52.C00	F00.753	2.4	0	0	0.002	0.002	JB-7/F	G56F	0.073	34.G	F00.0	
								8 V B1 S I -7F	-7.6R4	-0.075	22.R	F00.0	
								8 V B1 S I -74	-F.520	-0.02R	77.2	44.4	
								LV B1 S I -77	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -75	52.C00	F00.702	2.4	0	0	0.002	0.002	34Y5p	F2.RF5	0.547	72G3	F00.0	
								8 V B1 S I -73	-F5.5RF	-0.255	775.2	44.4	
								LV B1 S I -75	-F.52G	0.05R	77.G	-F00.0	
8 V B1 S I -72	52.C00	F00.00G	2.3	0	0	0.002	0.002	8 V B1 S I -7G	F.52F	-0.02F	77.G	-F00.0	
								LV B1 S I -72	-F.52G	0.053	77.G	-F00.0	
8 V B1 S I -7G	52.C00	44.432	2.3	0	0	0.002	0.002	34YFp	F5.5G3	0.CGG	775.3	44.4	
								8 V B1 S I -F0	-F0.6RG	-0.G4G	FR4.0	44.3	
								8 V B1 S I -72	-F.52F	-0.00F	77.2	F00.0	
								LV B1 S I -7G	-F.52G	0.053	77.G	-F00.0	
8 V B1 S I -76	52.C00	F00.2FG	G0	0	0	0.002	0.002	8 V B1 S I -7R	F.52F	-0.02F	77.2	-F00.0	
								LV B1 S I -76	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -7R	52.C00	F00.56R	G0	0	0	0.002	0.002	8 V B1 S I -76	-F.52F	0.005	77.2	F00.0	
								8 V B1 S I -73	7.637	-0.022	22.R	-F00.0	
								LV B1 S I -7R	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -73	52.C00	F00.7RG	G0	0	0	0.002	0.002	8 V B1 S I -75	F5.530	0.74G	775.2	F00.0	
								8 V B1 S I -7R	-7.630	0.004	22.R	F00.0	
								8 V B1 S I -55	-4.5G4	-0.52G	FG6.5	44.4	
								LV B1 S I -73	-F.526	0.05R	77.G	-F00.0	
8 V B1 S I -74	52.C00	F00.5GF	2.4	0	0	0.002	0.002	8 V B1 S I -77	F.52F	-0.02F	77.2	-F00.0	
								LV B1 S I -74	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -5F	52.C00	F00.623	GF	0	0	0.002	0.002	8 V B1 S I -57	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -5F	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -57	52.C00	F00.C03	GF	0	0	0.002	0.002	8 V B1 S I -5F	-F.520	-0.0R0	77.5	44.4	
								8 V B1 S I -55	7.63F	0.074	22.6	F00.0	
								LV B1 S I -57	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -55	52.C00	F00.25R	GF	0	0	0.002	0.002	8 V B1 S I -73	4.5R2	0.FF7	FG6.7	F00.0	
								8 V B1 S I -57	-7.6R4	-0.0C6	22.6	F00.0	
								8 V B1 S I -52	-G.5G2	-0.04R	34.7	F00.0	
								LV B1 S I -55	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -52	52.C00	F00.G77	GF	0	0	0.002	0.002	8 V B1 S I -55	G.5G3	0.0G2	34.7	F00.0	
								8 V B1 S I -56	-7.6R3	-0.0F6	22.6	F00.0	
								8 V B1 S I -54	-F.554	-0.030	77.5	44.3	
								LV B1 S I -52	-F.526	0.05R	77.2	-F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 %ar	8 W	8 %ar	ND	8 W	8 %ar	p m9	f PY	f I a9
8 V B1 S I -56	52.C00	F00.R00	G7	0	0	0.002	0.002	8 V B1 S I -52	7.637	-0.0C2	22.6	-F00.0	
								8 V B1 S I -5R	-F.52F	0.0F5	77.5	F00.0	
								LV B1 S I -56	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -5R	52.C00	F00.R5G	G7	0	0	0.002	0.002	8 V B1 S I -56	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -5R	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -54	52.C00	F00.6RG	G7	0	0	0.002	0.002	8 V B1 S I -52	F.52F	-0.02F	77.5	-F00.0	
								LV B1 S I -54	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -20	52.C00	F00.6C5	G5	0	0	0.002	0.002	34Y2p	F5.563	0.275	777.2	44.4	
								8 V B1 S I -26	-F7.076	-0.262	700.F	44.4	
								LV B1 S I -20	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -2F	52.C00	F0F.0C0	GG	0	0	0.002	0.002	JB-2/F	F.52F	-0.02F	77.7	-F00.0	
								LV B1 S I -2F	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -27	52.C00	F0F.0FG	GG	0	0	0.002	0.002	JB-2/F	G5CG	0.030	33.R	F00.0	
								8 V B1 S I -24	-2.0F5	-0.F7F	66.G	F00.0	
								LV B1 S I -27	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -25	52.C00	F0F.024	GG	0	0	0.002	0.002	JB-2/F	F.52F	-0.02F	77.7	-F00.0	
								LV B1 S I -25	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -22	52.C00	F00.34R	GG	0	0	0.002	0.002	JB-2/F	-3.07R	-0.FR4	F55.7	F00.0	
								8 V B1 S I -2G	4.564	0.F54	FCG2	F00.0	
								LV B1 S I -22	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -2G	52.C00	F00.3F3	G2	0	0	0.002	0.002	8 V B1 S I -22	-4.56F	-0.7CG	FCG2	F00.0	
								8 V B1 S I -26	F0.R05	0.7F2	FRR.R	F00.0	
								LV B1 S I -2G	-F.526	0.05R	77.5	-F00.0	
8 V B1 S I -26	52.C00	F00.R75	G5	0	0	0.002	0.002	8 V B1 S I -20	F7.052	0.5G7	700.0	F00.0	
								8 V B1 S I -2G	-F0.645	-0.547	FRR.3	44.4	
								LV B1 S I -26	-F.526	0.05R	77.2	-F00.0	
8 V B1 S I -23	52.C00	F0F.506	G6	0	0	0.002	0.002	8 V B1 S I -24	F.52F	-0.020	77.7	-F00.0	
								LV B1 S I -23	-F.526	0.05R	77.7	-F00.0	
8 V B1 S I -24	52.C00	F0F.760	G6	0	0	0.002	0.002	8 V B1 S I -27	2.075	-0.024	66.G	F00.0	
								8 V B1 S I -23	-F.52F	0.005	77.7	F00.0	
								8 V B1 S I -C0	-F.52F	0.00G	77.7	F00.0	
								LV B1 S I -24	-F.526	0.05R	77.7	-F00.0	
8 V B1 S I -C0	52.C00	F0F.502	G6	0	0	0.002	0.002	8 V B1 S I -24	F.52F	-0.020	77.7	-F00.0	
								LV B1 S I -C0	-F.526	0.05R	77.7	-F00.0	
* PON	F53.000	F00.000	0.0	-CG.307	0.270	0	0	34I Fp	-CG.307	0.270	755.G	F00.0	
8 PI ~5	F5.300	44.3R7	GF	0	0	0	0	HV B1 S 8 PI & 34I FB	0.000	0.000	0.0	0.0	

* Nidicates a %oltage regulated bus (%oltage controlled or swing ty9e machine connected to it)

Nidicates a bus with a load mismatch oAmore than 0.F 8 Vp

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
51- N	1B6DD	NDDf65	B%k	E	D	E	E	3 V UGS _%66	%NTI N	%6BND	fBDN	1f%k	
								51_NU	NTI N	6BND	fBDN	1f%k	
51- f.	1B6DD	NDDf65	B%k	E	D	E	E	JU%/N	%NBMW5	%651D	fW%6	1f%l	
								51_NU	NBMW5	651D	fW%6	1f%l	
51- I.	1B6DD	NDDf65	B%k	E	D	E	E	3 V UGS _%6I	%NBM6N	%WD66	fWBMW	1f%B	
								51_NU	NBM6N	WD66	fWBMW	1f%B	
51- B.	1B6DD	NDDf65	B%k	E	D	E	E	3 V UGS _%BD	%NTf6f	%WBW5	fBWN	51%l	
								51_NU	NTf6f	WBW5	fBWN	51%l	
51_N	N.5%DDD	NDDDD6	DfD	E	D	E	E	POv	66%kN5	N5%T1B	fB6%B	16%D	
								HV UGS 3 P_	%66%kN5	%N5%T1B	fB6%B	16%D	
51_NU	1B6DD	NDDf65	B%k	E	D	E	E	51- B.	%NTf6f	%WBW5	fBWN	51%l	
								51- I.	%NBM6N	%WD66	fWBMW	1f%B	
								51- f.	%NBMW5	%651D	fW%6	1f%l	
								51- N	%NTI N	%6BND	fBDN	1f%k	
								3 P_~I	66%lDf	f1%kW	NDN%l	1f%D	
								& HV UGS 3 P_					
HV UGS 3 P_	N.5%DDD	NDDDD6	DfD	E	D	DfD6B	DfNBk	51_N	66%kN5	N5%T1B	fB6%B	16%D	
								51_NU	%66%kkN	%N5%B5f	fB6%5	1B%l	I%Nf6
								& 3 P_~I					
JU%/N	1B6DD	NDD61k	B%l	E	D	E	E	3 V UGS _%Nk	%%Tf6f	%%5D6	NWWN	11%W	
								3 V UGS _%6f	%6Tf6D	%NIIWD	1B%5	11%l	
								51- f.	NBkDf	6%BW6	fWDIl	11%k	
JU%B/N	1B6DD	NDN%1B6	6%B	E	D	E	E	3 V UGS _%BN	%NIBD	%DB6B	f1%f	1B%k	
								3 V UGS _%Bf	%6Tf6f	%NIIBN	11%6	1B%D	
								3 V UGS _%Bl	%NIBD	%DB6I	f1%f	1B%k	
								3 V UGS _%BB	5%DI I	f%5B5	N.1%l	1B%f	
LV UGS _%kN	DfWD	NDf%WN	W%5	NIf6D	DfBW%	E	E	3 V UGS _%kN	NIf6D	DfBW%	NWW%k	1B%5	
LV UGS _%kf	DfWD	NDf%W5	W%5	NIf6D	DfBW%	E	E	3 V UGS _%kf	NIf6D	DfBW%	NWBB	1B%5	
LV UGS _%kl	DfWD	NDf%6fN	W%5	NIf6D	DfBW%	E	E	3 V UGS _%kl	NIf6D	DfBW%	NW6%W	1B%5	
LV UGS _%kB	DfWD	NDf%BBW	W%5	NIf6D	DfBW%	E	E	3 V UGS _%kB	NIf6D	DfBW%	NWW%5	1B%5	
LV UGS _%k6	DfWD	NDf%II1	W%5	NIf6D	DfBW%	E	E	3 V UGS _%k6	NIf6D	DfBW%	NW%f5	1B%5	
LV UGS _%kW	DfWD	NDf%f1kW	W%B	NIf6D	DfBW%	E	E	3 V UGS _%kW	NIf6D	DfBW%	NW5%B	1B%5	
LV UGS _%kk	DfWD	NDf%f1k	W%B	NIf6D	DfBW%	E	E	3 V UGS _%kk	NIf6D	DfBW%	NW5%l	1B%5	
LV UGS _%k5	DfWD	NDf%f11	W%5	NIf6D	DfBW%	E	E	3 V UGS _%k5	NIf6D	DfBW%	NW5%5	1B%5	
LV UGS _%kl	DfWD	NDf%Dl1	W%B	NIf6D	DfBW%	E	E	3 V UGS _%kl	NIf6D	DfBW%	NNkDB	1B%5	
LV UGS _%kD	DfWD	NDf%DN5	W%B	NIf6D	DfBW%	E	E	3 V UGS _%kD	NIf6D	DfBW%	NNkNB	1B%5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
LV UGS _%N	DWD	NDfTk6	WB	NT6D	DBWk	E	E	3 V UGS _%N	NT6D	DBWk	NWkTT	1B5	
LV UGS _%B	DWD	NDfTI f	WB	NT6D	DBWk	E	E	3 V UGS _%B	NT6D	DBWk	NWkT5	1B5	
LV UGS _%6	DWD	NDfTNk	WB	NT6D	DBWk	E	E	3 V UGS _%6	NT6D	DBWk	NNkDT	1B5	
LV UGS _%W	DWD	NDfTf B	WB	NT6D	DBWk	E	E	3 V UGS _%W	NT6D	DBWk	NWkTI	1B5	
LV UGS _%k	DWD	NDNTf I	WB	NT6D	DBWk	E	E	3 V UGS _%k	NT6D	DBWk	NNkf'5	1B5	
LV UGS _%D	DWD	NDfTNkI	WI	NT6D	DBWk	E	E	3 V UGS _%D	NT6D	DBWk	NNWTW	1B5	
LV UGS _%N	DWD	NDfTDkf	WB	NT6D	DBWk	E	E	3 V UGS _%N	NT6D	DBWk	NNkDk	1B5	
LV UGS _%f	DWD	NDNTI 1N	WB	NT6D	DBWk	E	E	3 V UGS _%f	NT6D	DBWk	NNkNk	1B5	
LV UGS _%I	DWD	NDNTI 15	WB	NT6D	DBWk	E	E	3 V UGS _%I	NT6D	DBWk	NNkNW	1B5	
LV UGS _%B	DWD	NDNTWSB	WI	NT6D	DBWk	E	E	3 V UGS _%B	NT6D	DBWk	NNk6T	1B5	
LV UGS _%6	DWD	NDNTWWN	WI	NT6D	DBWk	E	E	3 V UGS _%6	NT6D	DBWk	NNk6'5	1B5	
LV UGS _%W	DWD	NDfTf66	W5	NT6D	DBWk	E	E	3 V UGS _%W	NT6D	DBWk	NNWSTW	1B5	
LV UGS _%k	DWD	NDfTfDB	W5	NT6D	DBWk	E	E	3 V UGS _%k	NT6D	DBWk	NNWTT	1B5	
LV UGS _%5	DWD	NDfTNDk	W5	NT6D	DBWk	E	E	3 V UGS _%5	NT6D	DBWk	NNkDT	1B5	
LV UGS _%1	DWD	NDfTNND	WB	NT6D	DBWk	E	E	3 V UGS _%1	NT6D	DBWk	NNkDT	1B5	
LV UGS _%N	DWD	NDf'66D	W5	NT6D	DBWk	E	E	3 V UGS _%N	NT6D	DBWk	NNW6T	1B5	
LV UGS _%f	DWD	NDfTBDf	W5	NT6D	DBWk	E	E	3 V UGS _%f	NT6D	DBWk	NNWkTD	1B5	
LV UGS _%I	DWD	NDfTf k	W5	NT6D	DBWk	E	E	3 V UGS _%I	NT6D	DBWk	NNWkT5	1B5	
LV UGS _%B	DWD	NDfTBf f	W5	NT6D	DBWk	E	E	3 V UGS _%B	NT6D	DBWk	NNWWk	1B5	
LV UGS _%W	DWD	NDfTWND	W5	NT6D	DBWk	E	E	3 V UGS _%W	NT6D	DBWk	NNWBTW	1B5	
LV UGS _%k	DWD	NDfTWBk	W5	NT6D	DBWk	E	E	3 V UGS _%k	NT6D	DBWk	NNWBT	1B5	
LV UGS _%1	DWD	NDf'65B	W5	NT6D	DBWk	E	E	3 V UGS _%1	NT6D	DBWk	NNWBI	1B5	
LV UGS _%BD	DWD	NDfTWWD	Wk	NT6D	DBWk	E	E	3 V UGS _%BD	NT6D	DBWk	NNWBID	1B5	
LV UGS _%BN	DWD	NDfTNI f	W5	NT6D	DBWk	E	E	3 V UGS _%BN	NT6D	DBWk	NN65TD	1B5	
LV UGS _%Bf	DWD	NDfTN66	W5	NT6D	DBWk	E	E	3 V UGS _%Bf	NT6D	DBWk	NN65T5	1B5	
LV UGS _%BI	DWD	NDfTNI N	W5	NT6D	DBWk	E	E	3 V UGS _%BI	NT6D	DBWk	NN65TD	1B5	
LV UGS _%BB	DWD	NDfTDDW	W5	NT6D	DBWk	E	E	3 V UGS _%BB	NT6D	DBWk	NNWDN	1B5	
LV UGS _%B6	DWD	NDf'5I1	W5	NT6D	DBWk	E	E	3 V UGS _%B6	NT6D	DBWk	NNWNT	1B5	
LV UGS _%BW	DWD	NDfTkWN	Wk	NT6D	DBWk	E	E	3 V UGS _%BW	NT6D	DBWk	NNWTI	1B5	
LV UGS _%B5	DWD	NDfTBk5	W5	NT6D	DBWk	E	E	3 V UGS _%B5	NT6D	DBWk	NN6B5	1B5	
LV UGS _%BI	DWD	NDfTBf 1	W5	NT6D	DBWk	E	E	3 V UGS _%BI	NT6D	DBWk	NN66TB	1B5	
LV UGS _%D	DWD	NDfTBkW	W5	NT6D	DBWk	E	E	3 V UGS _%D	NT6D	DBWk	NN6BI	1B5	
3 V UGS _%N	1B5LD	NDNTBkk	6TD	E	D	DDDB	DDDB	3 V UGS _%f	NTBN	DBf'I	f1Tf	16TB	
								LV UGS _%N	%NTB6	%DBf'k	f1Tf	16T	
3 V UGS _%f	1B5LD	NDNTBNB	6TD	E	D	DDDB	DDDB	3 V UGS _%N	%NTBD	%DBkN	f1'TB	1BT	
								3 V UGS _%I	f'TW5N	D51B	BWTW	1BI	
								LV UGS _%f	%NTB6	%DBf'k	f1Tf	16T	
3 V UGS _%I	1B5LD	NDNTDW	6TD	E	D	DDDB	DDDB	3 V UGS _%f	%6'TW5	%DII1B	BWTI	1BIB	
								3 V UGS _%B	BIDNI	NT6k	kDfN	1B'k	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								LV UGS _%l	%NIB6	%DBf'k	f1'Tl	16T	
3 V UGS _%lB	1B56DD	NDNTf f1	6'D	D	D	DDDB	DDDB	3 V UGS _%l	%BIDNW	%NBDI	kDll	1BTB	
								3 V UGS _%l6	6'T l6k	N5'fW	11'TW	1B'k	
								LV UGS _%lB	%NIB6	%DBf'k	f1'Tl	16T	
3 V UGS _%l6	1B56DD	NDNTNN6	6'D	D	D	DDDB	DDDB	3 V UGS _%lB	%6'T l6N	%N5kk	11'Tl	1BTB	
								3 V UGS _%l5	WfWf	f'TlDD	NNk'N	1BTW	
								LV UGS _%l6	%NIB6	%DBf'k	f1'TB	16T	
3 V UGS _%lW	1B56DD	NDNDl65	B'll	D	D	DDDB	DDDB	3 V UGS _%lk	NIBN	DBf'I	f1'Tl	16'B	
								LV UGS _%lW	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%lk	1B56DD	NDNDN5	B'll	D	D	DDDB	DDDB	3 V UGS _%lW	%NIBD	%DB6f	f1'TB	1B'k	
								3 V UGS _%lW	%NIBD	%DB51	f1'TW	11'Tl	
								3 V UGS _%l6	BIDf'N	NTWB	kDll	1B'k	
								LV UGS _%lk	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%l5	1B56DD	NDNDf'D	6'D	D	D	DDDB	DDDB	3 V UGS _%l6	%WW5k	%'T l6	NNk'k	1B'N	
								3 V UGS _%Dl	5'TDf 5	f'5Nk	NBDll	1BTB	
								LV UGS _%l5	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%Dl	1B56DD	NDD5k1	B'll	D	D	DDDB	DDDB	3 V UGS _%l5	%5'TDN5	%'Tl1N	NBNTW	11'Tl	
								3 V UGS _%ND	1'T l61	I'T l6B	NWBll	1B'N	
								LV UGS _%Dl	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%ND	1B56DD	NDDk1k	B'll	D	D	DDDB	DDDB	3 V UGS _%Dl	%'T l61	%'TBBD	NW6'B	11'Tl	
								3 V UGS _%l6	NDTWB	I'5'W	N55'5	1B'N	
								LV UGS _%ND	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%Nl	1B56DD	NDNN65	B'll	D	D	DDDB	DDDB	3 V UGS _%NB	NIBN	DBf'I	f1'Tl	16'B	
								LV UGS _%Nl	%NIB6	%DBf'k	f1'Tl	16T	
3 V UGS _%NB	1B56DD	NDNTNNB	B'll	D	D	DDDB	DDDB	3 V UGS _%Nl	%NIBD	%DB66	f1'TB	1B'k	
								3 V UGS _%N6	f'TW5N	D5'k5	BWk	16'D	
								LV UGS _%NB	%NIB6	%DBf'k	f1'TB	16T	
3 V UGS _%N6	1B56DD	NDD51k	B'll	D	D	DDDB	DDDB	3 V UGS _%lk	%BIDNW	%NBIW	kDlk	1B'f	
								3 V UGS _%NB	%'TWk6	%DII65	Bk'N	1B'N	
								3 V UGS _%Nk	5'TDI I	f'5Nk	NBNTf	1BTB	
								LV UGS _%N6	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%NW	1B56DD	NDNTNDW	B'll	D	D	DDDB	DDDB	3 V UGS _%lk	NIBN	DBf'I	f1'Tl	16'B	
								LV UGS _%NW	%NIB6	%DBf'k	f1'TB	16T	
3 V UGS _%Nk	1B56DD	NDDkDD	B'll	D	D	DDDB	DDDB	JU%/N	I'T lWD	I'T l1k	NW6'5	1BTD	
								3 V UGS _%N6	%'TlDNl	%'Tl1kB	NBf'N	11'T5	
								LV UGS _%Nk	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%lD	1B56DD	NDDll6B	BT5	D	D	DDDB	DDDB	3 V UGS _%lN	NIBN	DBf'I	f1'Tl	16'B	
								LV UGS _%lD	%NIB6	%DBf'W	f1'TB	16T	
3 V UGS _%lN	1B56DD	NDD56N	B'll	D	D	DDDB	DDDB	3 V UGS _%lD	%NIBD	%DBl1	f1'Tk	11'Tk	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								3 V UGS _%f	f TW5N	DIIf N	BkTD	1BTW	
								LV UGS _%N	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%f	1B56DD	NDDkW	B5	D	D	DDDB	DDDB	JU%/N	6T161	N556	1BT	1BT	
								3 V UGS _%N	%TWk5	%DII6N	BkTf	1BTf	
								3 V UGS _%1	%NII 1	%D6Nf	f1T5	11TB	
								LV UGS _%f	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%I	1B56DD	NDDkkW	B5	D	D	DDDB	DDDB	51- I.	N3kDI	6T6DN	fWDk	11Tk	
								3 V UGS _%5	%NTW	%TDk5	f1kTB	11T6	
								LV UGS _%I	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%B	1B56DD	NDDB61	B5	D	D	DDDB	DDDB	3 V UGS _%6	NIBN	DBff	f1TB	16TB	
								LV UGS _%B	%NIB6	%DBfW	f1T6	16T	
3 V UGS _%6	1B56DD	NDDBIW	B5	D	D	DDDB	DDDB	51- N	NTBk	6TNk	f15Tk	11Tf	
								3 V UGS _%D	%DWW6	BTDI	NlNk	1fTk	
								3 V UGS _%B	%NIBN	%DBW6	f1TW	1B56	
								LV UGS _%6	%NIB6	%DBfW	f1T6	16T	
3 V UGS _%W	1B56DD	NDNDIW	6TD	D	D	DDDB	DDDB	3 V UGS _%k	NIBN	DBfI	f1TI	16TB	
								LV UGS _%W	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%k	1B56DD	NDDII56	6TD	D	D	DDDB	DDDB	3 V UGS _%W	%NIBD	%DBWN	f1T6	1BTW	
								3 V UGS _%5	f TW5N	D555B	BW5	16TD	
								LV UGS _%k	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%5	1B56DD	NDD55k	6TD	D	D	DDDB	DDDB	3 V UGS _%I	NTBkI	BIIBD	f1W6	11T5	
								3 V UGS _%k	%TWk1	%DIINl	BkTD	1BTW	
								3 V UGS _%I	%T161	%T515	NWWf	11TI	
								LV UGS _%5	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%1	1B56DD	NDD51D	B5	D	D	DDDB	DDDB	3 V UGS _%f	NIBN	DBfI	f1TI	16TB	
								LV UGS _%1	%NIB6	%DBfW	f1TB	16T	
3 V UGS _%N	1B56DD	NDNTI6	6TD	D	D	DDDB	DDDB	3 V UGS _%f	NIBN	DBfI	f1TI	16TB	
								LV UGS _%N	%NIB6	%DBfk	f1TI	16T	
3 V UGS _%f	1B56DD	NDNN56	6TD	D	D	DDDB	DDDB	3 V UGS _%N	%NII 1	%D5I6	f1T5	1fTI	
								3 V UGS _%I	f TW5D	DII65	BkTN	1BTf	
								LV UGS _%f	%NIB6	%DBfk	f1TI	16T	
3 V UGS _%I	1B56DD	NDNNDI	6TN	D	D	DDDB	DDDB	3 V UGS _%5	1TkD	ITWB	NWB5	1BTN	
								3 V UGS _%f	%TWk5	%DII5W	BkTf	11T5	
								3 V UGS _%B	%T16N	%NII66	1BT	11TI	
								LV UGS _%I	%NIB6	%DBfk	f1TB	16T	
3 V UGS _%B	1B56DD	NDNfDW	6TN	D	D	DDDB	DDDB	3 V UGS _%I	6T16W	NIINI	1BID	1BTf	
								3 V UGS _%W	%TWkW	%DIIB6	BWI	1BTf	
								3 V UGS _%1	%NII 1	%D5B6	f1TI	1fTW	
								LV UGS _%B	%NIB6	%DBfk	f1TI	16T	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
3 V UGS _%W	1B%DD	NDNI 1W	6TD	D	D	DDDB	DDDB	3 V UGS _%B	f TW%N	D5kB	BW6	16TN	
								3 V UGS _%k	%NIBD	%DB6N	f1 TI	1B5	
								LV UGS _%W	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%k	1B%DD	NDNBI I	6TD	D	D	DDDB	DDDB	3 V UGS _%W	NIBN	DBfI	f1 Tf	16TB	
								LV UGS _%k	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%1	1B%DD	NDNIkD	6TD	D	D	DDDB	DDDB	3 V UGS _%B	NIBN	DBfI	f1 Tf	16TB	
								LV UGS _%1	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%BD	1B%DD	NDNBB3W	6Tf	D	D	DDDB	DDDB	51- B.	NIT61	6TDkI	f16Tk	11T5	
								3 V UGS _%BW	%NfTDN5	%BTW6D	fNfTW	11TI	
								LV UGS _%BD	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%BN	1B%DD	NDNII5B	6TB	D	D	DDDB	DDDB	JU%B/N	NIBN	DBfI	f1 TN	16TB	
								LV UGS _%BN	%NIB6	%DBfk	f1 Tf	16T	
3 V UGS _%Bf	1B%DD	NDNIIBW	6TB	D	D	DDDB	DDDB	JU%B/N	6T16f	NIIBD	11TB	1BTD	
								3 V UGS _%Bl	%BTDNN	%N5Nk	kDIB	11T5	
								LV UGS _%Bf	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%Bl	1B%DD	NDNII5I	6TB	D	D	DDDB	DDDB	JU%B/N	NIBN	DBfI	f1 TN	16TB	
								LV UGS _%Bl	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%BB	1B%DD	NDNk1W	6TI	D	D	DDDB	DDDB	JU%B/N	%5TDfI	%TIkD	NBDIW	11T5	
								3 V UGS _%B6	1TIWB	I TT1B	NWTk	1BTD	
								LV UGS _%BB	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%B6	1B%DD	NDNW55	6TI	D	D	DDDB	DDDB	3 V UGS _%BB	%TT6W	%T5NN	NWBIB	11TW	
								3 V UGS _%BW	NDIWk	I TTI1B	N5kTW	11TI	
								LV UGS _%B6	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%BW	1B%DD	NDN5B5	6Tf	D	D	DDDB	DDDB	3 V UGS _%BD	NfTDfk	B%61k	fNN5	11TW	
								3 V UGS _%B6	%NDIW5W	%BTNNB	N55Tk	11TI	
								LV UGS _%BW	%NIB6	%DBfk	f1 TI	16T	
3 V UGS _%B5	1B%DD	NDfTTkI	6TB	D	D	DDDB	DDDB	3 V UGS _%Bl	NIBN	DBfIB	f1 TD	16TB	
								LV UGS _%B5	%NIB6	%DBfk	f1 TN	16T	
3 V UGS _%Bl	1B%DD	NDfTTfB	6TB	D	D	DDDB	DDDB	3 V UGS _%Bf	BIDfI	NIB6	WTB	1BT5	
								3 V UGS _%B5	%NIBD	%DBWN	f1 Tf	1BTW	
								3 V UGS _%D	%NIBD	%DBWD	f1 Tf	1BTW	
								LV UGS _%Bl	%NIB6	%DBfk	f1 TN	16T	
3 V UGS _%D	1B%DD	NDfTTkN	6TB	D	D	DDDB	DDDB	3 V UGS _%Bl	NIBN	DBfIB	f1 TD	16TB	
								LV UGS _%D	%NIB6	%DBfk	f1 TN	16T	
* POv	N5TDD	NDDDDD	DTD	%6TkNk	%5TII	D	D	51_N	%6TkNk	%5TII	fB6TB	16TD	
3 P_~I	N5%DD	NDD6fk	6TN	D	D	D	D	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DTD	DTD	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DfN3 V.

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	6 - 4	p PI	p _a4
5N 06	B%GDD	0DDDD%	%k	E	D	E	E	3 V U1 S _vfG	v0BBB0	vGP%DG	f%DDG	NfTk	
								5N_0U	0BBB0	GP%DG	f%DDG	NfTk	
5N f6	B%GDD	0DDDD%	%k	E	D	E	E	JUvf/0	v0%WW5	vG5fG	fWB5	NfTN	
								5N_0U	0%WW5	G5fG	fWB5	NfTN	
5N B6	B%GDD	0DDDD%	%k	E	D	E	E	3 V U1 S _vfB	v0%WD	vWD%N	fWGD	NfT%	
								5N_0U	0%WD	WD%N	fWGD	NfT%	
5N %6	B%GDD	0DDDD%	%k	E	D	E	E	3 V U1 S _v%D	v0BfGf	vW%GN	f%W%	5NfN	
								5N_0U	0BfGf	W%GN	f%W%	5NfN	
5N_06	0B5TDDD	NGDDG	DfD	E	D	E	E	POR	GGkff	05TBD5	fG5TB	NGfD	
								HV U1 S 3 P_	vGGkff	v05TBD5	fG5TB	NGfD	
5N_0U	B%GDD	0DDDD%	%k	E	D	E	E	5N %6	v0BfGf	vW%GN	f%W%	5NfN	
								5N B6	v0%WD	vWD%N	fWGD	NfT%	
								5N f6	v0%WW5	vG5fG	fWB5	NfTN	
								5N 06	v0BBB0	vGP%DG	f%DDG	NfTk	
								3 P_~B	GGNDD	fBkEk	0DDGB	NfTD	
								& HV U1 S 3 P_					
HV U1 S 3 P_	0B5TDDD	NGDDG	DfD	E	D	DD%5	DDBB	5N_06	GGkff	05TBD5	fG5TB	NGfD	
								5N_0U	vGGkkD	v05TP%f	fG5Tk	N%fN	v0T5kG
								& 3 P_~B					
JUvf/0	B%GDD	0DDP%%	%fN	E	D	E	E	3 V U1 S _v0k	vNBGf	vBfGDf	0W%	NBfW	
								3 V U1 S _vff	vGBGD	v0TNGN	N%fN	NBfN	
								5N f6	0%kDf	GP%W0	fW0B	NBfk	
JUv%0	B%GDD	0DDTkNB	GP%	E	D	E	E	3 V U1 S _v%0	v0TB%D	vDP%GB	fBB	N%fk	
								3 V U1 S _v%f	vGBGf	v0TN%D	NBfW	N%fD	
								3 V U1 S _v%B	v0TB%D	vDP%GB	fBB	N%fk	
								3 V U1 S _v%%	5TDBB	fT5%W	0%DD	N%fB	
LV U1 S _vD0	DfWND	0DfTDP%D	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vD0	0TBGD	DP%Wk	00WGP%	N%fG	
LV U1 S _vDf	DfWND	0DfTP%k5	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vDf	0TBGD	DP%Wk	00WWD	N%fG	
LV U1 S _vDB	DfWND	0DfTBk0	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vDB	0TBGD	DP%Wk	00WkTB	N%fG	
LV U1 S _vD%	DfWND	0DfTfNG	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vD%	0TBGD	DP%Wk	00W5Tf	N%fG	
LV U1 S _vDG	DfWND	0DfTD5f	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vDG	0TBGD	DP%Wk	00WNfG	N%fG	
LV U1 S _vDW	DfWND	0DfTDfG	W%	0TBGD	DP%Wk	E	E	3 V U1 S _vDW	0TBGD	DP%Wk	00kDD	N%fG	
LV U1 S _vDk	DfWND	0DfTD5W	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vDk	0TBGD	DP%Wk	00kDfW	N%fG	
LV U1 S _vD5	DfWND	0DfTD55	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vD5	0TBGD	DP%Wk	00kDfW	N%fG	
LV U1 S _vDN	DfWND	0DDTN%5	WG	0TBGD	DP%Wk	E	E	3 V U1 S _vDN	0TBGD	DP%Wk	00kf Tf	N%fG	
LV U1 S _v0D	DfWND	0DD5Wk	W%	0TBGD	DP%Wk	E	E	3 V U1 S _v0D	0TBGD	DP%Wk	00kBTD	N%fG	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	6 - 4	p PI	p _a4
LV U1 S _v0B	DWND	0DfTf%	W%	0TBGD	DPAWk	E	E	3 V U1 S _v0B	0TBGD	DPAWk	00WND	N%G	
LV U1 S _v0%	DWND	0DfD50	W%	0TBGD	DPAWk	E	E	3 V U1 S _v0%	0TBGD	DPAWk	00WNG	N%G	
LV U1 S _v0G	DWND	0DDTNWW	W%	0TBGD	DPAWk	E	E	3 V U1 S _v0G	0TBGD	DPAWk	00kfTD	N%G	
LV U1 S _v0W	DWND	0DfTDkB	W%	0TBGD	DPAWk	E	E	3 V U1 S _v0W	0TBGD	DPAWk	00WNW	N%G	
LV U1 S _v0k	DWND	0DDTkk0	W%	0TBGD	DPAWk	E	E	3 V U1 S _v0k	0TBGD	DPAWk	00k%f	N%G	
LV U1 S _vfD	DWND	0DfTDf f	W%	0TBGD	DPAWk	E	E	3 V U1 S _vfD	0TBGD	DPAWk	00k0TB	N%G	
LV U1 S _vf0	DWND	0DDTNf0	W%	0TBGD	DPAWk	E	E	3 V U1 S _vf0	0TBGD	DPAWk	00kfTG	N%G	
LV U1 S _vff	DWND	0DD5BN	W%	0TBGD	DPAWk	E	E	3 V U1 S _vff	0TBGD	DPAWk	00kBP%	N%G	
LV U1 S _vfB	DWND	0DD5%W	WG	0TBGD	DPAWk	E	E	3 V U1 S _vfB	0TBGD	DPAWk	00kBTB	N%G	
LV U1 S _vf%	DWND	0DDTGBB	WB	0TBGD	DPAWk	E	E	3 V U1 S _vf%	0TBGD	DPAWk	00kkTD	N%G	
LV U1 S _vfG	DWND	0DDTGDN	WB	0TBGD	DPAWk	E	E	3 V U1 S _vfG	0TBGD	DPAWk	00kkTf	N%G	
LV U1 S _vfW	DWND	0DfTDD%	WG	0TBGD	DPAWk	E	E	3 V U1 S _vfW	0TBGD	DPAWk	00kDP%	N%G	
LV U1 S _vfk	DWND	0DfTDGB	WG	0TBGD	DPAWk	E	E	3 V U1 S _vfk	0TBGD	DPAWk	00k0TD	N%G	
LV U1 S _vf5	DWND	0DDTNGW	WG	0TBGD	DPAWk	E	E	3 V U1 S _vf5	0TBGD	DPAWk	00kfTD	N%G	
LV U1 S _vfN	DWND	0DDTNGN	W%	0TBGD	DPAWk	E	E	3 V U1 S _vfN	0TBGD	DPAWk	00kfTD	N%G	
LV U1 S _vB0	DWND	0DfP4DD	WG	0TBGD	DPAWk	E	E	3 V U1 S _vB0	0TBGD	DPAWk	00WkTD	N%G	
LV U1 S _vBf	DWND	0DfTfG0	WW	0TBGD	DPAWk	E	E	3 V U1 S _vBf	0TBGD	DPAWk	00W5Tk	N%G	
LV U1 S _vBB	DWND	0DfTDkW	WW	0TBGD	DPAWk	E	E	3 V U1 S _vBB	0TBGD	DPAWk	00WNW	N%G	
LV U1 S _vB%	DWND	0DfTfk0	WW	0TBGD	DPAWk	E	E	3 V U1 S _vB%	0TBGD	DPAWk	00W5TG	N%G	
LV U1 S _vBW	DWND	0DfP4WD	WW	0TBGD	DPAWk	E	E	3 V U1 S _vBW	0TBGD	DPAWk	00WWB	N%G	
LV U1 S _vBk	DWND	0DfP4Nk	WG	0TBGD	DPAWk	E	E	3 V U1 S _vBk	0TBGD	DPAWk	00WGN	N%G	
LV U1 S _vBN	DWND	0DfP4B%	WW	0TBGD	DPAWk	E	E	3 V U1 S _vBN	0TBGD	DPAWk	00WWW	N%G	
LV U1 S _v%D	DWND	0DfTGDN	Wk	0TBGD	DPAWk	E	E	3 V U1 S _v%D	0TBGD	DPAWk	00WGk	N%G	
LV U1 S _v%0	DWND	0DBTD%f	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%0	0TBGD	DPAWk	00GNk	N%G	
LV U1 S _v%f	DWND	0DBTDDG	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%f	0TBGD	DPAWk	00WDD	N%G	
LV U1 S _v%B	DWND	0DBTD%0	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%B	0TBGD	DPAWk	00GNk	N%G	
LV U1 S _v%%	DWND	0DfT5GW	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%%	0TBGD	DPAWk	00W5	N%G	
LV U1 S _v%G	DWND	0DfTk%N	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%G	0TBGD	DPAWk	00WBTD	N%G	
LV U1 S _v%W	DWND	0DfTW0D	Wk	0TBGD	DPAWk	E	E	3 V U1 S _v%W	0TBGD	DPAWk	00WWW	N%G	
LV U1 S _v%5	DWND	0DBTBf 5	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%5	0TBGD	DPAWk	00GWG	N%G	
LV U1 S _v%N	DWND	0DBTf 5D	W5	0TBGD	DPAWk	E	E	3 V U1 S _v%N	0TBGD	DPAWk	00CkTD	N%G	
LV U1 S _vGD	DWND	0DBTBfW	W5	0TBGD	DPAWk	E	E	3 V U1 S _vGD	0TBGD	DPAWk	00GWG	N%G	
3 V U1 S _vD0	B%GDD	0DDTBfG	GD	E	D	DDD%	DDD%	3 V U1 S _vDf	0TB%0	DP%fB	f BTf	NG%	
								LV U1 S _vD0	v0TB%G	vDP%fk	f BTB	NGB	
3 V U1 S _vDf	B%GDD	0DDTfW	GD	E	D	DDD%	DDD%	3 V U1 S _vD0	v0TB%D	vDP%k0	f BTG	N%P%	
								3 V U1 S _vDB	f TW50	D5NB	%WK	N%N	
								LV U1 S _vDf	v0TB%G	vDP%fk	f BTB	NGB	
3 V U1 S _vDB	B%GDD	0DDTDC%	GD	E	D	DDD%	DDD%	3 V U1 S _vDf	vf TW5	vDNBB	%WN	N%P%	
								3 V U1 S _vD%	%DDN	0TBGW	kDTf	N%5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Bj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	Bj	3 m	3 Mar	6 - 4	p PI	p _a4
								LV U1 S _vDB	v0TB%G	vDP%k	f BIB	NGIB	
3 V U1 S _vD%	B%GDDD	0D0TDkk	GID	D	D	DDD%	DDD%	3 V U1 S _vDB	v%DDW	v0T%f	kD%	N%D%	
								3 V U1 S _vDG	GIBGk	0T5fG	NBIk	N%dk	
								LV U1 S _vD%	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vDG	B%GDDD	0DDDNWB	GID	D	D	DDD%	DDD%	3 V U1 S _vD%	vGIBGD	v0T5kW	N%dD	N%D%	
								3 V U1 S _vD5	WWWf	f TfNN	00kTB	N%dW	
								LV U1 S _vDG	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vDW	B%GDDD	0DDDNDG	%dN	D	D	DDD%	DDD%	3 V U1 S _vDk	0TB%0	DP%B	f BIB	NGI%	
								LV U1 S _vDW	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vDk	B%GDDD	0DD5WG	%dN	D	D	DDD%	DDD%	3 V U1 S _vDW	v0TB%D	vDP%f	f BIG	N%d5	
								3 V U1 S _v0W	v0TB%D	vDP%5	f BIk	N%dD	
								3 V U1 S _v0G	%DDf 0	0TBWB	kD%	N%dk	
								LV U1 S _vDk	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vD5	B%GDDD	0DD5Wk	GID	D	D	DDD%	DDD%	3 V U1 S _vDG	vWW%k	vf TBNB	00kT5	N%df	
								3 V U1 S _vDN	5TDf 5	f T50W	0%0TD	N%D%	
								LV U1 S _vD5	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vDN	B%GDDD	0DDkf W	GID	D	D	DDD%	DDD%	3 V U1 S _vD5	v5TDD5	vf TNfN	0%0T5	NBTN	
								3 V U1 S _v0D	NIBGN	BIBGf	0WGf	N%dD	
								LV U1 S _vDN	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _v0D	B%GDDD	0DDWW%	%dN	D	D	DDD%	DDD%	3 V U1 S _vDN	vNIBGB	vBP%5	0WGk	NBTN	
								3 V U1 S _vfG	0DWW%	B5WD	05NID	N%dD	
								LV U1 S _v0D	v0TB%G	vDP%W	f BIG	NGIB	
3 V U1 S _v0B	B%GDDD	0D0TDDW	%dN	D	D	DDD%	DDD%	3 V U1 S _v0%	0TB%0	DP%B	f BIB	NGI%	
								LV U1 S _v0B	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _v0%	B%GDDD	0DDNWf	%dN	D	D	DDD%	DDD%	3 V U1 S _v0B	v0TB%D	vDP%G	f BIG	N%dk	
								3 V U1 S _v0G	f TW50	D5k5	%W5	NGID	
								LV U1 S _v0%	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _v0G	B%GDDD	0DDk%%	%dN	D	D	DDD%	DDD%	3 V U1 S _vDk	v%DDW	v0T%G	kDIN	N%df	
								3 V U1 S _v0%	vf TWkG	vDNGk	%kTf	N%df	
								3 V U1 S _v0k	5TDBB	f T50G	0%0T%	N%D%	
								LV U1 S _v0G	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _v0W	B%GDDD	0DDNG%	%dN	D	D	DDD%	DDD%	3 V U1 S _vDk	0TB%0	DP%B	f BIB	NGI%	
								LV U1 S _v0W	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _v0k	B%GDDD	0DDDP%k	%dN	D	D	DDD%	DDD%	JUvf /0	NIBWD	BIBNG	0WGIk	N%dD	
								3 V U1 S _v0G	v5TDDN	vf TNkf	0%fTB	NBT5	
								LV U1 S _v0k	v0TB%G	vDP%W	f BIG	NGIB	
3 V U1 S _vf D	B%GDDD	0DD5D0	%dN	D	D	DDD%	DDD%	3 V U1 S _vf 0	0TB%0	DP%B	f BIB	NGI%	
								LV U1 S _vf D	v0TB%G	vDP%W	f BI%	NGIB	
3 V U1 S _vf 0	B%GDDD	0DDWW5	%dN	D	D	DDD%	DDD%	3 V U1 S _vf D	v0TB%D	vDP%5	f BI5	NBIk	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Rj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	Rj	3 m	3 Mar	6 - 4	p PI	p _a4
								3 V U1 S _vf f	f TW50	DfNf0	%kD	N%dW	
								LV U1 S _vf 0	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vf f	B%dGDD	0DDfW0W	%dN	D	D	DDD%	DDD%	JUvf /0	GfBGN	0f55%	N%dG	N%dB	
								3 V U1 S _vf 0	vf TWk5	vDfNGD	%kfB	N%df	
								3 V U1 S _vf N	v0TBBN	vDfD00	f B55	NBf%	
								LV U1 S _vf f	v0TB%G	vDP%fW	f BfG	NGfB	
3 V U1 S _vf B	B%dGDD	0DDfWfB	GfD	D	D	DDD%	DDD%	5NfB6	0%kDB	GP%k	f WfD	NBfk	
								3 V U1 S _vf 5	v0BfBW	vGfDk%	f BkfK	NBfG	
								LV U1 S _vf B	v0TB%G	vDP%fW	f BfG	NGfB	
3 V U1 S _vf %	B%dGDD	0DDfBDW	%f5	D	D	DDD%	DDD%	3 V U1 S _vfG	0TB%0	DP%f	f BfG	NGf%	
								LV U1 S _vf %	v0TB%G	vDP%fW	f BfG	NGfB	
3 V U1 S _vfG	B%dGDD	0DDf5f	%f5	D	D	DDD%	DDD%	5Nf06	0BfB%k	GfDNB	f BNfD	NBff	
								3 V U1 S _v0D	v0DfWWG	v%fBDG	0N0fN	NfTk	
								3 V U1 S _vf %	v0TB%0	vDP%WG	f BfK	N%dG	
								LV U1 S _vfG	v0TB%G	vDP%fW	f BfG	NGfB	
3 V U1 S _vfW	B%dGDD	0DD55%	GfD	D	D	DDD%	DDD%	3 V U1 S _vfk	0TB%0	DP%fB	f BfB	NGf%	
								LV U1 S _vfW	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vfk	B%dGDD	0DD5Bf	GfD	D	D	DDD%	DDD%	3 V U1 S _vfW	v0TB%D	vDP%W0	f BfG	N%dW	
								3 V U1 S _vf 5	f TW50	Df55B	%WN	NGfD	
								LV U1 S _vfk	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vf 5	B%dGDD	0DDkB%	GfD	D	D	DDD%	DDD%	3 V U1 S _vfB	0BfBkB	%dNBk	f BW5	NBf5	
								3 V U1 S _vfk	vf TWkN	vDfN0N	%kfD	N%dW	
								3 V U1 S _vBB	vNfBGB	vBfGNG	0WWG	NBfB	
								LV U1 S _vf 5	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vfN	B%dGDD	0DDkBk	%dN	D	D	DDD%	DDD%	3 V U1 S _vf f	0TB%0	DP%fB	f BP%	NGf%	
								LV U1 S _vfN	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vB0	B%dGDD	0DD5B	GfD	D	D	DDD%	DDD%	3 V U1 S _vBf	0TB%0	DP%fB	f BfB	NGf%	
								LV U1 S _vB0	v0TB%G	vDP%fk	f BfB	NGfB	
3 V U1 S _vBf	B%dGDD	0DfDBf	GfD	D	D	DDD%	DDD%	3 V U1 S _vB0	v0TBBN	vDfGB%	f BfN	NfTN	
								3 V U1 S _vBB	f TW5D	DfNGk	%kfD	N%df	
								LV U1 S _vBf	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vBB	B%dGDD	0DDfNGW	GfD	D	D	DDD%	DDD%	3 V U1 S _vf 5	NBkD	BfBWf	0WGfD	N%d0	
								3 V U1 S _vBf	vf TWk5	vDfN5G	%kfB	NBfN	
								3 V U1 S _vB%	vGfBGD	v0TNGP%	N%dP%	NBfN	
								LV U1 S _vBB	v0TB%G	vDP%fW	f BP%	NGfB	
3 V U1 S _vB%	B%dGDD	0DDfDGB	GfD	D	D	DDD%	DDD%	3 V U1 S _vBB	GfBGW	0fN00	N%df	N%df	
								3 V U1 S _vBW	vf TWkW	vDfN%%	%kfD	N%dB	
								3 V U1 S _vBN	v0TBBN	vDfP%G	f BfN	NfTW	
								LV U1 S _vB%	v0TB%G	vDP%fW	f BP%	NGfB	

Bus		Voltage		Generation		Load		Load Flow					XFMR
Rj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	Rj	3 m	3 Mar	6 - 4	p PI	p _a4
3 V U1 S _vBW	B%GDD	0DDf%%	GD	D	D	DDD%	DDD%	3 V U1 S _vB%	f`W0	D5k%	%WW	NGD	
								3 V U1 S _vBk	v0TB%D	vDP%GD	f BP%	N%5	
								LV U1 S _vBW	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _vBk	B%GDD	0DDf50	GD	D	D	DDD%	DDD%	3 V U1 S _vBW	0TB%0	DP%B	f BIf	NG%	
								LV U1 S _vBk	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _vBN	B%GDD	0DDf0k	GD	D	D	DDD%	DDD%	3 V U1 S _vB%	0TB%0	DP%B	f BIf	NG%	
								LV U1 S _vBN	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _v%D	B%GDD	0DDfN%	Gf	D	D	DDD%	DDD%	5N1 %6	0BBGC5	GDWN	f BWD	NBG	
								3 V U1 S _v%W	v0f`DD5	v%WW	f 0f`N	NBB	
								LV U1 S _v%D	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _v%0	B%GDD	0DD5BB	GP%	D	D	DDD%	DDD%	JUv%0	0TB%0	DP%B	f BD	NG%	
								LV U1 S _v%0	v0TB%G	vDP%k	f BIf	NGB	
3 V U1 S _v%f	B%GDD	0DDfkNG	GP%	D	D	DDD%	DDD%	JUv%0	GBGf	0`NBN	NBW	N%D	
								3 V U1 S _v%N	v%DD0	v0TDW	kDG	NBG	
								LV U1 S _v%f	v0TB%G	vDP%k	f BIf	NGB	
3 V U1 S _v%B	B%GDD	0DD5B0	GP%	D	D	DDD%	DDD%	JUv%0	0TB%0	DP%B	f BD	NG%	
								LV U1 S _v%B	v0TB%G	vDP%k	f BIf	NGB	
3 V U1 S _v%%	B%GDD	0DDfW%	GB	D	D	DDD%	DDD%	JUv%0	v5`Df f	vf`NW5	0%D5	NB5	
								3 V U1 S _v%G	NBWB	BBN`	0WD	N%D	
								LV U1 S _v%%	v0TB%G	vDP%k	f BIf	NGB	
3 V U1 S _v%G	B%GDD	0DDfCBW	GB	D	D	DDD%	DDD%	3 V U1 S _v%%	vNBGG	vBGDN	0W%k	NBW	
								3 V U1 S _v%W	0DWW	BNB`	05k5	NBN	
								LV U1 S _v%G	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _v%W	B%GDD	0DDfBNW	GB	D	D	DDD%	DDD%	3 V U1 S _v%D	0f`Df`W	%GB%	f 0f`D	NBW	
								3 V U1 S _v%G	v0DW5W	v%DD0	05ND	NBB	
								LV U1 S _v%W	v0TB%G	vDP%k	f BIB	NGB	
3 V U1 S _v%5	B%GDD	0Df`Df0	GP%	D	D	DDD%	DDD%	3 V U1 S _v%N	0TB%0	DP%B	f BID	NG%	
								LV U1 S _v%5	v0TB%G	vDP%k	f BD	NGB	
3 V U1 S _v%N	B%GDD	0Df`DkB	GP%	D	D	DDD%	DDD%	3 V U1 S _v%f	%Df f	0TB%	WNG	N%5	
								3 V U1 S _v%5	v0TB%D	vDP%W0	f BIf	N%W	
								3 V U1 S _vGD	v0TB%D	vDP%WD	f BIf	N%W	
								LV U1 S _v%N	v0TB%G	vDP%k	f BD	NGB	
3 V U1 S _vGD	B%GDD	0Df`DfD	GP%	D	D	DDD%	DDD%	3 V U1 S _v%N	0TB%0	DP%B	f BID	NG%	
								LV U1 S _vGD	v0TB%G	vDP%k	f BID	NGB	
* POR	0B5`DDD	NGDDD	DD	vGGkf0	v05`BDW	D	D	5N_06	vGGkf0	v05`BDW	f G5`B	NGD	
3 P_~B	0B5DD	0DDBkB	Gf	D	D	D	D	HV U1 S 3 P_ & 5N_0U	DDDD	DDDD	DD	DD	

* Rndicates a Moltage regulated bus (Moltage controlled or swing ty4e - achine connected to it)

Rndicates a bus with a load - is- atch o8- ore than DD 3 V6

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
51I N	j BI6LDD	11T56B	BTW	L	D	L	L	3 V UGS _v%6	vNjTjjj	jTBjB	%jDIf	vlWI5	
								51_NU	NjTjjj	vjTBjB	%jDIf	vlWI5	
51I %	j BI6LDD	11T56B	BTW	L	D	L	L	JUv%N	vNBIWD	jT51f	%BIB	vlWIW	
								51_NU	NBIWD	vjT51f	%BIB	vlWIW	
51I j .	j BI6LDD	11T56B	BTW	L	D	L	L	3 V UGS _v%j	vNBIW66	jTWf	%jT%	vlfTD	
								51_NU	NBIW66	vjTWf	%jT%	vlfTD	
51I B.	j BI6LDD	11T56B	BTW	L	D	L	L	3 V UGS _vBD	vNjTAWj	%j1f	%%6TI	vl5TB	
								51_NU	NjTAWj	v%j1f	%%6TI	vl5TB	
51_N	Nj 5TDDD	11TI15	DID	L	D	L	L	POR	66TIBl	vN5T%B	%B6T6	vl6TD	
								HV UGS 3 P_	v66TIBl	N5T%B	%B6T6	vl6TD	
51_NU	j BI6LDD	11T56B	BTW	L	D	L	L	51I B.	vNjTAWj	%j1f	%%6TI	vl5TB	
								51I j .	vNBIW66	jTWf	%jT%	vlfTD	
								51I %	vNBIWD	jT51f	%BIB	vlWIW	
								51I N	vNjTjjj	jTBjB	%jDIf	vlWI5	
								3 P_~j	66TI%D	vNjTBIDW	1WjTIf	vlfT%	
								& HV UGS 3 P_					
HV UGS 3 P_	Nj 5TDDD	11TI15	DID	L	D	DID6j	DNBIf	51_N	66TIBl	vN5T%B	%B6T6	vl6TD	
								51_NU	v66T5D%	N5TNIf	%B6T6	vl6TN	vN5f6
								& 3 P_~j					
JUv%N	j BI6LDD	11TIWN	BI5	L	D	L	L	3 V UGS _vNf	vlTj6j	%W56	NWTI	vlWIN	
								3 V UGS _v%%	v6Tj6D	N5fW	1jTB	vl6TI	
								51I %	NBIDv%	vBPAWN	%WIj	vlWID	
JUvB%N	j BI6LDD	NDDBlW	6TW	L	D	L	L	3 V UGS _vBN	vNjBD	DBj N	%jTB	vl6P%	
								3 V UGS _vB%	v6Tj6%	NWDN	1jTD	vl6T5	
								3 V UGS _vBj	vNjBD	DBj %	%jTB	vl6P%	
								3 V UGS _vBB	5TDj %	v%BWj	Nj 1TI	vl6TW	
LV UGS _vDN	DIWD	11TI%l	WII	Nj 6D	vDBN6	L	L	3 V UGS _vDN	Nj 6D	vDBN6	NN5%j	vl6TW	
LV UGS _vD%	DIWD	11T5fj	W5	Nj 6D	vDBN6	L	L	3 V UGS _vD%	Nj 6D	vDBN6	NN5jTD	vl6TW	
LV UGS _vDj	DIWD	11Tf5	W5	Nj 6D	vDBN6	L	L	3 V UGS _vDj	Nj 6D	vDBN6	NN5BIN	vl6TW	
LV UGS _vDB	DIWD	11TfNl	W5	Nj 6D	vDBN6	L	L	3 V UGS _vDB	Nj 6D	vDBN6	NN5B5	vl6TW	
LV UGS _vD6	DIWD	11TWjN	W5	Nj 6D	vDBN6	L	L	3 V UGS _vD6	Nj 6D	vDBN6	NN56TI	vl6TW	
LV UGS _vDW	DIWD	11TW66	WIf	Nj 6D	vDBN6	L	L	3 V UGS _vDW	Nj 6D	vDBN6	NN56TW	vl6TW	
LV UGS _vDf	DIWD	11TWAD	WIf	Nj 6D	vDBN6	L	L	3 V UGS _vDf	Nj 6D	vDBN6	NN5WD	vl6TW	
LV UGS _vD5	DIWD	11T5f6	WIf	Nj 6D	vDBN6	L	L	3 V UGS _vD5	Nj 6D	vDBN6	NN5W6	vl6TW	
LV UGS _vDI	DIWD	11TBlj	WIW	Nj 6D	vDBN6	L	L	3 V UGS _vDI	Nj 6D	vDBN6	NN5fT6	vl6TW	
LV UGS _vND	DIWD	11TB6B	WIW	Nj 6D	vDBN6	L	L	3 V UGS _vND	Nj 6D	vDBN6	NN55TD	vl6TW	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
LV UGS _vNj	DfWD	11Tf6f	WTf	NJ 6D	vDBN6	E	E	3 V UGS _vNj	NJ 6D	vDBN6	NN5BfB	vl 6TW	
LV UGS _vNB	DfWD	11TfN5	WTf	NJ 6D	vDBN6	E	E	3 V UGS _vNB	NJ 6D	vDBN6	NN5Bf5	vl 6TW	
LV UGS _vN6	DfWD	11T6%f	WTW	NJ 6D	vDBN6	E	E	3 V UGS _vN6	NJ 6D	vDBN6	NN5f`N	vl 6TW	
LV UGS _vNW	DfWD	11TW5	WTf	NJ 6D	vDBN6	E	E	3 V UGS _vNW	NJ 6D	vDBN6	NN56`N	vl 6TW	
LV UGS _vNf	DfWD	11TBN%	W65	NJ 6D	vDBN6	E	E	3 V UGS _vNf	NJ 6D	vDBN6	NN55`6	vl 6TW	
LV UGS _v%D	DfWD	11TW65	WTW	NJ 6D	vDBN6	E	E	3 V UGS _v%D	NJ 6D	vDBN6	NN56`6	vl 6TW	
LV UGS _v%N	DfWD	11T6Wf	WTW	NJ 6D	vDBN6	E	E	3 V UGS _v%N	NJ 6D	vDBN6	NN5WTW	vl 6TW	
LV UGS _v%%	DfWD	11TB16	W65	NJ 6D	vDBN6	E	E	3 V UGS _v%%	NJ 6D	vDBN6	NN5f`6	vl 6TW	
LV UGS _v%j	DfWD	11TB%%	WTW	NJ 6D	vDBN6	E	E	3 V UGS _v%j	NJ 6D	vDBN6	NN55`B	vl 6TW	
LV UGS _v%B	DfWD	11Tj j N	WTB	NJ 6D	vDBN6	E	E	3 V UGS _v%B	NJ 6D	vDBN6	NN51`B	vl 6TW	
LV UGS _v%6	DfWD	11Tj Nj	WTB	NJ 6D	vDBN6	E	E	3 V UGS _v%6	NJ 6D	vDBN6	NN51`f	vl 6TW	
LV UGS _v%W	DfWD	11T655	WTf	NJ 6D	vDBN6	E	E	3 V UGS _v%W	NJ 6D	vDBN6	NN5WB	vl 6TW	
LV UGS _v%f	DfWD	11T5Bj	WTf	NJ 6D	vDBN6	E	E	3 V UGS _v%f	NJ 6D	vDBN6	NN5Wl	vl 6TW	
LV UGS _v%5	DfWD	11TB6f	WTf	NJ 6D	vDBN6	E	E	3 V UGS _v%5	NJ 6D	vDBN6	NN5f`l	vl 6TW	
LV UGS _v%4	DfWD	11TWDN	WTW	NJ 6D	vDBN6	E	E	3 V UGS _v%4	NJ 6D	vDBN6	NN5W%	vl 6TW	
LV UGS _vj N	DfWD	11TfWj	Wl	NJ 6D	vDBN6	E	E	3 V UGS _vj N	NJ 6D	vDBN6	NN5BJ	vl 6TW	
LV UGS _vj %	DfWD	11TWjN	W65	NJ 6D	vDBN6	E	E	3 V UGS _vj %	NJ 6D	vDBN6	NN56`l	vl 6TW	
LV UGS _vj j	DfWD	11T6WB	W65	NJ 6D	vDBN6	E	E	3 V UGS _vj j	NJ 6D	vDBN6	NN5Wf	vl 6TW	
LV UGS _vj B	DfWD	11TWj1	W65	NJ 6D	vDBN6	E	E	3 V UGS _vj B	NJ 6D	vDBN6	NN56`5	vl 6TW	
LV UGS _vj W	DfWD	11T5DW	Wl	NJ 6D	vDBN6	E	E	3 V UGS _vj W	NJ 6D	vDBN6	NN5j`5	vl 6TW	
LV UGS _vj f	DfWD	11T5j 1	Wl	NJ 6D	vDBN6	E	E	3 V UGS _vj f	NJ 6D	vDBN6	NN5j`B	vl 6TW	
LV UGS _vj 1	DfWD	11Tf5j	Wl	NJ 6D	vDBN6	E	E	3 V UGS _vj 1	NJ 6D	vDBN6	NN5BfN	vl 6TW	
LV UGS _vBD	DfWD	11TWf6	f`D	NJ 6D	vDBN6	E	E	3 V UGS _vBD	NJ 6D	vDBN6	NN56`B	vl 6TW	
LV UGS _vBN	DfWD	11Tlj f	f`j	NJ 6D	vDBN6	E	E	3 V UGS _vBN	NJ 6D	vDBN6	NN5%B%	vl 6TW	
LV UGS _vB%	DfWD	11TlDj	f`j	NJ 6D	vDBN6	E	E	3 V UGS _vB%	NJ 6D	vDBN6	NN5%W	vl 6TW	
LV UGS _vBj	DfWD	11Tlj W	f`j	NJ 6D	vDBN6	E	E	3 V UGS _vBj	NJ 6D	vDBN6	NN5%B%	vl 6TW	
LV UGS _vBB	DfWD	11T5N6	f`T%	NJ 6D	vDBN6	E	E	3 V UGS _vBB	NJ 6D	vDBN6	NN5j`f	vl 6TW	
LV UGS _vB6	DfWD	11TfW%	f`T%	NJ 6D	vDBN6	E	E	3 V UGS _vB6	NJ 6D	vDBN6	NN5BJ	vl 6TW	
LV UGS _vBW	DfWD	11TfD5	f`TN	NJ 6D	vDBN6	E	E	3 V UGS _vBW	NJ 6D	vDBN6	NN5Bll	vl 6TW	
LV UGS _vB5	DfWD	NDDfNW%	f`TB	NJ 6D	vDBN6	E	E	3 V UGS _vB5	NJ 6D	vDBN6	NNf1`W	vl 6TW	
LV UGS _vBl	DfWD	NDDfNNl	f`TB	NJ 6D	vDBN6	E	E	3 V UGS _vBl	NJ 6D	vDBN6	NN5DfN	vl 6TW	
LV UGS _v6D	DfWD	NDDfNWN	f`TB	NJ 6D	vDBN6	E	E	3 V UGS _v6D	NJ 6D	vDBN6	NNf1`W	vl 6TW	
3 V UGS _vDN	j BT5LD	NDD56%j	6T%	E	D	DDDB	DDDB	3 V UGS _vD%	NJ BN	vDBWD	%j`W	vl BfW	
								LV UGS _vDN	vNJ B6	DB6W	%j`W	vl Bf	
3 V UGS _vD%	j BT5LD	NDDBW5	6T%	E	D	DDDB	DDDB	3 V UGS _vDN	vNJ BD	DBNj	%j`B	vl 6TW	
								3 V UGS _vDj	%W5N	vD5fB	Bf`D	vl 6`N	
								LV UGS _vD%	vNj B6	DB6f	%j`f	vl Bf	
3 V UGS _vDj	j BT5LD	NDDJf j	6T%	E	D	DDDB	DDDB	3 V UGS _vD%	v%W5	D5j B	BW5	vl 6T5	
								3 V UGS _vDB	BDNl	vNf46	fDB	vl 6T%	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
								LV UGS _vDj	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vDB	jBf6LD	NDDjN6	6TN	L	D	DDDB	DDDB	3 V UGS _vDj	vBDNW	NP/Bl	fDP%	vl6T5	
								3 V UGS _vD6	6Tj6f	vNTDl	1j T5	vl6Tj	
								LV UGS _vDB	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vD6	jBf6LD	NDDP%f	6TN	L	D	DDDB	DDDB	3 V UGS _vDB	v6Tj6N	NW61	1j T5	vl6T5	
								3 V UGS _vD5	WW%	v%N%D	NNTP%	vl6Tj	
								LV UGS _vD6	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vDW	jBf6LD	NDDP%N	6TD	L	D	DDDB	DDDB	3 V UGS _vDf	NjBN	vDBWD	%jTf	vlBTW	
								LV UGS _vDW	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vDf	jBf6LD	NDDP%Nf	6TD	L	D	DDDB	DDDB	3 V UGS _vDW	vNjBD	DBj N	%jT5	vl6P%	
								3 V UGS _vNW	vNjBD	DTj 1W	%jTj	vl6Tl	
								3 V UGS _vN6	BDP%N	vNP%f	fDD6	vl6P%	
								LV UGS _vDf	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vD5	jBf6LD	NDDNf%	6TD	L	D	DDDB	DDDB	3 V UGS _vD6	vWW5W	%DD%f	NNWf	vl6Tf	
								3 V UGS _vDl	5TD%f	v%B5f	NBDDB	vl6T5	
								LV UGS _vD5	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vDl	jBf6LD	NDDDl D	6TD	L	D	DDDB	DDDB	3 V UGS _vD5	v5TDN5	%jf6	Nj 1T5	vl6Tl	
								3 V UGS _vND	1Tj61	v%5j W	NWjT5	vl6Tf	
								LV UGS _vDl	vNjB6	DB6f	%jT5	vlBTf	
3 V UGS _vND	jBf6LD	NDDD6N	BTl	L	D	DDDB	DDDB	3 V UGS _vDl	vlTj6j	%f6N	NWjTN	vl6Tl	
								3 V UGS _v%6	NDNWB	vjP%NN	N5W5	vl6T5	
								LV UGS _vND	vNjB6	DB6f	%jT5	vlBTf	
3 V UGS _vNj	jBf6LD	NDDj6%	6TD	L	D	DDDB	DDDB	3 V UGS _vNB	NjBN	vDBWD	%jTW	vlBTW	
								LV UGS _vNj	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vNB	jBf6LD	NDDjNB	6TD	L	D	DDDB	DDDB	3 V UGS _vNj	vNjBD	DB%5	%jT5	vl6Tj	
								3 V UGS _vN6	%W%N	vD551	BfTN	vlBTl	
								LV UGS _vNB	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vN6	jBf6LD	NDDN%B	6TD	L	D	DDDB	DDDB	3 V UGS _vDf	vBDNW	NP%NW	fDN	vl6Tf	
								3 V UGS _vNB	v%W6	D5ND	BWf	vl6Tf	
								3 V UGS _vNf	5TDj%	v%B5f	NBDD6	vl6T5	
								LV UGS _vN6	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vNW	jBf6LD	NDDP%B	6TD	L	D	DDDB	DDDB	3 V UGS _vDf	NjBN	vDBWD	%jTf	vlBTW	
								LV UGS _vNW	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _vNf	jBf6LD	NDDDND	BTl	L	D	DDDB	DDDB	JUv%N	1TjWD	v%f1%	NWjTB	vl6T5	
								3 V UGS _vN6	v5TDNl	%jj N	Nj 1Tf	vlWD	
								LV UGS _vNf	vNjB6	DB6f	%jT5	vlBTf	
3 V UGS _v%D	jBf6LD	NDDP%B	BTl	L	D	DDDB	DDDB	3 V UGS _v%N	NjBN	vDBWD	%jTf	vlBTW	
								LV UGS _v%D	vNjB6	DB6f	%jTf	vlBTf	
3 V UGS _v%N	jBf6LD	NDDNWB	BTl	L	D	DDDB	DDDB	3 V UGS _v%D	vNjj 1	DTj 5W	%jTj	vlWN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
								3 V UGS _v%%	%dW5D	vD5BW	B[TD	vl 6'B	
								LV UGS _v%N	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _v%%	j B56DD	NDDD1 %	BII	D	D	DDDB	DDDB	JUv%N	6Tj 65	vNW6D	1j Tf	vl 6'W	
								3 V UGS _v%N	v%dW5	D5NF	BW5	vl 6Tf	
								3 V UGS _v%l	vNj j 1	Dj f j	%j P%	vl Wj	
								LV UGS _v%%	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _v%j	j B56DD	NDDDY%D	BII	D	D	DDDB	DDDB	511 j .	N3Tf DB	vB7%l	%6WD	vl WN	
								3 V UGS _v%5	vNj Tj Wj	j Tf Wl	%j %j	vl WP%	
								LV UGS _v%j	vNj B6	DB6f	%j T5	vl BTf	
3 V UGS _v%B	j B56DD	11 Tl %l	BTf	D	D	DDDB	DDDB	3 V UGS _v%6	NjBN	vDBWN	%j Tf	vl BTW	
								LV UGS _v%B	vNj B6	DB6f	%j T5	vl BTf	
3 V UGS _v%6	j B56DD	11 TlNN	BTf	D	D	DDDB	DDDB	511 N	Nj Tj B5	vj TW8f	%j N5	vl W6	
								3 V UGS _vND	vNDfWW	%f W5	N5BTW	vl W6	
								3 V UGS _v%B	vNj BN	DBN5	%j T6	vl 6'6	
								LV UGS _v%6	vNj B6	DB6f	%j T5	vl BTf	
3 V UGS _v%W	j B56DD	NDDN56	6'D	D	D	DDDB	DDDB	3 V UGS _v%f	NjBN	vDBWD	%j Tf	vl BTW	
								LV UGS _v%W	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _v%f	j B56DD	NDDN8D	6'D	D	D	DDDB	DDDB	3 V UGS _v%W	vNj BD	DB%j	%j T6	vl 6'B	
								3 V UGS _v%5	%dW5N	vD55j	B[P%	vl 6'D	
								LV UGS _v%f	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _v%5	j B56DD	NDDD6B	6'D	D	D	DDDB	DDDB	3 V UGS _v%j	Nj Tj f j	vj TlD6	%j j TD	vl WD	
								3 V UGS _v%f	v%dW5	D5B5	B[TD	vl 6Tj	
								3 V UGS _vj j	vl Tj 6j	%651W	NW%B	vl WB	
								LV UGS _v%5	vNj B6	DB6f	%j T5	vl BTf	
3 V UGS _v%l	j B56DD	NDDN15	BII	D	D	DDDB	DDDB	3 V UGS _v%%	NjBN	vDBWD	%j Tf	vl BTW	
								LV UGS _v%l	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _vj N	j B56DD	NDDj 61	6'P%	D	D	DDDB	DDDB	3 V UGS _vj %	NjBN	vDBWD	%j TW	vl BTW	
								LV UGS _vj N	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _vj %	j B56DD	NDDP%f	6'P%	D	D	DDDB	DDDB	3 V UGS _vj N	vNj j 1	Dj 6D	%j TN	vl Wf	
								3 V UGS _vj j	%dW5D	vD5NN	BWf	vl 6Tf	
								LV UGS _vj %	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _vj j	j B56DD	NDDNWD	6TN	D	D	DDDB	DDDB	3 V UGS _v%5	1Tj Wl	v%5%f	NWj T6	vl 6Tf	
								3 V UGS _vj %	v%dW5	Df 5B	BWW	vl WD	
								3 V UGS _vj B	v6Tj 6N	N655j	1j P%	vl 6Tl	
								LV UGS _vj j	vNj B6	DB6f	%j Tf	vl BTf	
3 V UGS _vj B	j B56DD	NDDP%j 6	6'P%	D	D	DDDB	DDDB	3 V UGS _vj j	6Tj 6W	vNW%6	1j TB	vl 6Tf	
								3 V UGS _vj W	v%dW W	D5%B	BWf	vl 6TW	
								3 V UGS _vj 1	vNj j 1	Dj BD	%j TN	vl Wl	
								LV UGS _vj B	vNj B6	DB6f	%j Tf	vl BTf	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
3 V UGS _vj W	j B6LDD	NDDBDN	6T%	D	D	DDDB	DDDB	3 V UGS _vj B	%ZW5N	vD51j	BfTN	vlBll	
								3 V UGS _vj f	vNjBD	DBj j	%j6	vl6T%	
								LV UGS _vj W	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vj f	j B6LDD	NDDBj B	6T%	D	D	DDDB	DDDB	3 V UGS _vj W	NjBN	vDBWD	%jTW	vlBlW	
								LV UGS _vj f	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vj 1	j B6LDD	NDDjf 5	6T%	D	D	DDDB	DDDB	3 V UGS _vj B	NjBN	vDBWD	%jTW	vlBlW	
								LV UGS _vj 1	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vBD	j B6LDD	NDDPAVB	6j	D	D	DDDB	DDDB	511 B.	Njj61	vjTf56	%jNTf	vlWP%	
								3 V UGS _vBW	vN%DN5	jjj%6	%D5TN	vlWB	
								LV UGS _vBD	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vBN	j B6LDD	NDD6j N	6TW	D	D	DDDB	DDDB	JUvB/N	NjBN	vDBWD	%jTW	vlBlW	
								LV UGS _vBN	vNjB6	DB6W	%jTW	vlBlf	
3 V UGS _vB%	j B6LDD	NDDB15	6TW	D	D	DDDB	DDDB	JUvB/N	6j6%	vNWDN	1jTD	vl6T5	
								3 V UGS _vBl	vBDNN	NNBN	WTB	vlWP%	
								LV UGS _vB%	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vBj	j B6LDD	NDD6j D	6TW	D	D	DDDB	DDDB	JUvB/N	NjBN	vDBWD	%jTW	vlBlW	
								LV UGS _vBj	vNjB6	DB6W	%jTW	vlBlf	
3 V UGS _vBB	j B6LDD	NDDBND	6TW	D	D	DDDB	DDDB	JUvB/N	v5TD%%	%jBB	Nj1j	vlWD	
								3 V UGS _vB6	1jVj	v%5DB	NWdl	vl6T5	
								LV UGS _vBB	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vB6	j B6LDD	NDDj65	6T5	D	D	DDDB	DDDB	3 V UGS _vBB	vljj66	%dWD	NWdj	vlWN	
								3 V UGS _vBW	NDBW W	vjTN6D	N56Tl	vl6Tl	
								LV UGS _vB6	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vBW	j B6LDD	NDDj DB	6TB	D	D	DDDB	DDDB	3 V UGS _vBD	N%DD%f	vjTBj6	%D5Tf	vlWP%	
								3 V UGS _vB6	vNDBW5W	%dlf6	N56TN	vlWj	
								LV UGS _vBW	vNjB6	DB6f	%jTf	vlBlf	
3 V UGS _vB5	j B6LDD	NDDf66	6Tf	D	D	DDDB	DDDB	3 V UGS _vBl	NjBN	vDBWD	%j6	vlBlW	
								LV UGS _vB5	vNjB6	DB6W	%jTW	vlBlf	
3 V UGS _vBl	j B6LDD	NDDf N%	6Tf	D	D	DDDB	DDDB	3 V UGS _vB%	BDD%N	vNjD5	fDj	vl6TN	
								3 V UGS _vB5	vNjBD	DB%j	%jTB	vl6TB	
								3 V UGS _v6D	vNjBD	DB%6	%jTB	vl6Tj	
								LV UGS _vBl	vNjB6	DB6W	%jTW	vlBlf	
3 V UGS _v6D	j B6LDD	NDDf 6B	6Tf	D	D	DDDB	DDDB	3 V UGS _vBl	NjBN	vDBWD	%j6	vlBlW	
								LV UGS _v6D	vNjB6	DB6W	%jTW	vlBlf	
* POR	Nj 5TDDD	NDDDDD	DID	v66TB5	N5Tj%6	D	D	51_N	v66TB5	N5Tj%6	%B6T6	vl6TD	
3 P_~j	Nj T5DD	11TWNB	6TD	D	D	D	D	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DID	DID	

* Rndicates a Aoltage regulated bus (Aoltage controlled or swing ty4e - achine connected to it)

Rndicates a bus with a load - is- atch o8- ore than DN3 V.

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
4. j N0	5BDCGG	. . I94 T	BDT	C	G	C	C	9 V U6 S _Rv1	RN5I555	5IB54	v5N0G	R TI4	
								4. _NU	N5I555	R5IB54	v5N0G	R TI4	
4. j v0	5BDCGG	. . I94 T	BDT	C	G	C	C	JURv/N	RNBDT.	5DCGG	v1BDT	R TDT	
								4. _NU	NBDT.	R5DCGG	v1BDT	R TDT	
4. j 50	5BDCGG	. . I94 T	BDT	C	G	C	C	9 V U6 S _Rv5	RNBDT11	5DI4N	v15D	R %40G	
								4. _NU	NBDT11	R5DI4N	v15D	R %40G	
4. j B0	5BDCGG	. . I94 T	BDT	C	G	C	C	9 V U6 S _RBGG	RN5IYT5	vIBCG5	vvTDN	R 4IB	
								4. _NU	N5IYT5	RvIBCG5	vvTDN	R 4IB	
4. _N0	N541I0CGG	NGBD. 4	GI0G	C	G	C	C	PO7	11I94v	RN4I5TT	v55D	R 1I0G	
								HV U6 S 9 P_	RI1I94v	N4I5TT	v55D	R 1I0G	
4. _NU	5BDCGG	. . I94 T	BDT	C	G	C	C	4. j B0	RN5IYT5	vIBCG5	vvTDN	R 4IB	
								4. j 50	RNBDT11	5DI4N	v15D	R %40G	
								4. j v0	RNBDT.	5DCGG	v1BDT	R TDT	
								4. j N0	RN5I555	5IB54	v5N0G	R TI4	
								9 P_~5	11DN	RN5IBvv	. TBI9%	R %I0	
								& HV U6 S 9 P_					
HV U6 S 9 P_	N541I0CGG	NGBD. 4	GI0G	C	G	GI0GI.	GIDNTv	4. _N0	11I94v	RN4I5TT	v55D	R 1I0G	
								4. _NU	RI1I4GN	N4I9GB	v55D	R 1IN	5IDv1
								& 9 P_~5					
JURv/N	5BDCGG	. . I4T5	BI4	C	G	C	C	9 V U6 S _RN%	RI5I1v	vIT4%	NI5IN	R TIN	
								9 V U6 S _Rvv	RI1I5B.	NI9%	. 5I	R 1I	
								4. j v0	NBI9Gv	RBI9T5	v1TI	R TI0G	
JURB/N	5BDCGG	NGGI5. .	1IT	C	G	C	C	9 V U6 S _RBN	RN5IBG	GIB5N	v5I	R 1I9	
								9 V U6 S _RBv	RI1I51v	NITGN	. 5IN	R 1I4	
								9 V U6 S _RB5	RN5IBG	GIB5v	v5I	R 1I9	
								9 V U6 S _RBB	41I05v	RvIBITB	NBGI0G	R 1IT	
LV U6 S _RGN	GIT. G	. . I45N	TID	N5I1G	RGIBNl	C	C	9 V U6 S _RGN	N5I1G	RGIBNl	NN45I	R 1IT	
LV U6 S _RGv	GIT. G	. . I9%4	TID	N5I1G	RGIBNl	C	C	9 V U6 S _RGv	N5I1G	RGIBNl	NN4BIN	R 1IT	
LV U6 S _RG5	GIT. G	. . IT4G	TI4	N5I1G	RGIBNl	C	C	9 V U6 S _RG5	N5I1G	RGIBNl	NN41I5	R 1IT	
LV U6 S _RGB	GIT. G	. . IIvN	TI4	N5I1G	RGIBNl	C	C	9 V U6 S _RGB	N5I1G	RGIBNl	NN4TI0G	R 1IT	
LV U6 S _RGl	GIT. G	. . I55	TI4	N5I1G	RGIBNl	C	C	9 V U6 S _RGl	N5I1G	RGIBNl	NN4%40G	R 1IT	
LV U6 S _RGT	GIT. G	. . I14	TI9%	N5I1G	RGIBNl	C	C	9 V U6 S _RGT	N5I1G	RGIBNl	NN4TI9%	R 1IT	
LV U6 S _RG%	GIT. G	. . Ivv	TI9%	N5I1G	RGIBNl	C	C	9 V U6 S _RG%	N5I1G	RGIBNl	NN4%I0	R 1IT	
LV U6 S _RG4	GIT. G	. . IB8%	TI9%	N5I1G	RGIBNl	C	C	9 V U6 S _RG4	N5I1G	RGIBNl	NN4%I9%	R 1IT	
LV U6 S _RG	GIT. G	. . I5. 1	TIT	N5I1G	RGIBNl	C	C	9 V U6 S _RG	N5I1G	RGIBNl	NN44I9%	R 1IT	
LV U6 S _RNG	GIT. G	. . I51T	TIT	N5I1G	RGIBNl	C	C	9 V U6 S _RNG	N5I1G	RGIBNl	NN4. IN	R 1IT	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
LV U6 S _RN5	GD. G	. . D1.	TD%	N51G	RGBRNl	C	C	9 V U6 S _RN5	N51G	RGBRNl	NN41D	R 1D	
LV U6 S _RNB	GD. G	. . DvN	TD%	N51G	RGBRNl	C	C	9 V U6 S _RNB	N51G	RGBRNl	NN4TD6	R 1D	
LV U6 S _RNl	GD. G	. . DBv.	TD	N51G	RGBRNl	C	C	9 V U6 S _RNl	N51G	RGBRNl	NN445	R 1D	
LV U6 S _RNT	GD. G	. . DGG	TD%	N51G	RGBRNl	C	C	9 V U6 S _RNT	N51G	RGBRNl	NN4TD	R 1D	
LV U6 S _RN%	GD. G	. . I5NB	TD	N51G	RGBRNl	C	C	9 V U6 S _RN%	N51G	RGBRNl	NN4. D	R 1D	
LV U6 S _RvG	GD. G	. . DTG	TD	N51G	RGBRNl	C	C	9 V U6 S _RvG	N51G	RGBRNl	NN4TD%	R 1D	
LV U6 S _RvN	GD. G	. . IBT.	TD	N51G	RGBRNl	C	C	9 V U6 S _RvN	N51G	RGBRNl	NN4%4	R 1D	
LV U6 S _Rvv	GD. G	. . I5. %	TD	N51G	RGBRNl	C	C	9 V U6 S _Rvv	N51G	RGBRNl	NN44D%	R 1D	
LV U6 S _Rv5	GD. G	. . I5vB	TD	N51G	RGBRNl	C	C	9 V U6 S _Rv5	N51G	RGBRNl	NN4. D	R 1D	
LV U6 S _RvB	GD. G	. . D55	TDB	N51G	RGBRNl	C	C	9 V U6 S _RvB	N51G	RGBRNl	NN GD	R 1D	
LV U6 S _Rv1	GD. G	. . DNl	TDB	N51G	RGBRNl	C	C	9 V U6 S _Rv1	N51G	RGBRNl	NN G4	R 1D	
LV U6 S _RvT	GD. G	. . DB. G	TD%	N51G	RGBRNl	C	C	9 V U6 S _RvT	N51G	RGBRNl	NN4%D	R 1D	
LV U6 S _Rv%	GD. G	. . DBBl	TD%	N51G	RGBRNl	C	C	9 V U6 S _Rv%	N51G	RGBRNl	NN44DN	R 1D	
LV U6 S _Rv4	GD. G	. . I51.	TD%	N51G	RGBRNl	C	C	9 V U6 S _Rv4	N51G	RGBRNl	NN4. DN	R 1D	
LV U6 S _Rv.	GD. G	. . DGB	TD	N51G	RGBRNl	C	C	9 V U6 S _Rv.	N51G	RGBRNl	NN4%DB	R 1D	
LV U6 S _R5N	GD. G	. . DT1	TD	N51G	RGBRNl	C	C	9 V U6 S _R5N	N51G	RGBRNl	NN41D	R 1D	
LV U6 S _R5v	GD. G	. . D55	T4	N51G	RGBRNl	C	C	9 V U6 S _R5v	N51G	RGBRNl	NN4%4G	R 1D	
LV U6 S _R55	GD. G	. . DBTT	T4	N51G	RGBRNl	C	C	9 V U6 S _R55	N51G	RGBRNl	NN4%4	R 1D	
LV U6 S _R5B	GD. G	. . DBN	T4	N51G	RGBRNl	C	C	9 V U6 S _R5B	N51G	RGBRNl	NN4TD	R 1D	
LV U6 S _R5T	GD. G	. . D4G.	TD	N51G	RGBRNl	C	C	9 V U6 S _R5T	N51G	RGBRNl	NN4BD	R 1D	
LV U6 S _R5%	GD. G	. . D4BN	TD	N51G	RGBRNl	C	C	9 V U6 S _R5%	N51G	RGBRNl	NN4BD	R 1D	
LV U6 S _R5.	GD. G	. . DT41	TD	N51G	RGBRNl	C	C	9 V U6 S _R5.	N51G	RGBRNl	NN41D	R 1D	
LV U6 S _RBG	GD. G	. . D%G	%4G	N51G	RGBRNl	C	C	9 V U6 S _RBG	N51G	RGBRNl	NN4TD	R 1D	
LV U6 S _RBN	GD. G	. . I45.	%45	N51G	RGBRNl	C	C	9 V U6 S _RBN	N51G	RGBRNl	NN45DB	R 1D	
LV U6 S _RBv	GD. G	. . I4Gl	%45	N51G	RGBRNl	C	C	9 V U6 S _RBv	N51G	RGBRNl	NN45D4	R 1D	
LV U6 S _RB5	GD. G	. . I454	%45	N51G	RGBRNl	C	C	9 V U6 S _RB5	N51G	RGBRNl	NN45DB	R 1D	
LV U6 S _RBB	GD. G	. . D%N%	%4D	N51G	RGBRNl	C	C	9 V U6 S _RBB	N51G	RGBRNl	NN4BD4	R 1D	
LV U6 S _RB1	GD. G	. . DTB	%4D	N51G	RGBRNl	C	C	9 V U6 S _RB1	N51G	RGBRNl	NN41D	R 1D	
LV U6 S _RBT	GD. G	. . DNG	%4N	N51G	RGBRNl	C	C	9 V U6 S _RBT	N51G	RGBRNl	NN4TDN	R 1D	
LV U6 S _RB4	GD. G	NGGI0iT1	%4B	N51G	RGBRNl	C	C	9 V U6 S _RB4	N51G	RGBRNl	NN4GD%	R 1D	
LV U6 S _RB.	GD. G	NGGI0ivN	%4B	N51G	RGBRNl	C	C	9 V U6 S _RB.	N51G	RGBRNl	NN4ND	R 1D	
LV U6 S _R1G	GD. G	NGGI0iT5	%4B	N51G	RGBRNl	C	C	9 V U6 S _R1G	N51G	RGBRNl	NN4GD%	R 1D	
9 V U6 S _RGN	5BDCGG	NGGIBvT	1D	C	G	GI0CB	GI0CB	9 V U6 S _RGv	N5BN	RGBTG	v5DT	R BD	
								LV U6 S _RGN	RN5Bl	GB1%	v5D%	R BD%	
9 V U6 S _RGv	5BDCGG	NGG35%N	1D	C	G	GI0CB	GI0CB	9 V U6 S _RGN	RN5BG	GBN5	v5DB	R 1D	
								9 V U6 S _RG5	vDT4N	RG4%B	B%4G	R 1DN	
								LV U6 S _RGv	RN5Bl	GB1%	v5D%	R BD%	
9 V U6 S _RG5	5BDCGG	NGGD%T	1D	C	G	GI0CB	GI0CB	9 V U6 S _RGv	RvDT%4	G451	BTD4	R 1D	
								9 V U6 S _RGB	BI0N	RND. 1	%GD	R 1D	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
								LV U6 S _RG5	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RGB	5BDCGG	NGGD9N%	1DN	C	G	G0CB	G0CB	9 V U6 S _RG5	R80NT	N9B.	%GD9	R 1D	
								9 V U6 S _RGl	1551%	RN9NG	. 5D	R 15	
								LV U6 S _RGB	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RGl	5BDCGG	NGGDNv.	1DN	C	G	G0CB	G0CB	9 V U6 S _RGB	R1551N	NDTG	. 5DT	R 1D	
								9 V U6 S _RG4	TDT. v	RvDNvN	NN%45	R 15	
								LV U6 S _RGl	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RGT	5BDCGG	NGGDNlB	1I0G	C	G	G0CB	G0CB	9 V U6 S _RC%	N5BBN	RGBBTG	v5D%	R BDT	
								LV U6 S _RGT	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RC%	5BDCGG	NGGDNN	1I0G	C	G	G0CB	G0CB	9 V U6 S _RGT	RN5BBG	GBB5N	v5D	R 1D	
								9 V U6 S _RNT	RN5BBG	GB5. T	v5I5	R 1D	
								9 V U6 S _RNl	BI0vN	RN944	%GDT	R 1D	
								LV U6 S _RC%	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RG4	5BDCGG	NGGI0P%B	1I0G	C	G	G0CB	G0CB	9 V U6 S _RGl	RTD4T	vI0v4	NNTD4	R 1D%	
								9 V U6 S _RG	4I0v%	RvDB44	NBGD	R 1D	
								LV U6 S _RG4	RN5BBl	GBB1%	v5D4	R BD%	
9 V U6 S _RG	5BDCGG	. . D. v	1I0G	C	G	G0CB	G0CB	9 V U6 S _RG4	R4I0N4	vI5%T	NBGI0G	R 1D	
								9 V U6 S _RNG	. I51.	RvI45%	NT5D%	R 1D%	
								LV U6 S _RG	RN5BBl	GBB1%	v5D4	R BD%	
9 V U6 S _RNG	5BDCGG	. . D1B	BD	C	G	G0CB	G0CB	9 V U6 S _RG	R I515	vD%I v	NT5D9	R 1D	
								9 V U6 S _Rvl	NGDT. B	I5D9N5	N4TD	R 1D4	
								LV U6 S _RNG	RN5BBl	GBB1%	v5D4	R BD%	
9 V U6 S _RN5	5BDCGG	NGGD911	1I0G	C	G	G0CB	G0CB	9 V U6 S _RNB	N5BBN	RGBBTG	v5D%	R BDT	
								LV U6 S _RN5	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RNB	5BDCGG	NGGD9N%	1I0G	C	G	G0CB	G0CB	9 V U6 S _RN5	RN5BBG	GBBv4	v5D	R 15	
								9 V U6 S _RNl	vDT4N	RGD44.	B%Av	R BD	
								LV U6 S _RNB	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RNl	5BDCGG	NGGI0v%	1I0G	C	G	G0CB	G0CB	9 V U6 S _RC%	R80NT	N9NT	%GD9	R 1D%	
								9 V U6 S _RNB	RvDT%I	GB4NN	BTD4	R 1D%	
								9 V U6 S _RN%	4I025v	RvDB44	NBGD%	R 1D	
								LV U6 S _RNl	RN5BBl	GBB1%	v5D4	R BD%	
9 V U6 S _RNT	5BDCGG	NGGDN. %	1I0G	C	G	G0CB	G0CB	9 V U6 S _RC%	N5BBN	RGBBTG	v5D%	R BDT	
								LV U6 S _RNT	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RN%	5BDCGG	. . DNv	BD	C	G	G0CB	G0CB	JURv/N	. I5TG	RvD% 5	NT5DT	R 1D4	
								9 V U6 S _RNl	R4I02N	vI555	N5. D	R TI0G	
								LV U6 S _RN%	RN5BBl	GBB1%	v5D4	R BD%	
9 V U6 S _RvG	5BDCGG	NGGDNlT	BD	C	G	G0CB	G0CB	9 V U6 S _RvN	N5BBN	RGBBTG	v5D%	R BDT	
								LV U6 S _RvG	RN5BBl	GBB1%	v5D%	R BD%	
9 V U6 S _RvN	5BDCGG	NGGI0iI%	BD	C	G	G0CB	G0CB	9 V U6 S _RvG	RN55.	GB54T	v5I5	R TIDN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
								9 V U6 S _Rvv	vDT4G	RG34BT	B%40	R 1DB	
								LV U6 S _RvN	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rvv	5BDCGG	. . D. 1	BD	C	G	G0CB	G0CB	JURv/N	1I514	RNDT1N	. 5I4	R 1DT	
								9 V U6 S _RvN	RvDT%4	G34N%	BTD	R 1DT	
								9 V U6 S _Rv.	RN55.	G3%5	v5I5	R TI5	
								LV U6 S _Rvv	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rv5	5BDCGG	. . Dvv	BD	C	G	G0CB	G0CB	4. j 50	NBD%CB	RBD5v	v1TD	R TDN	
								9 V U6 S _Rv4	RN5I5T5	5D%8N	v5vD	R TD	
								LV U6 S _Rv5	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _RvB	5BDCGG	. . I45v	BD%	C	G	G0CB	G0CB	9 V U6 S _Rv1	N5BN	RGDBTN	v5I4	R BDT	
								LV U6 S _RvB	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rv1	5BDCGG	. . I4NB	BD%	C	G	G0CB	G0CB	4. j N0	N5I5B4	R5DT1G	v5vI0	R TD	
								9 V U6 S _RNG	RNGDTT	vD%8N	N4BI4	R TI4	
								9 V U6 S _RvB	RN5BN	GDBN4	v5D	R 1D	
								LV U6 S _Rv1	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _RvT	5BDCGG	NGGI0G4%	1DN	C	G	G0CB	G0CB	9 V U6 S _Rv%	N5BN	RGDBTN	v5D%	R BDT	
								LV U6 S _RvT	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rv%	5BDCGG	NGGI0B5	1I0G	C	G	G0CB	G0CB	9 V U6 S _RvT	RN5BG	GDBv5	v5D	R 1DB	
								9 V U6 S _Rv4	vDT4N	RG34B	B%40	R 1I0G	
								LV U6 S _Rv%	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rv4	5BDCGG	. . D1%	1I0G	C	G	G0CB	G0CB	9 V U6 S _Rv5	N5I5%5	R5DCP%	v55D	R TI0G	
								9 V U6 S _Rv%	RvDT%4	G34B4	B%40	R 1I5	
								9 V U6 S _R55	R I5I5	vD. 4	NTvD	R TIDB	
								LV U6 S _Rv4	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _Rv.	5BDCGG	NGGIDNGN	BD	C	G	G0CB	G0CB	9 V U6 S _Rvv	N5BN	RGDBTN	v5D%	R BDT	
								LV U6 S _Rv.	RN5BI	GDB1%	v5D%	R BD%	
9 V U6 S _R5N	5BDCGG	NGGD9TN	1D9	C	G	G0CB	G0CB	9 V U6 S _R5v	N5BN	RGDBTG	v5D%	R BDT	
								LV U6 S _R5N	RN5BI	GDB1%	v5D%	R BD%	
9 V U6 S _R5v	5BDCGG	NGGD05G	1D9	C	G	G0CB	G0CB	9 V U6 S _R5N	RN55.	G51N	v5DN	R TD%	
								9 V U6 S _R55	vDT4G	RG34NN	BTI4	R 1D%	
								LV U6 S _R5v	RN5BI	GDB1%	v5D%	R BD%	
9 V U6 S _R55	5BDCGG	NGGI0iT5	1DN	C	G	G0CB	G0CB	9 V U6 S _Rv4	. I5T.	RvI4v4	NT5D%	R 1D%	
								9 V U6 S _R5v	RvDT%4	GD%4B	BTD%	R TI0G	
								9 V U6 S _R5B	RI5I1N	ND4B	. 5I5	R 1D	
								LV U6 S _R55	RN5BI	GDB1%	v5I4	R BD%	
9 V U6 S _R5B	5BDCGG	NGGD05%	1D9	C	G	G0CB	G0CB	9 V U6 S _R55	1I51T	RNDv1	. 5D	R 1D%	
								9 V U6 S _R5T	RvDT%4T	G34vB	BTI4	R 1DT	
								9 V U6 S _R5.	RN55.	G5BN	v5DN	R TD	
								LV U6 S _R5B	RN5BI	GDB1%	v5D%	R BD%	

Pro2ect:	F m OH m 7F W	**ETAP**		Page:	1
Location:	Paulding, OH	NTI0I0C		Wate:	NGRGTRvGN%
Contract:				SF :	m ES_m OOWP
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		f ekision:	1GA MEF
j ilenaI e:	F m - OH			ConpigD	F orI al

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
9 V U6 S _I5T	5BDCG	NGG35GB	1D	C	G	GI0CB	GI0CB	9 V U6 S _I5B	vD4N	RGI4. 5	B%v	R BD	
								9 V U6 S _I5%	RN3BG	GIB55	v5D	R 1D	
								LV U6 S _I5T	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _I5%	5BDCG	NGG35%	1D	C	G	GI0CB	GI0CB	9 V U6 S _I5T	N3BN	RGIBTG	v5DT	R BDT	
								LV U6 S _I5%	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _I5.	5BDCG	NGG34N	1D	C	G	GI0CB	GI0CB	9 V U6 S _I5B	N3BN	RGIBTG	v5D%	R BDT	
								LV U6 S _I5.	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IBG	5BDCG	NGGDNT%	1D	C	G	GI0CB	GI0CB	4. j B0	N5D1.	I5D%4	v5vI0G	R TD	
								9 V U6 S _IBT	RNvI0N4	5D5v%	vG4D5	R TDB	
								LV U6 S _IBG	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IBN	5BDCG	NGGIB5B	1D%	C	G	GI0CB	GI0CB	JURB/N	N3BN	RGIBTG	v5DT	R BDT	
								LV U6 S _IBN	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IBv	5BDCG	NGGIBGG	1DT	C	G	GI0CB	GI0CB	JURB/N	1D51v	RNDTGv	. 5DN	R 1D4	
								9 V U6 S _IB.	IBI0NN	NDNBv	T. D	R TD	
								LV U6 S _IBv	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IB5	5BDCG	NGGIB55	1D%	C	G	GI0CB	GI0CB	JURB/N	N3BN	RGIBTG	v5DT	R BDT	
								LV U6 S _IB5	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IBB	5BDCG	NGG35Nv	1DT	C	G	GI0CB	GI0CB	JURB/N	R4I0vv	v53Bl	N5. IB	R TDG	
								9 V U6 S _IB1	. I5T5	RvI4GI	NT5DN	R 1D4	
								LV U6 S _IBB	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IB1	5BDCG	NGG9TG	1D	C	G	GI0CB	GI0CB	9 V U6 S _IBB	R I511	vDT. N	NTvD	R TDN	
								9 V U6 S _IBT	NGDT. T	I5DNlv	N4TDN	R 1D	
								LV U6 S _IB1	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IBT	5BDCG	NGG9GT	1DB	C	G	GI0CB	GI0CB	9 V U6 S _IBG	NvI0vT	I5DB5%	vG4D	R TDN	
								9 V U6 S _IB1	RNGDT4T	vD%%	N41D	R TD5	
								LV U6 S _IBT	RN3Bl	GIB1%	v5D%	R BD%	
9 V U6 S _IB4	5BDCG	NGGDT14	1D	C	G	GI0CB	GI0CB	9 V U6 S _IB.	N3BN	RGIBTG	v5DT	R BDT	
								LV U6 S _IB4	RN3Bl	GIB1T	v5DT	R BD%	
9 V U6 S _IB.	5BDCG	NGGDTNl	1D%	C	G	GI0CB	GI0CB	9 V U6 S _IBv	BI0vN	RN3G.	%GD5	R 1DN	
								9 V U6 S _IB4	RN3BG	GIBvB	v5DB	R 1DB	
								9 V U6 S _I1G	RN3BG	GIBv1	v5DB	R 1D5	
								LV U6 S _IB.	RN3Bl	GIB1T	v5DT	R BD%	
9 V U6 S _I1G	5BDCG	NGGDT1T	1D	C	G	GI0CB	GI0CB	9 V U6 S _IB.	N3BN	RGIBTG	v5DT	R BDT	
								LV U6 S _I1G	RN3Bl	GIB1T	v5DT	R BD%	
* PO7	N541I0GG	NGlI0GG	GI0G	RI1D4BN	N4I5TT	C	C	4. _N0	RI1D4BN	N4I5TT	v55D	R 1DG	
9 P_~5	N54I0GG	. . DNT	1D0G	C	G	C	C	HV U6 S 9 P_	GI0GG	GI0GG	GI0G	GI0G	
								& 4. _NU					

* 7ndicates a koltage regulated bus (koltage controlled or swing ty3e I achine connected to it)

\# 7ndicates a bus with a load I isI atch opI ore than GDN9 V0

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 Car	8 W	8 Car	ND	8 W	8 Car	p _ 9	f PY	f I a9
34YFp	m5.700	F00.006	6.5	0	0	0	0	8 V B1 S I 2R7	2F3.540	20.m60	m04.7	F00.0	
								34I FB	F3.540	0.m60	m04.7	F00.0	
34YRp	m5.700	F00.006	6.5	0	0	0	0	JB2R/F	2R0.m56	20.R37	m50.7	F00.0	
								34I FB	R0.m56	0.R37	m50.7	F00.0	
34Ymp	m5.700	F00.006	6.5	0	0	0	0	8 V B1 S I 2Rm	2R0.mF4	20.5v4	m50.F	F00.0	
								34I FB	R0.mF4	0.5v4	m50.F	F00.0	
34Y5p	m5.700	F00.006	6.5	0	0	0	0	8 V B1 S I 250	2F3.m65	2F.mRR	m03.F	44.v	
								34I FB	F3.m65	F.mRR	m03.F	44.v	
34I Fp	Fm3.000	F00.00F	0.0	0	0	0	0	PON	vv.R7F	26.m77	mR5.m	244.v	
								HV B1 S 8 PI	2vv.R7F	6.m77	mR5.m	244.v	
34I FB	m5.700	F00.006	6.5	0	0	0	0	34Y5p	2F3.m65	2F.mRR	m03.F	44.v	
								34Ymp	2R0.mF4	20.5v4	m50.F	F00.0	
								34YRp	2R0.m56	20.R37	m50.7	F00.0	
								34YFp	2F3.540	20.m60	m04.7	F00.0	
								8 PI ~m	vv.7F4	R.556	FR4v.3	F00.0	
								& HV B1 S 8 PI					
HV B1 S 8 PI	Fm3.000	F00.00F	0.0	0	0	0.075	0.F5v	34I Fp	vv.R7F	26.m77	mR5.m	244.v	
								34I FB	2vv.m07	6.R0v	mR5.7	244.v	
								& 8 PI ~m					
JB2R/F	m5.700	F00.R4m	6.v	0	0	0	0	8 V B1 S I 2Fv	2FR.4v3	0.000	RF6.6	F00.0	
								8 V B1 S I 2RR	2v.5R7	0.0mv	FRm4	F00.0	
								34YRp	R0.50m	20.0mv	m50.5	F00.0	
JB25/F	m5.700	F0F.547	v.6	0	0	0	0	8 V B1 S I 25F	2F.36R	0.055	m0.v	2F00.0	
								8 V B1 S I 25R	2v.5R4	0.075	FRR.7	F00.0	
								8 V B1 S I 25m	2F.36R	0.057	m0.v	2F00.0	
								8 V B1 S I 255	FF.F7R	20.F5m	F3m4	F00.0	
LV B1 S I 20F	0.640	F0F.6Fv	4.R	F.3v7	0.000	0	0	8 V B1 S I 20F	F.3v7	0.000	F75m7	F00.0	
LV B1 S I 20R	0.640	F0F.7m7	4.R	F.3v7	0.000	0	0	8 V B1 S I 20R	F.3v7	0.000	F755.3	F00.0	
LV B1 S I 20m	0.640	F0F.m4v	4.R	F.3v7	0.000	0	0	8 V B1 S I 20m	F.3v7	0.000	F756.4	F00.0	
LV B1 S I 205	0.640	F0F.m05	4.R	F.3v7	0.000	0	0	8 V B1 S I 205	F.3v7	0.000	F753.m	F00.0	
LV B1 S I 207	0.640	F0F.F66	4.R	F.3v7	0.000	0	0	8 V B1 S I 207	F.3v7	0.000	F770.5	F00.0	
LV B1 S I 206	0.640	F0F.F7m	4.F	F.3v7	0.000	0	0	8 V B1 S I 206	F.3v7	0.000	F770.6	F00.0	
LV B1 S I 20v	0.640	F0F.F0R	4.F	F.3v7	0.000	0	0	8 V B1 S I 20v	F.3v7	0.000	F77F.5	F00.0	
LV B1 S I 203	0.640	F0F.067	4.F	F.3v7	0.000	0	0	8 V B1 S I 203	F.3v7	0.000	F77R.0	F00.0	
LV B1 S I 204	0.640	F00.4F6	4.F	F.3v7	0.000	0	0	8 V B1 S I 204	F.3v7	0.000	F775.m	F00.0	
LV B1 S I 2F0	0.640	F00.3m6	4.0	F.3v7	0.000	0	0	8 V B1 S I 2F0	F.3v7	0.000	F777.7	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 Car	8 W	8 Car	ND	8 W	8 Car	p _ 9	f PY	f I a9
LV B1 S I 2Fm	0.640	F0F.R4R	4.F	F.3v7	0.000	0	0	8 V B1 S I 2Fm	F.3v7	0.000	F753.7	F00.0	
LV B1 S I 2F5	0.640	F0F.Rn6	4.F	F.3v7	0.000	0	0	8 V B1 S I 2F5	F.3v7	0.000	F754.5	F00.0	
LV B1 S I 2F7	0.640	F00.476	4.F	F.3v7	0.000	0	0	8 V B1 S I 2F7	F.3v7	0.000	F77m6	F00.0	
LV B1 S I 2F6	0.640	F0F.RF7	4.F	F.3v7	0.000	0	0	8 V B1 S I 2F6	F.3v7	0.000	F754.v	F00.0	
LV B1 S I 2Fv	0.640	F00.v5v	4.0	F.3v7	0.000	0	0	8 V B1 S I 2Fv	F.3v7	0.000	F776.4	F00.0	
LV B1 S I 2R0	0.640	F0F.04F	4.0	F.3v7	0.000	0	0	8 V B1 S I 2R0	F.3v7	0.000	F77F.6	F00.0	
LV B1 S I 2RF	0.640	F00.474	3.4	F.3v7	0.000	0	0	8 V B1 S I 2RF	F.3v7	0.000	F77m6	F00.0	
LV B1 S I 2RR	0.640	F00.375	3.4	F.3v7	0.000	0	0	8 V B1 S I 2RR	F.3v7	0.000	F777.R	F00.0	
LV B1 S I 2Rm	0.640	F00.v43	4.0	F.3v7	0.000	0	0	8 V B1 S I 2Rm	F.3v7	0.000	F776.F	F00.0	
LV B1 S I 2R5	0.640	F00.7n4	3.3	F.3v7	0.000	0	0	8 V B1 S I 2R5	F.3v7	0.000	F760.F	F00.0	
LV B1 S I 2R7	0.640	F00.7FF	3.3	F.3v7	0.000	0	0	8 V B1 S I 2R7	F.3v7	0.000	F760.7	F00.0	
LV B1 S I 2R6	0.640	F0F.035	4.F	F.3v7	0.000	0	0	8 V B1 S I 2R6	F.3v7	0.000	F77F.v	F00.0	
LV B1 S I 2Rv	0.640	F0F.0F3	4.F	F.3v7	0.000	0	0	8 V B1 S I 2Rv	F.3v7	0.000	F77R.v	F00.0	
LV B1 S I 2R3	0.640	F00.34F	4.F	F.3v7	0.000	0	0	8 V B1 S I 2R3	F.3v7	0.000	F775.v	F00.0	
LV B1 S I 2R4	0.640	F0F.004	4.0	F.3v7	0.000	0	0	8 V B1 S I 2R4	F.3v7	0.000	F77R.3	F00.0	
LV B1 S I 2nF	0.640	F0F.n44	4.m	F.3v7	0.000	0	0	8 V B1 S I 2nF	F.3v7	0.000	F756.4	F00.0	
LV B1 S I 2nR	0.640	F0F.R06	4.m	F.3v7	0.000	0	0	8 V B1 S I 2nR	F.3v7	0.000	F754.3	F00.0	
LV B1 S I 2nm	0.640	F0F.F03	4.m	F.3v7	0.000	0	0	8 V B1 S I 2nm	F.3v7	0.000	F77F.m	F00.0	
LV B1 S I 2n5	0.640	F0F.RR7	4.m	F.3v7	0.000	0	0	8 V B1 S I 2n5	F.3v7	0.000	F754.7	F00.0	
LV B1 S I 2n6	0.640	F0F.5v0	4.m	F.3v7	0.000	0	0	8 V B1 S I 2n6	F.3v7	0.000	F757.3	F00.0	
LV B1 S I 2nv	0.640	F0F.7F3	4.m	F.3v7	0.000	0	0	8 V B1 S I 2nv	F.3v7	0.000	F757.F	F00.0	
LV B1 S I 2n4	0.640	F0F.5n6	4.m	F.3v7	0.000	0	0	8 V B1 S I 2n4	F.3v7	0.000	F756.m	F00.0	
LV B1 S I 250	0.640	F0F.n67	4.7	F.3v7	0.000	0	0	8 V B1 S I 250	F.3v7	0.000	F75v.5	F00.0	
LV B1 S I 25F	0.640	F0F.343	4.3	F.3v7	0.000	0	0	8 V B1 S I 25F	F.3v7	0.000	F7n4.m	F00.0	
LV B1 S I 25R	0.640	F0F.354	4.3	F.3v7	0.000	0	0	8 V B1 S I 25R	F.3v7	0.000	F750.0	F00.0	
LV B1 S I 25m	0.640	F0F.346	4.3	F.3v7	0.000	0	0	8 V B1 S I 25m	F.3v7	0.000	F7n4.m	F00.0	
LV B1 S I 255	0.640	F0F.634	4.v	F.3v7	0.000	0	0	8 V B1 S I 255	F.3v7	0.000	F75R.5	F00.0	
LV B1 S I 257	0.640	F0F.73m	4.v	F.3v7	0.000	0	0	8 V B1 S I 257	F.3v7	0.000	F755.F	F00.0	
LV B1 S I 256	0.640	F0F.57v	4.6	F.3v7	0.000	0	0	8 V B1 S I 256	F.3v7	0.000	F756.0	F00.0	
LV B1 S I 253	0.640	F0RR5v	4.4	F.3v7	0.000	0	0	8 V B1 S I 253	F.3v7	0.000	F7n5.0	F00.0	
LV B1 S I 254	0.640	F0RF35	4.4	F.3v7	0.000	0	0	8 V B1 S I 254	F.3v7	0.000	F7n7.0	F00.0	
LV B1 S I 270	0.640	F0RR57	4.4	F.3v7	0.000	0	0	8 V B1 S I 270	F.3v7	0.000	F7n5.F	F00.0	
8 V B1 S I 20F	n5.700	F0F.R67	v.F	0	0	0.005	0.005	8 V B1 S I 20R	F.36m	20.0v5	n0.3	244.4	
								LV B1 S I 20F	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 20R	n5.700	F0F.F3m	v.F	0	0	0.005	0.005	8 V B1 S I 20F	2F.36F	0.0Rv	n0.3	2F00.0	
								8 V B1 S I 20m	mvRm	20.F0R	6F.6	2F00.0	
								LV B1 S I 20R	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 20m	n5.700	F0F.055	v.0	0	0	0.005	0.005	8 V B1 S I 20R	2mvF3	0.06R	6F.6	2F00.0	
								8 V B1 S I 205	7.73F	20.Fmv	4R.7	2F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 Car	8 W	8 Car	ND	8 W	8 Car	p _ 9	f PY	f I a9
								LV B1 S I 20m	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 205	n5.700	F00.47R	v.0	0	0	0.005	0.005	8 V B1 S I 20m	27.7v6	0.04R	4R.5	2F00.0	
								8 V B1 S I 207	v.5m3	20.F6v	FRmm	2F00.0	
								LV B1 S I 205	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 207	n5.700	F00.3F5	v.0	0	0	0.005	0.005	8 V B1 S I 205	2v.5R3	0.FF3	FRmm	2F00.0	
								8 V B1 S I 203	4.R40	20.F4m	F75.m	2F00.0	
								LV B1 S I 207	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 206	n5.700	F00.300	6.4	0	0	0.005	0.005	8 V B1 S I 20v	F.36R	20.0v7	n0.4	244.4	
								LV B1 S I 206	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 20v	n5.700	F00.v54	6.4	0	0	0.005	0.005	8 V B1 S I 206	2F.36R	0.056	n0.4	2F00.0	
								8 V B1 S I 2F6	2F.360	0.0F0	n0.4	F00.0	
								8 V B1 S I 2F7	7.735	20.FnF	4R.3	2F00.0	
								LV B1 S I 20v	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 203	n5.700	F00.vFR	6.4	0	0	0.005	0.005	8 V B1 S I 207	24.R3F	0.F0R	F75.R	F00.0	
								8 V B1 S I 204	FF.F5m	20.Fvv	F37.R	2F00.0	
								LV B1 S I 203	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 204	n5.700	F00.76R	6.4	0	0	0.005	0.005	8 V B1 S I 203	2FF.FRv	0.0v0	F37.R	F00.0	
								8 V B1 S I 2F0	FR.434	20.F57	RF6.R	F00.0	
								LV B1 S I 204	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2F0	n5.700	F00.53m	6.3	0	0	0.005	0.005	8 V B1 S I 204	2FR.4v4	0.067	RF6.R	F00.0	
								8 V B1 S I 2R7	F5.35F	20.F50	R5v.R	F00.0	
								LV B1 S I 2F0	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2Fm	n5.700	F00.4m4	6.4	0	0	0.005	0.005	8 V B1 S I 2F5	F.36R	20.0v7	n0.4	244.4	
								LV B1 S I 2Fm	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2F5	n5.700	F00.33m	6.4	0	0	0.005	0.005	8 V B1 S I 2Fm	2F.36F	0.05m	n0.4	2F00.0	
								8 V B1 S I 2F7	mvR5	20.FF3	6F.3	2F00.0	
								LV B1 S I 2F5	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2F7	n5.700	F00.60m	6.4	0	0	0.005	0.005	8 V B1 S I 20v	27.7v6	0.060	4R.3	F00.0	
								8 V B1 S I 2F5	2mvF5	0.0m4	6F.3	F00.0	
								8 V B1 S I 2Fv	FF.F7R	20.Fv5	F37.7	2F00.0	
								LV B1 S I 2F7	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2F6	n5.700	F00.36m	6.4	0	0	0.005	0.005	8 V B1 S I 20v	F.36R	20.0v7	n0.4	244.4	
								LV B1 S I 2F6	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2Fv	n5.700	F00.m45	6.3	0	0	0.005	0.005	JB2R/F	FR.44F	20.F0R	RF6.6	F00.0	
								8 V B1 S I 2F7	2FF.FR4	0.0R6	F37.7	F00.0	
								LV B1 S I 2Fv	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2R0	n5.700	F00.vm3	6.3	0	0	0.005	0.005	8 V B1 S I 2RF	F.36R	20.0v7	nF.0	244.4	
								LV B1 S I 2R0	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2RF	n5.700	F00.606	6.3	0	0	0.005	0.005	8 V B1 S I 2R0	2F.360	0.000	n0.4	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 Car	8 W	8 Car	ND	8 W	8 Car	p _ 9	f PY	f I a9
								8 V B1 S I 2RR	mvRR	20.0v7	6F.4	2F00.0	
								LV B1 S I 2RF	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2RR	m5.700	F00.700	6.v	0	0	0.005	0.005	JB2R/F	v.55F	20.F03	FRm4	2F00.0	
								8 V B1 S I 2RF	2mvF4	0.056	6F.4	F00.0	
								8 V B1 S I 2R4	2F.360	20.0Fm	nF.0	F00.0	
								LV B1 S I 2RR	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2Rm	m5.700	F00.555	6.3	0	0	0.005	0.005	34Ymp	R0.506	20.0FF	m50.0	F00.0	
								8 V B1 S I 2R3	2F3.755	20.067	n04.0	F00.0	
								LV B1 S I 2Rm	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2R5	m5.700	F00.F37	6.6	0	0	0.005	0.005	8 V B1 S I 2R7	F.36R	20.0v6	nF.F	244.4	
								LV B1 S I 2R5	2F.36v	0.0vR	nF.R	244.4	
8 V B1 S I 2R7	m5.700	F00.F76	6.6	0	0	0.005	0.005	34YFp	F3.7F3	0.F6v	n04.5	F00.0	
								8 V B1 S I 2F0	2F5.v4m	20.Rv6	R5v.R	F00.0	
								8 V B1 S I 2R5	2F.36R	0.0mm	nF.F	2F00.0	
								LV B1 S I 2R7	2F.36v	0.0vR	nF.R	244.4	
8 V B1 S I 2R6	m5.700	F00.vmF	6.4	0	0	0.005	0.005	8 V B1 S I 2Rv	F.36R	20.0v7	nF.0	244.4	
								LV B1 S I 2R6	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2Rv	m5.700	F00.665	6.4	0	0	0.005	0.005	8 V B1 S I 2R6	2F.36F	0.0mv	n0.4	2F00.0	
								8 V B1 S I 2R3	mvR5	20.FFm	6F.4	2F00.0	
								LV B1 S I 2Rv	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2R3	m5.700	F00.7m3	6.4	0	0	0.005	0.005	8 V B1 S I 2Rm	F3.76F	20.060	n04.0	F00.0	
								8 V B1 S I 2Rv	2mvF4	0.0vv	6F.4	2F00.0	
								8 V B1 S I 2mm	2FR.430	20.04m	RF6.F	F00.0	
								LV B1 S I 2R3	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2R4	m5.700	F00.676	6.3	0	0	0.005	0.005	8 V B1 S I 2RR	F.36R	20.0v7	nF.0	244.4	
								LV B1 S I 2R4	2F.36v	0.0vR	nF.F	244.4	
8 V B1 S I 2mF	m5.700	F0F.05v	v.F	0	0	0.005	0.005	8 V B1 S I 2mR	F.36R	20.0v7	n0.4	244.4	
								LV B1 S I 2mF	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 2mR	m5.700	F00.37m	v.F	0	0	0.005	0.005	8 V B1 S I 2mF	2F.374	20.0n6	n0.4	F00.0	
								8 V B1 S I 2mm	mvRF	20.0m4	6F.3	F00.0	
								LV B1 S I 2mR	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2mm	m5.700	F00.v77	v.F	0	0	0.005	0.005	8 V B1 S I 2R3	Fm003	20.FR6	RF6.F	F00.0	
								8 V B1 S I 2mR	2mvF3	0.0FF	6F.3	F00.0	
								8 V B1 S I 2m5	2v.5Rv	0.050	FRm5	F00.0	
								LV B1 S I 2mm	2F.36v	0.0vF	nF.0	244.4	
8 V B1 S I 2m5	m5.700	F00.3vR	v.F	0	0	0.005	0.005	8 V B1 S I 2mm	v.5m6	20.03F	FRm5	F00.0	
								8 V B1 S I 2m6	2mvF7	0.07R	6F.6	F00.0	
								8 V B1 S I 2m4	2F.374	20.056	n0.3	F00.0	
								LV B1 S I 2m5	2F.36v	0.0vF	nF.0	244.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	MV	f 8 ag.	p ng.	8 W	8 Car	8 W	8 Car	ND	8 W	8 Car	p _ 9	f PY	f I a9
8 V B1 S I 2n6	n5.700	F0F.FFv	v.F	0	0	0.005	0.005	8 V B1 S I 2n5	mvR5	20.FRF	6F.v	244.4	
								8 V B1 S I 2nv	2F.36R	0.05v	n0.3	2F00.0	
								LV B1 S I 2n6	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 2nv	n5.700	F0F.F66	v.F	0	0	0.005	0.005	8 V B1 S I 2n6	F.36R	20.0v7	n0.3	244.4	
								LV B1 S I 2nv	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 2n4	n5.700	F0F.03m	v.F	0	0	0.005	0.005	8 V B1 S I 2n5	F.36R	20.0v7	n0.4	244.4	
								LV B1 S I 2n4	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 250	n5.700	F0F.0FR	v.m	0	0	0.005	0.005	34Y5p	F3.7m3	0.075	n0v.F	F00.0	
								8 V B1 S I 256	2F6.6v7	20.FR4	Rv6.m	F00.0	
								LV B1 S I 250	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 25F	n5.700	F0F.756	v.6	0	0	0.005	0.005	JB25/F	F.36m	20.0v5	n0.v	244.4	
								LV B1 S I 25F	2F.36v	0.0v0	n0.3	244.4	
8 V B1 S I 25R	n5.700	F0F.54v	v.6	0	0	0.005	0.005	JB25/F	v.5R4	20.075	FRR.7	F00.0	
								8 V B1 S I 254	27.76v	20.0R0	4F.3	F00.0	
								LV B1 S I 25R	2F.36v	0.0v0	n0.3	244.4	
8 V B1 S I 25m	n5.700	F0F.757	v.6	0	0	0.005	0.005	JB25/F	F.36m	20.0v5	n0.v	244.4	
								LV B1 S I 25m	2F.36v	0.0v0	n0.3	244.4	
8 V B1 S I 255	n5.700	F0F.mnv	v.6	0	0	0.005	0.005	JB25/F	2FF.Fn7	0.0Rv	F3m4	F00.0	
								8 V B1 S I 257	FR.44v	20.F0R	RF5.6	F00.0	
								LV B1 S I 255	2F.36v	0.0vF	n0.3	244.4	
8 V B1 S I 257	n5.700	F0F.RnF	v.7	0	0	0.005	0.005	8 V B1 S I 255	2FR.435	20.003	RF5.6	F00.0	
								8 V B1 S I 256	F5.356	20.066	R57.5	F00.0	
								LV B1 S I 257	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 256	n5.700	F0F.F07	v.5	0	0	0.005	0.005	8 V B1 S I 250	F6.640	0.0R6	Rv6.m	F00.0	
								8 V B1 S I 257	2F5.3R3	20.F0F	R57.5	F00.0	
								LV B1 S I 256	2F.36v	0.0vF	n0.4	244.4	
8 V B1 S I 253	n5.700	F0F.346	v.v	0	0	0.005	0.005	8 V B1 S I 254	F.36m	20.0v5	n0.6	244.4	
								LV B1 S I 253	2F.36v	0.0v0	n0.v	244.4	
8 V B1 S I 254	n5.700	F0F.3nn	v.v	0	0	0.005	0.005	8 V B1 S I 25R	7.737	20.F53	4F.3	2F00.0	
								8 V B1 S I 253	2F.36F	0.0n6	n0.6	2F00.0	
								8 V B1 S I 270	2F.36F	0.0n3	n0.6	2F00.0	
								LV B1 S I 254	2F.36v	0.0v0	n0.v	244.4	
8 V B1 S I 270	n5.700	F0F.345	v.v	0	0	0.005	0.005	8 V B1 S I 254	F.36m	20.0v5	n0.6	244.4	
								LV B1 S I 270	2F.36v	0.0v0	n0.v	244.4	
* PON	Fn3.000	F00.000	0.0	2vv.R70	6.n60	0	0	34I Fp	2vv.R70	6.n60	nR5.m	244.v	
8 PI ~m	Fn300	44.465	v.0	0	0	0	0	HV B1 S 8 PI & 34I FB	0.000	0.000	0.0	0.0	

* Nidicates a Coltage regulated bus (Coltage controlled or swing ty9e _ achine connected to it)

Nidicates a bus with a load _ is_ atch oA_ ore than 0.F 8 Vp

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
51- N	1B6DD	NDDD6N	WW	D	D	D	D	3 V UGS _%6	%5TB6W	%TI 5	I I 5Tk	1NN	
								51_NU	N5TB6W	5TI 5	I I 5Tk	1NN	
51- f.	1B6DD	NDDD6N	WW	D	D	D	D	JU%/N	%DIDS	%TDWB	I kf"D	1NI	
								51_NU	fDIDS	1TDWB	I kf"D	1NI	
51- I.	1B6DD	NDDD6N	WW	D	D	D	D	3 V UGS _%I	%DIkk	%Tf6N	I kf"5	1ND	
								51_NU	fDIkk	1Tf6N	I kf"5	1ND	
51- B.	1B6DD	NDDD6N	WW	D	D	D	D	3 V UGS _%BD	%5TDI	%Tf5I	I BITI	51Tf	
								51_NU	N5TDI	1Tf5I	I BITI	51Tf	
51_N	N.5TDDD	NDDDDk	DD	D	D	D	D	POv	kkTDIf	f6TI16	I I 1Tf	16"D	
								HV UGS 3 P_	%kkTDIf	%66TI16	I I 1Tf	16"D	
51_NU	1B6DD	NDDD6N	WW	D	D	D	D	51- B.	%5TDI	%Tf5I	I BITI	51Tf	
								51- I.	%DIkk	%Tf6N	I kf"5	1ND	
								51- f.	%DIDS	%TDWB	I kf"D	1NI	
								51- N	%5TB6W	%TI 5	I I 5Tk	1NN	
								3 P_~I	kkTBB	I 6TI1W	NBfW5	1Dk	
								& HV UGS 3 P_					
HV UGS 3 P_	N.5TDDD	NDDDDk	DD	D	D	DD6B	DNBk	51_N	kkTDIf	f6TI16	I I 1Tf	16"D	
								51_NU	%kkTD56	%66B5f	I I 1TW	1BII	6TDDD
								& 3 P_~I					
JU%/N	1B6DD	NDD6B5	W5	D	D	D	D	3 V UGS _%k	%NfTIWD	%6T61W	f 16"D	1N5	
								3 V UGS _%f	%kTBNW	%TNWf	N.BIf	1f"D	
								51- f.	fDIkk	5Tk61	I WTN	1NII	
JU%B/N	1B6DD	NDfTBkW	kT5	D	D	D	D	3 V UGS _%BN	%N5WD	%Dk6k	I f"5	1f"W	
								3 V UGS _%Bf	%kTBff	%TN6B	N.NNk	1f"D	
								3 V UGS _%BI	%N5WD	%Dk6W	I f"5	1f"W	
								3 V UGS _%BB	NNNNBI	BTWW5	N1kTI	1f"f	
LV UGS _%DN	DWD	NDTk5N	1"D	N5k6	D5ND	D	D	3 V UGS _%DN	N5k6	D5ND	NWBWB	1N5	
LV UGS _%Df	DWD	NDTWB	1"D	N5k6	D5ND	D	D	3 V UGS _%Df	N5k6	D5ND	NWkT5	1N5	
LV UGS _%DI	DWD	NDT6B6	1"D	N5k6	D5ND	D	D	3 V UGS _%DI	N5k6	D5ND	NW6DIf	1N5	
LV UGS _%DB	DWD	NDTBI5	1"D	N5k6	D5ND	D	D	3 V UGS _%DB	N5k6	D5ND	NW6NII	1N5	
LV UGS _%D6	DWD	NDTfk1	1"N	N5k6	D5ND	D	D	3 V UGS _%D6	N5k6	D5ND	NW6BIB	1N5	
LV UGS _%DW	DWD	NDTN1B	1"D	N5k6	D5ND	D	D	3 V UGS _%DW	N5k6	D5ND	NW66T5	1N5	
LV UGS _%Dk	DWD	NDTN1	1"D	N5k6	D5ND	D	D	3 V UGS _%Dk	N5k6	D5ND	NW6Wk	1N5	
LV UGS _%D5	DWD	NDTNBB	1"D	N5k6	D5ND	D	D	3 V UGS _%D5	N5k6	D5ND	NW6WW	1N5	
LV UGS _%DI	DWD	NDfTIB6	1"D	N5k6	D5ND	D	D	3 V UGS _%DI	N5k6	D5ND	NW61T5	1N5	
LV UGS _%DD	DWD	NDfT5f1	1"D	N5k6	D5ND	D	D	3 V UGS _%DD	N5k6	D5ND	NWWNk	1N5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
LV UGS _%N	DWD	NDTT1D	5Tl	N5k6	D5ND	E	E	3 V UGS _%N	N5k6	D5ND	NW61TW	1N5	
LV UGS _%B	DWD	NDTTkD	5Tl	N5k6	D5ND	E	E	3 V UGS _%B	N5k6	D5ND	NW6BTW	1N5	
LV UGS _%6	DWD	NDTTkN	1TD	N5k6	D5ND	E	E	3 V UGS _%6	N5k6	D5ND	NW61TB	1N5	
LV UGS _%W	DWD	NDTTWN	1TD	N5k6	D5ND	E	E	3 V UGS _%W	N5k6	D5ND	NW6BTk	1N5	
LV UGS _%k	DWD	NDTTWf	5Tl	N5k6	D5ND	E	E	3 V UGS _%k	N5k6	D5ND	NWWTl	1N5	
LV UGS _%D	DWD	NDTTD11	5Tl	N5k6	D5ND	E	E	3 V UGS _%D	N5k6	D5ND	NW65Tl	1N5	
LV UGS _%N	DWD	NDT515	5Tl	N5k6	D5ND	E	E	3 V UGS _%N	N5k6	D5ND	NWWDTW	1N5	
LV UGS _%f	DWD	NDTk56	5Tl	N5k6	D5ND	E	E	3 V UGS _%f	N5k6	D5ND	NWWTB	1N5	
LV UGS _%I	DWD	NDTk11	1TD	N5k6	D5ND	E	E	3 V UGS _%I	N5k6	D5ND	NWWTN	1N5	
LV UGS _%B	DWD	NDTTB6	5T5	N5k6	D5ND	E	E	3 V UGS _%B	N5k6	D5ND	NWWT5	1N5	
LV UGS _%6	DWD	NDTTNf	5T5	N5k6	D5ND	E	E	3 V UGS _%6	N5k6	D5ND	NWkDN	1N5	
LV UGS _%W	DWD	NDTNW6	1TD	N5k6	D5ND	E	E	3 V UGS _%W	N5k6	D5ND	NW6WT	1N5	
LV UGS _%k	DWD	NDTDD16	1TD	N5k6	D5ND	E	E	3 V UGS _%k	N5k6	D5ND	NW6kTB	1N5	
LV UGS _%5	DWD	NDTT161	1TN	N5k6	D5ND	E	E	3 V UGS _%5	N5k6	D5ND	NW61TW	1N5	
LV UGS _%1	DWD	NDTT16N	5Tl	N5k6	D5ND	E	E	3 V UGS _%1	N5k6	D5ND	NW61Tk	1N5	
LV UGS _%N	DWD	NDT65W	1TN	N5k6	D5ND	E	E	3 V UGS _%N	N5k6	D5ND	NWBlT5	1N5	
LV UGS _%f	DWD	NDTTk1	1TN	N5k6	D5ND	E	E	3 V UGS _%f	N5k6	D5ND	NW6fT5	1N5	
LV UGS _%I	DWD	NDTTk6	1TN	N5k6	D5ND	E	E	3 V UGS _%I	N5k6	D5ND	NW6BT5	1N5	
LV UGS _%B	DWD	NDTBD1	1TN	N5k6	D5ND	E	E	3 V UGS _%B	N5k6	D5ND	NW6fTl	1N5	
LV UGS _%W	DWD	NDTWkN	1TN	N5k6	D5ND	E	E	3 V UGS _%W	N5k6	D5ND	NWBSTl	1N5	
LV UGS _%k	DWD	NDTkfl	1TN	N5k6	D5ND	E	E	3 V UGS _%k	N5k6	D5ND	NWBkTl	1N5	
LV UGS _%1	DWD	NDTWW6	1TN	N5k6	D5ND	E	E	3 V UGS _%1	N5k6	D5ND	NWBSTk	1N5	
LV UGS _%BD	DWD	NDTk1N	1Tl	N5k6	D5ND	E	E	3 V UGS _%BD	N5k6	D5ND	NWBkTl	1N5	
LV UGS _%BN	DWD	NDBBBlB	1T5	N5k6	D5ND	E	E	3 V UGS _%BN	N5k6	D5ND	NWW6Tl	1N5	
LV UGS _%Bf	DWD	NDBBBBf	1T5	N5k6	D5ND	E	E	3 V UGS _%Bf	N5k6	D5ND	NWWWD	1N5	
LV UGS _%BI	DWD	NDBBBll	1T5	N5k6	D5ND	E	E	3 V UGS _%BI	N5k6	D5ND	NWW6Tl	1N5	
LV UGS _%BB	DWD	NDBBf1D	1T5	N5k6	D5ND	E	E	3 V UGS _%BB	N5k6	D5ND	NWW1Tl	1N5	
LV UGS _%B6	DWD	NDBBDkk	1TB	N5k6	D5ND	E	E	3 V UGS _%B6	N5k6	D5ND	NWBNTk	1N5	
LV UGS _%BW	DWD	NDT5kk	1TB	N5k6	D5ND	E	E	3 V UGS _%BW	N5k6	D5ND	NWBBTl	1N5	
LV UGS _%B5	DWD	NDB551B	1T5	N5k6	D5ND	E	E	3 V UGS _%B5	N5k6	D5ND	NWW1TD	1N5	
LV UGS _%Bl	DWD	NDB55fk	1T5	N5k6	D5ND	E	E	3 V UGS _%Bl	N5k6	D5ND	NWWDD	1N5	
LV UGS _%D	DWD	NDB551f	1T5	N5k6	D5ND	E	E	3 V UGS _%D	N5k6	D5ND	NWW1TD	1N5	
3 V UGS _%5N	1B5LD	NDN55DW	kTD	E	D	DDDB	DDDB	3 V UGS _%5f	N5WN	DRfW	If5	11T	
								LV UGS _%5N	%N5WW	%5Rk1D	If1l	11TN	
3 V UGS _%5f	1B5LD	NDNkNk	kTD	E	D	DDDB	DDDB	3 V UGS _%5N	%N5WD	%5RkkB	I1TN	1fT	
								3 V UGS _%5I	ITkfN	NB11	WWD	1f5	
								LV UGS _%5f	%N5WW	%5Rkf1	I1TD	11TN	
3 V UGS _%5I	1B5LD	NDN5WW	kTD	E	D	DDDB	DDDB	3 V UGS _%5f	%TkN5	%N511	WWl	1fTB	
								3 V UGS _%5B	65kW	fTWB	11Tl	1fTk	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								LV UGS _%l	%N5WW	%DRf1	I I TD	1I TN	
3 V UGS _%lB	I B56DD	NDNB6k	kTD	E	D	DDDB	DDDB	3 V UGS _%l	%6T6kN	%TTND	11T6	1fTB	
								3 V UGS _%l6	kTBlf	I TDI6	NTfTB	1fTW	
								LV UGS _%lB	%N5WW	%DRf1	I I TD	1I TN	
3 V UGS _%l6	I B56DD	NDNTf16	kTD	E	D	DDDB	DDDB	3 V UGS _%lB	%TBfD	%TD5B	NTfTk	1fTT	
								3 V UGS _%l5	1Tf5N	I T5DI	NW6Tk	1fT5	
								LV UGS _%l6	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%lW	I B56DD	NDNTfD5	WII	E	D	DDDB	DDDB	3 V UGS _%lk	N5WN	DRf6	I I TD	1I Tf	
								LV UGS _%lW	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%lk	I B56DD	NDNN6f	WII	E	D	DDDB	DDDB	3 V UGS _%lW	%N5WD	%DRk66	I I Tf	1fTk	
								3 V UGS _%NW	%N5661	%DRk1N	I I TB	1fTD	
								3 V UGS _%l6	6T65D	fTTkD	11Tk	1fTW	
								LV UGS _%lk	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%l5	I B56DD	NDNN65	kTD	E	D	DDDB	DDDB	3 V UGS _%l6	%TTkD	%T511	NWWB	1fTT	
								3 V UGS _%Dl	NNNNf	BTWTB	NI1TB	1fTT	
								LV UGS _%l5	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%Dl	I B56DD	NDDll66	kTD	E	D	DDDB	DDDB	3 V UGS _%l5	%NNNNf	%RRk1D	fDDDf	1fTD	
								3 V UGS _%ND	NfTlkB	6TB6B	f I I Tl	1fTT	
								LV UGS _%Dl	%N5W6	%DRf5	I I Tf	1I Tf	
3 V UGS _%ND	I B56DD	NDD51k	WII	E	D	DDDB	DDDB	3 V UGS _%Dl	%NfTlWN	%6T61B	f I I Tl	1fTD	
								3 V UGS _%l6	NB5fI	WTf65	fWkTD	1fTN	
								LV UGS _%ND	%N5W6	%DRf5	I I Tf	1I Tf	
3 V UGS _%Nl	I B56DD	NDNTBk	WII	E	D	DDDB	DDDB	3 V UGS _%NB	N5WN	DRf6	I I TD	1I Tf	
								LV UGS _%Nl	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%NB	I B56DD	NDNTf5W	WII	E	D	DDDB	DDDB	3 V UGS _%Nl	%N5WD	%DRk65	I I Tf	1fTW	
								3 V UGS _%l6	I TkfN	NB5I	WWf	1fTl	
								LV UGS _%NB	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%l6	I B56DD	NDDll5N	WII	E	D	DDDB	DDDB	3 V UGS _%lk	%6T6kN	%TTBN	NDDBN	1fTT	
								3 V UGS _%NB	%TkDI	%N5WN	WWk	1fTT	
								3 V UGS _%Nk	NNNNBf	BTWTW	NI1Tl	1fTB	
								LV UGS _%l6	%N5W6	%DRf5	I I Tf	1I Tf	
3 V UGS _%lW	I B56DD	NDNTfkW	WII	E	D	DDDB	DDDB	3 V UGS _%lk	N5WN	DRf6	I I TD	1I Tf	
								LV UGS _%lW	%N5WW	%DRf1	I I TN	1I TN	
3 V UGS _%lk	I B56DD	NDDlW5	WII	E	D	DDDB	DDDB	JU%/N	NfTlkW	6TBlk	fIBTf	1fTN	
								3 V UGS _%l6	%NNNN6	%RRkkI	fDNTD	1NTl	
								LV UGS _%lk	%N5W6	%DRf5	I I Tf	1I Tf	
3 V UGS _%lD	I B56DD	NDNTD6N	W5	E	D	DDDB	DDDB	3 V UGS _%lN	N5WN	DRf6	I I TN	1I Tf	
								LV UGS _%lD	%N5WW	%DRf5	I I Tf	1I Tf	
3 V UGS _%lN	I B56DD	NDDlTDk	W5	E	D	DDDB	DDDB	3 V UGS _%lD	%N565	%D5DD	I I TW	1NT5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								3 V UGS _%f	I Tkf D	N5f 6	WWk	1f T5	
								LV UGS _%N	%N5V6	%Dkf 5	I I Tf	l I Tf	
3 V UGS _%f	I B5LDD	NDDk1f	W5	L	D	DDDB	DDDB	JU%/N	k BI B	I TDI f	N I Tk	1f Tf	
								3 V UGS _%N	%TkN6	%N56B	WWl	1f Tf	
								3 V UGS _%1	%N565	%D5N l	I I Tk	l NTW	
								LV UGS _%f	%N5V6	%Dkf 5	I I Tf	l I Tf	
3 V UGS _%I	I B5LDD	NDD5Dk	Wl	L	D	DDDB	DDDB	51- I .	f DI 5D	5Tk5k	I W5TB	l N5	
								3 V UGS _%5	%N5T6N l	%5TDW	I I 6Tf	l Nk	
								LV UGS _%I	%N5V6	%Dkf 5	I I Tf	l I Tf	
3 V UGS _%B	I B5LDD	NDDI BB	Wk	L	D	DDDB	DDDB	3 V UGS _%6	N5VW	Dkf B	I I Tf	l I Tf	
								LV UGS _%B	%N5V6	%Dkf k	I I TB	l I Tf	
3 V UGS _%6	I B5LDD	NDDI ND	Wk	L	D	DDDB	DDDB	51- N	N5TB55	5TN6B	I I k TN	l N5	
								3 V UGS _%D	%N5BkVW	%WWWB	f kDI	l NTN	
								3 V UGS _%B	%N5VW	%Dkf WV	I I TW	1f T5	
								LV UGS _%6	%N5V6	%Dkf k	I I TB	l I Tf	
3 V UGS _%W	I B5LDD	NDNNk1	k D	L	D	DDDB	DDDB	3 V UGS _%k	N5VW	Dkf 6	I I TD	l I Tf	
								LV UGS _%W	%N5VW	%Dkf 1	I I TN	l I TN	
3 V UGS _%k	I B5LDD	NDNNDk	k D	L	D	DDDB	DDDB	3 V UGS _%W	%N5WD	%Dkf W	I I Tf	1f T5	
								3 V UGS _%5	I Tkf N	NB55	WWl	1f Tl	
								LV UGS _%k	%N5VW	%Dkf 5	I I TN	l I TN	
3 V UGS _%5	I B5LDD	NDDI W	k D	L	D	DDDB	DDDB	3 V UGS _%I	N5T611	k TI Bf	I I BI	l N Tl	
								3 V UGS _%k	%TkNW	%N5f I	WWW	1f T5	
								3 V UGS _%I	%NTl W	%TW6	f I BR	l NTW	
								LV UGS _%5	%N5V6	%Dkf 5	I I Tf	l I Tf	
3 V UGS _%1	I B5LDD	NDDI l WN	W5	L	D	DDDB	DDDB	3 V UGS _%f	N5VN	Dkf B	I I TN	l I Tf	
								LV UGS _%1	%N5V6	%Dkf 5	I I Tf	l I Tf	
3 V UGS _%N	I B5LDD	NDNWD5	k TN	L	D	DDDB	DDDB	3 V UGS _%f	N5VN	Dkf 6	I f Tl	l I Tf	
								LV UGS _%N	%N5VW	%Dkf 1	I I TD	l I TN	
3 V UGS _%f	I B5LDD	NDNT l k	k TN	L	D	DDDB	DDDB	3 V UGS _%N	%N56k	%D515	I I TW	l NTf	
								3 V UGS _%I	I TkNl	N5W	WWW	1f Tf	
								LV UGS _%f	%N5VW	%Dkf 1	I I TN	l I TN	
3 V UGS _%I	I B5LDD	NDNTf 1N	k TN	L	D	DDDB	DDDB	3 V UGS _%5	NTl 16	6TBk5	f I I TD	1f TN	
								3 V UGS _%f	%TkNB	%N561D	WW5	l NTl	
								3 V UGS _%B	%TBNl	%TNW	N I Tf	1f TD	
								LV UGS _%I	%N5VW	%Dkf 1	I I TN	l I TN	
3 V UGS _%B	I B5LDD	NDNBf 5	k TN	L	D	DDDB	DDDB	3 V UGS _%I	k BI f 1	I TNI f	N I TD	1f Tf	
								3 V UGS _%W	%TkNN	%N5B1	WWB	1f Tf	
								3 V UGS _%1	%N56k	%D5B5	I I Tk	l NTD	
								LV UGS _%B	%N5VW	%Dkf 1	I I TD	l I TN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
3 V UGS _%W	1B5DD	NDNWB	kN	D	D	DDDB	DDDB	3 V UGS _%B	I Tkff	NEk1	W6Tl	1f Tl	
								3 V UGS _%k	%N5WD	%DRk6B	I I TD	1f Tk	
								LV UGS _%W	%N5WW	%DRkf1	I I TD	1I TN	
3 V UGS _%k	1B5DD	NDNkBk	kN	D	D	DDDB	DDDB	3 V UGS _%W	N5WN	DRkfW	I f Tl	1I Tf	
								LV UGS _%k	%N5WW	%DRkf1	I f Tl	1I TN	
3 V UGS _%1	1B5DD	NDNW6k	kN	D	D	DDDB	DDDB	3 V UGS _%B	N5WN	DRkfW	I f Tl	1I Tf	
								LV UGS _%1	%N5WW	%DRkf1	I I TD	1I TN	
3 V UGS _%BD	1B5DD	NDNk66	kT	D	D	DDDB	DDDB	51- B.	N5T5N	5TDWB	I I f TN	1Nk	
								3 V UGS _%BW	%NWW6N	%kTI 1	f 11Tl	1N5	
								LV UGS _%BD	%N5WW	%DRkf1	I f Tl	1I TN	
3 V UGS _%BN	1B5DD	NDf T51 f	kT5	D	D	DDDB	DDDB	JU%B/N	N5WN	DRkfk	I f TW	1I Tf	
								LV UGS _%BN	%N5WW	%DRk1 N	I f Tk	1I TN	
3 V UGS _%Bf	1B5DD	NDf TBk1	kT5	D	D	DDDB	DDDB	JU%B/N	kTBff	I TN6I	N1 NNk	1f TD	
								3 V UGS _%Bl	%6T5WN	%6TBfk	11TN	1Nk	
								LV UGS _%Bf	%N5WW	%DRk1 N	I f Tk	1I TN	
3 V UGS _%Bl	1B5DD	NDf T51 D	kT5	D	D	DDDB	DDDB	JU%B/N	N5WN	DRkfk	I f TW	1I Tf	
								LV UGS _%Bl	%N5WW	%DRk1 N	I f Tk	1I TN	
3 V UGS _%BB	1B5DD	NDf TTW	kT5	D	D	DDDB	DDDB	JU%B/N	%NNNf f	%BTk5I	N15TN	1NTl	
								3 V UGS _%B6	NfTl 5B	6T5ND	f1 D5	1f TN	
								LV UGS _%BB	%N5WW	%DRk1 D	I f T5	1I TN	
3 V UGS _%B6	1B5DD	NDf TNDk	kTB	D	D	DDDB	DDDB	3 V UGS _%BB	%NfTl W5	%6TWN1	f1 NTW	1N5	
								3 V UGS _%BW	N3T5f 1	WTBW	f WBTB	1NTl	
								LV UGS _%B6	%N5WW	%DRk1 D	I f T5	1I TN	
3 V UGS _%BW	1B5DD	NDNTl DI	kTB	D	D	DDDB	DDDB	3 V UGS _%BD	NWWW	kTf1 k	f 15TB	1Nk	
								3 V UGS _%B6	%NBT5D5	%W5NN	f W6TW	1N5	
								LV UGS _%BW	%N5WW	%DRk1 D	I f Tl	1I TN	
3 V UGS _%B5	1B5DD	NDf TTI 5	kT5	D	D	DDDB	DDDB	3 V UGS _%Bl	N5WN	DRkfk	I f T6	1I TN	
								LV UGS _%B5	%N5WW	%DRk1 N	I f TW	1I TN	
3 V UGS _%Bl	1B5DD	NDf T5kD	kT5	D	D	DDDB	DDDB	3 V UGS _%Bf	6T65f	f Tf6k	1kTl	1f Tk	
								3 V UGS _%B5	%N5WD	%DRW6	I f Tk	1f T5	
								3 V UGS _%6D	%N5WD	%DRkWB	I f Tk	1f T5	
								LV UGS _%Bl	%N5WW	%DRk1 N	I f TW	1I TN	
3 V UGS _%6D	1B5DD	NDf TTI 1W	kT5	D	D	DDDB	DDDB	3 V UGS _%Bl	N5WN	DRkfk	I f T6	1I TN	
								LV UGS _%6D	%N5WW	%DRk1 N	I f TW	1I TN	
* POv	N.5TDDD	NDDDDD	DD	%kTDI D	%66Tf f5	D	D	51_N	%kTDI D	%66Tf f5	I I 1Tf	16TD	
3 P_~I	N.T5DD	NDDBWk	kT	D	D	D	D	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DD	DD	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DN3 V.

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
5N-06	1BGDDD	NN50G	Wk	E	D	E	E	3 V U1 S _%G	%5TBGG	%Tf5	I1NG	N'D	
								5N_0U	05TBGG	5Tf5	I1NG	N'D	
5N-f6	1BGDDD	NN50G	Wk	E	D	E	E	JU%/0	%DIDk	%NDGB	Ikf'5	N'T	
								5N_0U	fDIDk	NDGB	Ikf'5	N'T	
5N-I6	1BGDDD	NN50G	Wk	E	D	E	E	3 V U1 S _%I	%DIfkG	%Nf1N	Ik1'W	N'D	
								5N_0U	fDIfkG	Nf1N	Ik1'W	N'D	
5N-B6	1BGDDD	NN50G	Wk	E	D	E	E	3 V U1 S _%BD	%5TIDf	%NfWW	IBI'N	5Nf	
								5N_0U	05TIDf	NfWW	IBI'N	5Nf	
5N_06	015TDDD	NGIDDk	DID	E	D	E	E	POv	kk'DI0	fGfGk	IGk'D	NGD	
								HV U1 S 3 P_	%k'DI0	%GfGk	IGk'D	NGD	
5N_0U	1BGDDD	NN50G	Wk	E	D	E	E	5N-B6	%5TIDf	%NfWW	IBI'N	5Nf	
								5N-I6	%DIfkG	%Nf1N	Ik1'W	N'D	
								5N-f6	%DIDk	%NDGB	Ikf'5	N'T	
								5N-06	%5TBGG	%Tf5	I1NG	N'D	
								3 P_~I	kk'IBD	IG55k	0BfNG	NDk	
								& HV U1 S 3 P_					
HV U1 S 3 P_	015TDDD	NGIDDk	DID	E	D	DDB5	DDII	5N_06	kk'DI0	fGfGk	IGk'D	NGD	
								5N_0U	%k'D5D	%GfND	IGk'B	NGD	
								& 3 P_~I					
JU%/0	1BGDDD	0DDfI0I	WN	E	D	E	E	3 V U1 S _%0k	%f'NWD	%GfGN0	f1GfG	N'5	
								3 V U1 S _%f	%'IB0W	%'DWD	01BfG	Nf'D	
								5N-f6	fDIfkW	5'kC0	IkDID	N'N	
JU%B/0	1BGDDD	0DfIBB	kTG	E	D	E	E	3 V U1 S _%B0	%'5WD	%DkGk	Ifk'N	Nf'W	
								3 V U1 S _%Bf	%'IBff	%'DGf	01f'D	Nf'D	
								3 V U1 S _%BI	%'5WD	%DkGW	Ifk'N	Nf'W	
								3 V U1 S _%BB	00'DBf	BWWB	0Nk'k	Nf'T	
LV U1 S _%D0	DWND	0DITCGf	ND	0'5kG	D50D	E	E	3 V U1 S _%D0	0'5kG	D50D	0WGDD	N'5	
LV U1 S _%Df	DWND	0DITBWG	ND	0'5kG	D50D	E	E	3 V U1 S _%Df	0'5kG	D50D	0WD'G	N'5	
LV U1 S _%DI	DWND	0DIT0W	ND	0'5kG	D50D	E	E	3 V U1 S _%DI	0'5kG	D50D	0WGI'5	N'5	
LV U1 S _%DB	DWND	0DIfDN	ND	0'5kG	D50D	E	E	3 V U1 S _%DB	0'5kG	D50D	0WGGG	N'5	
LV U1 S _%DG	DWND	0DITDBN	ND	0'5kG	D50D	E	E	3 V U1 S _%DG	0'5kG	D50D	0WG5'D	N'5	
LV U1 S _%DW	DWND	0DfTNWB	ND	0'5kG	D50D	E	E	3 V U1 S _%DW	0'5kG	D50D	0WGNG	N'5	
LV U1 S _%Dk	DWND	0DfTNDN	ND	0'5kG	D50D	E	E	3 V U1 S _%Dk	0'5kG	D50D	0WWDB	N'5	
LV U1 S _%D5	DWND	0DfTN0G	ND	0'5kG	D50D	E	E	3 V U1 S _%D5	0'5kG	D50D	0WWDI	N'5	
LV U1 S _%DN	DWND	0DfTk0B	ND	0'5kG	D50D	E	E	3 V U1 S _%DN	0'5kG	D50D	0WWTG	N'5	
LV U1 S _%0D	DWND	0DfTGN5	ND	0'5kG	D50D	E	E	3 V U1 S _%0D	0'5kG	D50D	0WWGB	N'5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
LV U1 S _%0I	DWND	0DI TDD0	NID	0'5kG	D50D	E	E	3 V U1 S _%0I	0'5kG	D50D	0WGkTI	NO'5	
LV U1 S _%0B	DWND	0DI TDB0	NID	0'5kG	D50D	E	E	3 V U1 S _%0B	0'5kG	D50D	0WG5TI	NO'5	
LV U1 S _%0G	DWND	0DI'kBD	NID	0'5kG	D50D	E	E	3 V U1 S _%0G	0'5kG	D50D	0WWTD	NO'5	
LV U1 S _%0W	DWND	0DI TDI 0	NID	0'5kG	D50D	E	E	3 V U1 S _%0W	0'5kG	D50D	0WG5TB	NO'5	
LV U1 S _%0k	DWND	0DI'BW0	NID	0'5kG	D50D	E	E	3 V U1 S _%0k	0'5kG	D50D	0WWkTW	NO'5	
LV U1 S _%5D	DWND	0DI'5LN	5'N	0'5kG	D50D	E	E	3 V U1 S _%5D	0'5kG	D50D	0WWTD	NO'5	
LV U1 S _%50	DWND	0DI'TWk	5'N	0'5kG	D50D	E	E	3 V U1 S _%50	0'5kG	D50D	0WWBI	NO'5	
LV U1 S _%5f	DWND	0DI'TGGB	5'N	0'5kG	D50D	E	E	3 V U1 S _%5f	0'5kG	D50D	0WWWD	NO'5	
LV U1 S _%5I	DWND	0DI'GWN	NID	0'5kG	D50D	E	E	3 V U1 S _%5I	0'5kG	D50D	0WWGN	NO'5	
LV U1 S _%5B	DWND	0DI'D0I	5'N	0'5kG	D50D	E	E	3 V U1 S _%5B	0'5kG	D50D	0WkITI	NO'5	
LV U1 S _%5G	DWND	0DI'LD5D	5'N	0'5kG	D50D	E	E	3 V U1 S _%5G	0'5kG	D50D	0WkITN	NO'5	
LV U1 S _%5W	DWND	0DI'NI G	NID	0'5kG	D50D	E	E	3 V U1 S _%5W	0'5kG	D50D	0WGNTN	NO'5	
LV U1 S _%5k	DWND	0DI'5WB	NID	0'5kG	D50D	E	E	3 V U1 S _%5k	0'5kG	D50D	0WW0D	NO'5	
LV U1 S _%55	DWND	0DI'kfN	NID	0'5kG	D50D	E	E	3 V U1 S _%55	0'5kG	D50D	0WWTI	NO'5	
LV U1 S _%5N	DWND	0DI'kf0	5'N	0'5kG	D50D	E	E	3 V U1 S _%5N	0'5kG	D50D	0WWTB	NO'5	
LV U1 S _%50	DWND	0DI TGk	NID	0'5kG	D50D	E	E	3 V U1 S _%50	0'5kG	D50D	0WGITI	NO'5	
LV U1 S _%5f	DWND	0DI TDGD	NIf	0'5kG	D50D	E	E	3 V U1 S _%5f	0'5kG	D50D	0WGWG	NO'5	
LV U1 S _%5I	DWND	0DI TDBG	NIf	0'5kG	D50D	E	E	3 V U1 S _%5I	0'5kG	D50D	0WG5TI	NO'5	
LV U1 S _%5B	DWND	0DI TD5D	NIf	0'5kG	D50D	E	E	3 V U1 S _%5B	0'5kG	D50D	0WGWD	NO'5	
LV U1 S _%5W	DWND	0DI TBBf	NID	0'5kG	D50D	E	E	3 V U1 S _%5W	0'5kG	D50D	0WGD'5	NO'5	
LV U1 S _%5k	DWND	0DI TBNB	NID	0'5kG	D50D	E	E	3 V U1 S _%5k	0'5kG	D50D	0WGDTD	NO'5	
LV U1 S _%5N	DWND	0DI TBDW	NID	0'5kG	D50D	E	E	3 V U1 S _%5N	0'5kG	D50D	0WGTB	NO'5	
LV U1 S _%BD	DWND	0DI TGD0	NIB	0'5kG	D50D	E	E	3 V U1 S _%BD	0'5kG	D50D	0WGDN	NO'5	
LV U1 S _%B0	DWND	0DBITWW	NIG	0'5kG	D50D	E	E	3 V U1 S _%B0	0'5kG	D50D	0W5'5	NO'5	
LV U1 S _%Bf	DWND	0DBIT0B	NIG	0'5kG	D50D	E	E	3 V U1 S _%Bf	0'5kG	D50D	0WNNW	NO'5	
LV U1 S _%BI	DWND	0DBITWG	NIG	0'5kG	D50D	E	E	3 V U1 S _%BI	0'5kG	D50D	0W5'5	NO'5	
LV U1 S _%BB	DWND	0DBIDDf	NIG	0'5kG	D50D	E	E	3 V U1 S _%BB	0'5kG	D50D	0WBf'N	NO'5	
LV U1 S _%BG	DWND	0DI'5B5	NIG	0'5kG	D50D	E	E	3 V U1 S _%BG	0'5kG	D50D	0WBGTB	NO'5	
LV U1 S _%BW	DWND	0DI TWB5	NIB	0'5kG	D50D	E	E	3 V U1 S _%BW	0'5kG	D50D	0WB5TG	NO'5	
LV U1 S _%B5	DWND	0DBITWk	NIG	0'5kG	D50D	E	E	3 V U1 S _%B5	0'5kG	D50D	0WIfTG	NO'5	
LV U1 S _%BN	DWND	0DBIWDD	NIG	0'5kG	D50D	E	E	3 V U1 S _%BN	0'5kG	D50D	0WITG	NO'5	
LV U1 S _%GD	DWND	0DBIWWG	NIG	0'5kG	D50D	E	E	3 V U1 S _%GD	0'5kG	D50D	0WIfTG	NO'5	
3 V U1 S _%D0	IBIGLD	0DDTkI	k'D	E	D	DIDDB	DIDDB	3 V U1 S _%Df	0'5W0	DIkfG	IfTN	NITI	
								LV U1 S _%D0	%0'5WW	%DIkfN	IITD	NITD	
3 V U1 S _%Df	IBIGLD	0DDTB5B	k'D	E	D	DIDDB	DIDDB	3 V U1 S _%D0	%0'5WD	%DIkkI	IITI	NITI	
								3 V U1 S _%DI	ITkf0	0'BN5	WWD	NI'5	
								LV U1 S _%Df	%0'5WW	%DIkfN	IITD	NITD	
3 V U1 S _%DI	IBIGLD	0DDTII	k'D	E	D	DIDDB	DIDDB	3 V U1 S _%Df	%'kk0G	%0TGI 5	WWB	NI'B	
								3 V U1 S _%DB	GICkW	fTTW	NNIB	NI'k	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								LV U1 S _%D	%0'5WW	%DRf'N	I I'D	N'T'D	
3 V U1 S _%DB	I BCDDD	0D0'Tf'B	k'D	E	D	DDDB	DDDB	3 V U1 S _%D	%GCk'D	%'TI D5	NNNk	N'TB	
								3 V U1 S _%DG	k'BIf	I'IDI I	01f'k	N'TW	
								LV U1 S _%DB	%0'5WW	%DRf'N	I I'D	N'T'D	
3 V U1 S _%DG	I BCDDD	0D0'IDW0	k'D	E	D	DDDB	DDDB	3 V U1 S _%DB	%'IBf'D	%'ID50	01I'D	N'TB	
								3 V U1 S _%D5	NIf50	I'5IDW	0WWD	N'TG	
								LV U1 S _%DG	%0'5WW	%DRf'5	I I'I	N'I'I	
3 V U1 S _%DW	I BCDDD	0DDNkG	k'D	E	D	DDDB	DDDB	3 V U1 S _%Dk	0'5W0	DRf'G	I I'D	N'I'I	
								LV U1 S _%DW	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%Dk	I BCDDD	0DDN05	k'D	E	D	DDDB	DDDB	3 V U1 S _%DW	%0'5WD	%DRkGB	I I'I	N'Tk	
								3 V U1 S _%0W	%0'5GN	%DRkND	I I'IG	N'TD	
								3 V U1 S _%0G	GIC5D	f'TWN	NNN	N'TW	
								LV U1 S _%Dk	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%D5	I BCDDD	0DDNf'B	k'D	E	D	DDDB	DDDB	3 V U1 S _%DG	%NIfkD	%'I5NW	0WWk	N'TI	
								3 V U1 S _%DN	00'DI 0	BIWfD	0NN5	N'TB	
								LV U1 S _%D5	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%DN	I BCDDD	0DDkf'D	k'D	E	D	DDDB	DDDB	3 V U1 S _%D5	%00'D0f	%BRf'W	f DDIW	N'TD	
								3 V U1 S _%0D	0f'TNkI	GIBGD	f I I'I5	N'TI	
								LV U1 S _%DN	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%0D	I BCDDD	0DDIWDf	k'D	E	D	DDDB	DDDB	3 V U1 S _%DN	%0f'TNW0	%GIGf'N	f I BIB	N'TD	
								3 V U1 S _%G	0B5ff	WIfGI	f WkTW	N'TD	
								LV U1 S _%0D	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%0I	I BCDDD	0DD'D0B	WN	E	D	DDDB	DDDB	3 V U1 S _%0B	0'5W0	DRf'G	I I'D	N'I'I	
								LV U1 S _%0I	%0'5WW	%DRf'5	I I'D	N'I'D	
3 V U1 S _%0B	I BCDDD	0D0'IDGf	WN	E	D	DDDB	DDDB	3 V U1 S _%0I	%0'5WD	%DRkGk	I I'I	N'TW	
								3 V U1 S _%0G	I'Ikf0	0'IB5f	WWI	N'TN	
								LV U1 S _%0B	%0'5WW	%DRf'5	I I'I	N'I'I	
3 V U1 S _%0G	I BCDDD	0DDkBk	k'D	E	D	DDDB	DDDB	3 V U1 S _%Dk	%GCk0	%'TI N	0DDIB	N'TI	
								3 V U1 S _%0B	%'IkDN	%0'IGWD	WW5	N'TI	
								3 V U1 S _%0k	00'DBf	BIWfI	f DDIB	N'TB	
								LV U1 S _%0G	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%0W	I BCDDD	0D0'IDBI	k'D	E	D	DDDB	DDDB	3 V U1 S _%Dk	0'5W0	DRf'G	I I'D	N'I'I	
								LV U1 S _%0W	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%0k	I BCDDD	0DDIBWf	WN	E	D	DDDB	DDDB	JU%/0	0f'TNkG	GIBNf	f I BIk	N'TD	
								3 V U1 S _%0G	%00'D0B	%BRkW5	f D0'IG	N0'TN	
								LV U1 S _%0k	%0'5WG	%DRf'k	I I'IB	N'I'I	
3 V U1 S _%ID	I BCDDD	0DD50k	WN	E	D	DDDB	DDDB	3 V U1 S _%I0	0'5W0	DRf'B	I I'I	N'I'I	
								LV U1 S _%ID	%0'5WG	%DRf'5	I I'I	N'I'I	
3 V U1 S _%I0	I BCDDD	0DDIWkI	WN	E	D	DDDB	DDDB	3 V U1 S _%ID	%0'5G5	%D5DD	I I'IW	N0'TN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								3 V U1 S _%f	I Tkf D	0TGfB	WW5	NfTG	
								LV U1 S _%0	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%f	I BTGDD	0DDDGGk	WN	D	D	DDDB	DDDB	JU%/0	k1BHB	I TD5N	01BHD	NfTf	
								3 V U1 S _%0	%1k0G	%0TGGI	WkTD	NfTf	
								3 V U1 S _%N	%0T5G5	%D50f	I I Tk	NOTW	
								LV U1 S _%f	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%I	I BTGDD	0DDDGkf	k1D	D	D	DDDB	DDDB	5N-I 6	fDf 5D	5TkkN	I WWf	NOT5	
								3 V U1 S _%5	%05TGD5	%5TDGG	I I WD	NOTk	
								LV U1 S _%I	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%B	I BTGDD	0DDDDD5	W5	D	D	DDDB	DDDB	3 V U1 S _%G	0T5W0	DRkf I	I I TB	NfTf	
								LV U1 S _%B	%0T5WG	%DRkfk	I I TG	NfTf	
3 V U1 S _%G	I BTGDD	0DDDGkG	W5	D	D	DDDB	DDDB	5N-06	05TB5k	5TDBG	I I k5	NOTG	
								3 V U1 S _%D	%0B1kWG	%WWGW	fkD5	NOTf	
								3 V U1 S _%B	%0T5W0	%DRkWW	I I TW	NfTG	
								LV U1 S _%G	%0T5WG	%DRkfk	I I TG	NfTf	
3 V U1 S _%W	I BTGDD	0DDDN8G	k1D	D	D	DDDB	DDDB	3 V U1 S _%k	0T5W0	DRkfB	I I TD	NfTf	
								LV U1 S _%W	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%k	I BTGDD	0DD5kI	k1D	D	D	DDDB	DDDB	3 V U1 S _%W	%0T5WD	%DRkWf	I I Tf	NfTG	
								3 V U1 S _%5	I Tkf 0	0TB5k	WWG	NfTN	
								LV U1 S _%k	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%5	I BTGDD	0DDk1 G	k1D	D	D	DDDB	DDDB	3 V U1 S _%I	05TGI N	k1NI G	I I GID	NOTN	
								3 V U1 S _%k	%1k0W	%0TGff	WWk	NfTG	
								3 V U1 S _%I	%0f1NWf	%GW5N	f1GIf	NOTW	
								LV U1 S _%5	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%N	I BTGDD	0DDkf k	WN	D	D	DDDB	DDDB	3 V U1 S _%f	0T5W0	DRkfB	I I Tf	NfTf	
								LV U1 S _%N	%0T5WG	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%0	I BTGDD	0DDTkB	k1D	D	D	DDDB	DDDB	3 V U1 S _%f	0T5W0	DRkfG	I I TD	NfTf	
								LV U1 S _%0	%0T5WW	%DRkfN	I I TD	NfTD	
3 V U1 S _%f	I BTGDD	0DDTDWB	k1D	D	D	DDDB	DDDB	3 V U1 S _%0	%0T5Gk	%D51k	I I Tk	NOTf	
								3 V U1 S _%I	I Tk05	0TGW0	WWk	NfTf	
								LV U1 S _%f	%0T5WW	%DRkfN	I I TD	NfTD	
3 V U1 S _%I	I BTGDD	0DDTDGk	k1D	D	D	DDDB	DDDB	3 V U1 S _%5	0f1NNG	GIBkB	f1I TG	NfTf	
								3 V U1 S _%f	%1k0B	%0TG5N	WWN	NOTN	
								3 V U1 S _%B	%1IB0N	%1TDWD	01I TG	NfTD	
								LV U1 S _%I	%0T5WW	%DRkf 5	I I Tf	NfTf	
3 V U1 S _%B	I BTGDD	0DDTDNB	k1D	D	D	DDDB	DDDB	3 V U1 S _%I	k1BfN	I TDfD	01I Tf	NfTf	
								3 V U1 S _%W	%1k00	%0TGB5	WWG	NfTf	
								3 V U1 S _%N	%0T5Gk	%D5Bk	I I T5	NOTD	
								LV U1 S _%B	%0T5WW	%DRkfN	I I TD	NfTD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
3 V U1 S _%W	1 BGDDD	0DDBW0	kD	D	D	DDDB	DDDB	3 V U1 S _%B	I kff	0 Bk N	WWD	N TN	
								3 V U1 S _%k	%0 5WD	%DkGI	I I D	N Tk	
								LV U1 S _%W	%0 5WW	%DkfN	I I D	N T D	
3 V U1 S _%k	1 BGDDD	0DDGD0B	kD	D	D	DDDB	DDDB	3 V U1 S _%W	0 5W0	DkfG	I fN	N Tf	
								LV U1 S _%k	%0 5WW	%DkfN	I I D	N T D	
3 V U1 S _%N	1 BGDDD	0DDBf B	kD	D	D	DDDB	DDDB	3 V U1 S _%B	0 5W0	DkfG	I I D	N Tf	
								LV U1 S _%N	%0 5WW	%DkfN	I I D	N T D	
3 V U1 S _%BD	1 BGDDD	0DDGf 0	kT	D	D	DDDB	DDDB	5N+B6	05 GDf	5 DGW	I I f5	NO k	
								3 V U1 S _%BW	%0 WWGD	%T I 0	f NNN	NO G	
								LV U1 S _%BD	%0 5WW	%DkfN	I I D	N T D	
3 V U1 S _%B0	1 BGDDD	0Df I DD	kG	D	D	DDDB	DDDB	JU%B/0	0 5W0	DkfW	I fk	N Tf	
								LV U1 S _%B0	%0 5WW	%DkI D	I f5	N T D	
3 V U1 S _%Bf	1 BGDDD	0Df fBk	kG	D	D	DDDB	DDDB	JU%B/0	k Bff	I DGD	0I f D	N fD	
								3 V U1 S _%BN	%GGWD	%fBf B	NNI	NO k	
								LV U1 S _%Bf	%0 5WW	%DkI D	I f5	N T D	
3 V U1 S _%Bl	1 BGDDD	0Df fN5	kG	D	D	DDDB	DDDB	JU%B/0	0 5W0	DkfW	I fk	N Tf	
								LV U1 S _%Bl	%0 5WW	%DkI D	I f5	N T D	
3 V U1 S _%BB	1 BGDDD	0Df DI 0	kG	D	D	DDDB	DDDB	JU%B/0	%0 Dff	%BkkN	0N5 W	NO N	
								3 V U1 S _%BG	0f N5I	GGDG	f I 0 I	N D	
								LV U1 S _%BB	%0 5WW	%DkI D	I fN	N T D	
3 V U1 S _%BG	1 BGDDD	0DD5kB	kG	D	D	DDDB	DDDB	3 V U1 S _%BB	%f NW5	%GW0B	f I f D	NO 5	
								3 V U1 S _%BW	0B5fN	W BD	f WBN	NO N	
								LV U1 S _%BG	%0 5WW	%DkI D	I fN	N T D	
3 V U1 S _%BW	1 BGDDD	0DDWkD	kB	D	D	DDDB	DDDB	3 V U1 S _%BD	0 WWWN	kf I 0	f NND	NO k	
								3 V U1 S _%BG	%0 B5Dk	%WGDG	f WWf	NO W	
								LV U1 S _%BW	%0 5WW	%DkfN	I I D	N T D	
3 V U1 S _%B5	1 BGDDD	0Df kDk	kG	D	D	DDDB	DDDB	3 V U1 S _%BN	0 5W0	Dkfk	I fW	N T D	
								LV U1 S _%B5	%0 5WW	%DkI 0	I fW	N T D	
3 V U1 S _%BN	1 BGDDD	0Df WfN	kG	D	D	DDDB	DDDB	3 V U1 S _%Bf	GG5f	f fCG	N5f	N fk	
								3 V U1 S _%B5	%0 5WD	%DkWG	I f5	N TG	
								3 V U1 S _%GD	%0 5WD	%DkWB	I f5	N TG	
								LV U1 S _%BN	%0 5WW	%DkI 0	I fk	N T D	
3 V U1 S _%GD	1 BGDDD	0Df kDG	kG	D	D	DDDB	DDDB	3 V U1 S _%BN	0 5W0	Dkfk	I fW	N T D	
								LV U1 S _%GD	%0 5WW	%DkI 0	I fk	N T D	
* POv	0I 5TDDD	NGDDD	DD	%kTDfN	%GfBf5	D	D	5N_06	%kTDfN	%GfBf5	I Gk D	NG D	
3 P_~I	0I 5LD	0DDfI 0	kT	D	D	D	D	HV U1 S 3 P_ & 5N_0U	DDDD	DDDD	DD	DD	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DD 3 V6

Pro7ect:	F m OH m RF 0	**ETAP**	Page:	N	
Location:	Paulding, OH	NWDDDC	0 ate:	NDvD6v%DNf	
Contract:			SF :	m ES_m OO0 j	
Engineer:	Josh Venden	Study Case: NPG 16LE. 0	k eAision:	f 6M p EF	
I ilena- e:	F m 2OH		Con8igT	F or- al	

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
51I N	j B%6DD	11TlDl	Wj	D	D	D	D	3 V UGS _v%6	vN5TBfW	BDDB%	j NW5	vlf Tf	
								51_NU	N5TBfW	vBDDB%	j NW5	vlf Tf	
51I %	j B%6DD	11TlDl	Wj	D	D	D	D	JUv%N	v%DDj j D	B%6j	j Bl TD	vlf TW	
								51_NU	%DDj j D	vB%6j	j Bl TD	vlf TW	
51I j .	j B%6DD	11TlDl	Wj	D	D	D	D	3 V UGS _v%j	v%DDj D%	BjW5	j Bf f5	vlf f5	
								51_NU	%DDj D%	vBjW5	j Bf f5	vlf f5	
51I B.	j B%6DD	11TlDl	Wj	D	D	D	D	3 V UGS _vBD	vN5TjBBB	j TNDW	j NNTW	vl5TW	
								51_NU	N5TjBBB	vj TNDW	j NNTW	vl5TW	
51_N	Nj 5TDDD	11Tl1f	DfD	D	D	D	D	POR	ff TNfW	v%6T%jB	j j 1Tf	vl6TD	
								HV UGS 3 P_	vff TNfW	%6T%jB	j j 1Tf	vl6TD	
51_NU	j B%6DD	11TlDl	Wj	D	D	D	D	51I B.	vN5TjBBB	j TNDW	j NNTW	vl5TW	
								51I j .	v%DDj D%	BjW5	j Bf f5	vlf f5	
								51I %	v%DDj j D	B%6j	j Bl TD	vlf TW	
								51I N	vN5TBfW	BDDB%	j NW5	vlf Tf	
								3 P_~j	ff TB6j	vNWDW5	Nj %6TD	vlf Tl	
								& HV UGS 3 P_					
HV UGS 3 P_	Nj 5TDDD	11Tl1f	DfD	D	D	DfD6j	DfNBf	51_N	ff TNfW	v%6T%jB	j j 1Tf	vl6TD	
								51_NU	vff T%jD	%6TD5f	j j 1Tf	vl6TN	v%65DD
								& 3 P_~j					
JUv%N	j B%6DD	NDDDD5D	WBW	D	D	D	D	3 V UGS _vNf	vN%llfD	j TDfW	%88ll	vlf Tj	
								3 V UGS _v%%	vfTB%N	Nfl1j	N%fTf	vlf T%	
								51I %	%DDj 1N	vB5WI	j 6DBW	vlf Tj	
JUvB%N	j B%6DD	NDD5f6	ffTf	D	D	D	D	3 V UGS _vBN	vN5WN	DB5B	j Nll	vlWf5	
								3 V UGS _vB%	vfTB%6	N5Nj	N%W5	vlf TN	
								3 V UGS _vBj	vN5WN	DB5B	j Nll	vlWf5	
								3 V UGS _vBB	NNNBf	v%fT5N	NlDBW	vlf TD	
LV UGS _vDN	DfWD	NDDj B5	1TB	N5f6	vDBj j	D	D	3 V UGS _vDN	N5f6	vDBj j	NWDBT%	vlf TB	
LV UGS _vD%	DfWD	NDDT%fD	1TB	N5f6	vDBj j	D	D	3 V UGS _vD%	N5f6	vDBj j	NWD6T5	vlf TB	
LV UGS _vDj	DfWD	NDDNj W	1Tj	N5f6	vDBj j	D	D	3 V UGS _vDj	N5f6	vDBj j	NWDf TW	vlf TB	
LV UGS _vDB	DfWD	NDDD6%	1Tj	N5f6	vDBj j	D	D	3 V UGS _vDB	N5f6	vDBj j	NWDl TD	vlf TB	
LV UGS _vD6	DfWD	11Tl%W	1Tj	N5f6	vDBj j	D	D	3 V UGS _vD6	N5f6	vDBj j	NWNND	vlf TB	
LV UGS _vDW	DfWD	11Tl6B	1T%	N5f6	vDBj j	D	D	3 V UGS _vDW	N5f6	vDBj j	NWND5	vlf TB	
LV UGS _vDf	DfWD	11TlD6	1T%	N5f6	vDBj j	D	D	3 V UGS _vDf	N5f6	vDBj j	NWNNj	vlf TB	
LV UGS _vD5	DfWD	11T5BB	1T%	N5f6	vDBj j	D	D	3 V UGS _vD5	N5f6	vDBj j	NW%4j	vlf TB	
LV UGS _vDl	DfWD	11Tf%j	1TN	N5f6	vDBj j	D	D	3 V UGS _vDl	N5f6	vDBj j	NWNBj	vlf TB	
LV UGS _vND	DfWD	11TWWB	1TN	N5f6	vDBj j	D	D	3 V UGS _vND	N5f6	vDBj j	NW6T%	vlf TB	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
LV UGS _vNj	DfWD	NDDDDlB	1Tf%	N5f6	vDBjj	L	L	3 V UGS _vNj	N5f6	vDBjj	NWD5Tj	vlf'fB	
LV UGS _vNB	DfWD	NDDDDBD	1Tf%	N5f6	vDBjj	L	L	3 V UGS _vNB	N5f6	vDBjj	NWDlTf%	vlf'fB	
LV UGS _vN6	DfWD	11Tff%	1'fN	N5f6	vDBjj	L	L	3 V UGS _vN6	N5f6	vDBjj	NWWj'f6	vlf'fB	
LV UGS _vNW	DfWD	NDDDDNB	1Tf%	N5f6	vDBjj	L	L	3 V UGS _vNW	N5f6	vDBjj	NWDlTW	vlf'fB	
LV UGS _vNf	DfWD	11TWDj	1'fD	N5f6	vDBjj	L	L	3 V UGS _vNf	N5f6	vDBjj	NWWWP%	vlf'fB	
LV UGS _v%D	DfWD	11TlB6	1'fD	N5f6	vDBjj	L	L	3 V UGS _v%D	N5f6	vDBjj	NWNDlf	vlf'fB	
LV UGS _v%N	DfWD	11'5N5	1'fD	N5f6	vDBjj	L	L	3 V UGS _v%N	N5f6	vDBjj	NWW%Tf	vlf'fB	
LV UGS _v%%	DfWD	11TfNf	1'fD	N5f6	vDBjj	L	L	3 V UGS _v%%	N5f6	vDBjj	NWWBlB	vlf'fB	
LV UGS _v%j	DfWD	11TWD	1'fN	N5f6	vDBjj	L	L	3 V UGS _v%j	N5f6	vDBjj	NWW6Tl	vlf'fB	
LV UGS _v%B	DfWD	11TBf'j	5'f5	N5f6	vDBjj	L	L	3 V UGS _v%B	N5f6	vDBjj	NWW5Tj	vlf'fB	
LV UGS _v%6	DfWD	11TBBf	5'f5	N5f6	vDBjj	L	L	3 V UGS _v%6	N5f6	vDBjj	NWW5'f5	vlf'fB	
LV UGS _v%W	DfWD	11'5WN	1'f%	N5f6	vDBjj	L	L	3 V UGS _v%W	N5f6	vDBjj	NWW%lD	vlf'fB	
LV UGS _v%f	DfWD	11Tf15	1'f%	N5f6	vDBjj	L	L	3 V UGS _v%f	N5f6	vDBjj	NWWj'fN	vlf'fB	
LV UGS _v%5	DfWD	11TWfW	1'f%	N5f6	vDBjj	L	L	3 V UGS _v%5	N5f6	vDBjj	NWW6'fD	vlf'fB	
LV UGS _v%1	DfWD	11'5WW	1'fD	N5f6	vDBjj	L	L	3 V UGS _v%1	N5f6	vDBjj	NWW%lD	vlf'fB	
LV UGS _vj N	DfWD	NDDfNNf	1'fB	N5f6	vDBjj	L	L	3 V UGS _vj N	N5f6	vDBjj	NWDf'Tl	vlf'fB	
LV UGS _vj %	DfWD	11Tlj N	1'fj	N5f6	vDBjj	L	L	3 V UGS _vj %	N5f6	vDBjj	NWNDlI	vlf'fB	
LV UGS _vj j	DfWD	11'5jf	1'fj	N5f6	vDBjj	L	L	3 V UGS _vj j	N5f6	vDBjj	NWW%lB	vlf'fB	
LV UGS _vj B	DfWD	11TlBj	1'fB	N5f6	vDBjj	L	L	3 V UGS _vj B	N5f6	vDBjj	NWNDlf	vlf'fB	
LV UGS _vj W	DfWD	NDDfNf1	1'fB	N5f6	vDBjj	L	L	3 V UGS _vj W	N5f6	vDBjj	NWDWIl	vlf'fB	
LV UGS _vj f	DfWD	NDDP%6	1'fB	N5f6	vDBjj	L	L	3 V UGS _vj f	N5f6	vDBjj	NWDWP%	vlf'fB	
LV UGS _vj 1	DfWD	NDDfNBW	1'fB	N5f6	vDBjj	L	L	3 V UGS _vj 1	N5f6	vDBjj	NWDf'f5	vlf'fB	
LV UGS _vBD	DfWD	11Tlff	1'fW	N5f6	vDBjj	L	L	3 V UGS _vBD	N5f6	vDBjj	NWNDP%	vlf'fB	
LV UGS _vBN	DfWD	NDDjf1	NDfD	N5f6	vDBjj	L	L	3 V UGS _vBN	N5f6	vDBjj	NWDjTf	vlf'fB	
LV UGS _vB%	DfWD	NDDjj%	NDfD	N5f6	vDBjj	L	L	3 V UGS _vB%	N5f6	vDBjj	NWDBf6	vlf'fB	
LV UGS _vBj	DfWD	NDDjf5	NDfD	N5f6	vDBjj	L	L	3 V UGS _vBj	N5f6	vDBjj	NWDjTf	vlf'fB	
LV UGS _vBB	DfWD	NDDP4D%	1'fl	N5f6	vDBjj	L	L	3 V UGS _vBB	N5f6	vDBjj	NWDWW	vlf'fB	
LV UGS _vB6	DfWD	NDDfN%	1'f5	N5f6	vDBjj	L	L	3 V UGS _vB6	N5f6	vDBjj	NWDf'f5	vlf'fB	
LV UGS _vBW	DfWD	NDDDj1	1'ff	N5f6	vDBjj	L	L	3 V UGS _vBW	N5f6	vDBjj	NWDlT%	vlf'fB	
LV UGS _vB5	DfWD	NDDfW1	NDfN	N5f6	vDBjj	L	L	3 V UGS _vB5	N5f6	vDBjj	N615TW	vlf'fB	
LV UGS _vBl	DfWD	NDDfWj5	NDfN	N5f6	vDBjj	L	L	3 V UGS _vBl	N5f6	vDBjj	N611TW	vlf'fB	
LV UGS _v6D	DfWD	NDDfWf	NDfN	N5f6	vDBjj	L	L	3 V UGS _v6D	N5f6	vDBjj	N615Tf	vlf'fB	
3 V UGS _vDN	jBf5LD	NDDf51j	f'fN	L	D	DDDB	DDDB	3 V UGS _vD%	N5W%	vDf5Nj	j%lD	vlWB	
								LV UGS _vDN	vN5WW	Df5Dl	j%lN	vlW6	
3 V UGS _vD%	jBf5LD	NDDf5NW	f'fN	L	D	DDDB	DDDB	3 V UGS _vDN	vN5WD	DfBWW	j N5	vlf'fD	
								3 V UGS _vDj	jTf%%	vDllf1	WjTl	vlWf	
								LV UGS _vD%	vN5WW	Df5ND	j%lN	vlW6	
3 V UGS _vDj	jBf5LD	NDDfW5j	f'fN	L	D	DDDB	DDDB	3 V UGS _vD%	vjTfNf	DllBD	WjTf	vlWl	
								3 V UGS _vDB	6'f6f1	vNB6B	16'f5	vlW5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
								LV UGS _vDj	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vDB	j B56DD	NDD5611	f TD	D	D	DDDB	DDDB	3 V UGS _vDj	v6T5fj	NBD1	16TW	vlWl	
								3 V UGS _vD5	f TBj 6	vN11%%	N%fTf	vlW5	
								LV UGS _vDB	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vD5	j B56DD	NDDBf B	f TD	D	D	DDDB	DDDB	3 V UGS _vDB	vf TB%B	N5f B	N%fT5	vlf TD	
								3 V UGS _vD5	1T%5W	v%j 55	N51Tf	vlW5	
								LV UGS _vD6	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vDW	j B56DD	NDD65D%	WIl	D	D	DDDB	DDDB	3 V UGS _vDf	N5W%	vD5NB	j %P%	vlWB	
								LV UGS _vDW	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vDf	j B56DD	NDDB6j	WIl	D	D	DDDB	DDDB	3 V UGS _vDW	vN5VWN	DB5B	j %lD	vlW5	
								3 V UGS _vNW	vN5WD	DBBBl	j Nll	vlf T%	
								3 V UGS _vN6	6T65%	vNBBBf	1WN	vlW5	
								LV UGS _vDf	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vD5	j B56DD	NDDj 1j	WIl	D	D	DDDB	DDDB	3 V UGS _vD6	vlT%fW	%P%45	N51Tj	vlf TN	
								3 V UGS _vDl	NNNj 5	v%5N%	N1N6	vlf TD	
								LV UGS _vD5	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vDl	j B56DD	NDDP%j	W5	D	D	DDDB	DDDB	3 V UGS _vD5	vNNN%D	%fDf	N1NlD	vlf T%	
								3 V UGS _vND	N%Dl5%	vj T%%N	%%jT%	vlf TN	
								LV UGS _vDl	vN5VWV	D5ND	j %j	vlW5	
3 V UGS _vND	j B56DD	NDDP%6	W5	D	D	DDDB	DDDB	3 V UGS _vDl	vN%DlfD	j TNBN	%%%Dl	vlf T%	
								3 V UGS _v%6	NBT5j %	vj TW66	%66TN	vlf TN	
								LV UGS _vND	vN5VWV	D5ND	j %j	vlW5	
3 V UGS _vNj	j B56DD	NDDWB%	WIl	D	D	DDDB	DDDB	3 V UGS _vNB	N5W%	vD5Nj	j %lN	vlWB	
								LV UGS _vNj	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vNB	j B56DD	NDD6555	WIl	D	D	DDDB	DDDB	3 V UGS _vNj	vN5VWN	DB5N	j %lD	vlW5	
								3 V UGS _vN6	j Tf%j	vDIl 16	WBfN	vlWW	
								LV UGS _vNB	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vN6	j B56DD	NDDj %N	W5	D	D	DDDB	DDDB	3 V UGS _vDf	v6T6fB	Nj f f	16T5	vlf TN	
								3 V UGS _vNB	vj TfN%	DIlNf	Wj T5	vlf TN	
								3 V UGS _vNf	NNNBf	v%5D5	N1N5	vlf TD	
								LV UGS _vN6	vN5VWV	D5ND	j %j	vlW5	
3 V UGS _vNW	j B56DD	NDD6W%	WIl	D	D	DDDB	DDDB	3 V UGS _vDf	N5W%	vD5NB	j %lN	vlWB	
								LV UGS _vNW	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _vNf	j B56DD	NDDN6j	Wlf	D	D	DDDB	DDDB	JUv%N	N%Dl5B	vj TNfW	%%jTj	vlf TN	
								3 V UGS _vN6	vNNN%%	%fWW%	N1N1N	vlf Tj	
								LV UGS _vNf	vN5VWV	D5NN	j %j	vlW5	
3 V UGS _v%D	j B56DD	NDDBlj	Wlf	D	D	DDDB	DDDB	3 V UGS _v%N	N5W%	vD5NB	j %P%	vlWB	
								LV UGS _v%D	vN5VWV	D5ND	j %P%	vlW5	
3 V UGS _v%N	j B56DD	NDDjW5	Wlf	D	D	DDDB	DDDB	3 V UGS _v%D	vN561	DBj 1	j Nll	vlf Tj	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
								3 V UGS _v%%	j TF%N	vDII6j	WB1D	vl WII	
								LV UGS _v%N	vN5VWV	D65ND	j %6j	vl W6	
3 V UGS _v%%	j B65DD	NDDP%Wf	WIf	E	D	DDDB	DDDB	JUv%N	f TBj 5	vN5VWB	N%5TD	vl f TD	
								3 V UGS _v%N	vj TFNf	DII %B	WjY1I	vl f TD	
								3 V UGS _v%i	vN5661	DIB%W	j N5	vl f T5	
								LV UGS _v%%	vN5VWV	D65ND	j %6j	vl W6	
3 V UGS _v%j	j B65DD	NDDNf N	W5	E	D	DDDB	DDDB	511j .	%DDj 1B	vB5B5Bf	j 6DP%	vl f Tj	
								3 V UGS _v%5	vN5T6j %	BJj j j	j N5TD	vl f TB	
								LV UGS _v%j	vN5VWV	D65NN	j %6j	vl W6	
3 V UGS _v%B	j B65DD	NDDD%6	W5	E	D	DDDB	DDDB	3 V UGS _v%6	N5W%	vD65NB	j %6j	vl WB	
								LV UGS _v%B	vN5VWV	D65NN	j %6B	vl W6	
3 V UGS _v%6	j B65DD	11T111	WB	E	D	DDDB	DDDB	511N	N5T6D6	vB5P%j %	j NfTf	vl f T5	
								3 V UGS _vND	vNBTf 5%	j TP6B6	%6j Tj	vl f Tf	
								3 V UGS _v%B	vN5VWN	DBBf %	j %6N	vl WII	
								LV UGS _v%6	vN5VWV	D65NN	j %6B	vl W6	
3 V UGS _v%W	j B65DD	NDDBND	WII	E	D	DDDB	DDDB	3 V UGS _v%i	N5W%	vD65NB	j %6P%	vl WB	
								LV UGS _v%W	vN5VWV	D65ND	j %6P%	vl W6	
3 V UGS _v%i	j B65DD	NDDj Bf	WII	E	D	DDDB	DDDB	3 V UGS _v%W	vN5VWN	DBBf W	j %6D	vl WII	
								3 V UGS _v%5	j TF%%	vDII1D	WB1P%	vl WWV	
								LV UGS _v%i	vN5VWV	D65ND	j %6j	vl W6	
3 V UGS _v%5	j B65DD	NDDP%%W	WII	E	D	DDDB	DDDB	3 V UGS _v%j	N5T6N	vB1B6B	j N5T6	vl f TP%	
								3 V UGS _v%i	vj TFNf	DII66	WB1N	vl WII	
								3 V UGS _vj j	vN%II f%	%II56	%%%P%	vl f T5	
								LV UGS _v%5	vN5VWV	D65ND	j %6j	vl W6	
3 V UGS _v%d	j B65DD	NDDBN6	Wf	E	D	DDDB	DDDB	3 V UGS _v%%	N5W%	vD65NB	j %6P%	vl WB	
								LV UGS _v%d	vN5VWV	D65ND	j %6P%	vl W6	
3 V UGS _vj N	j B65DD	NDDWWB	f TN	E	D	DDDB	DDDB	3 V UGS _vj %	N5W%	vD65Nj	j %6N	vl WB	
								LV UGS _vj N	vN5VWV	D65ND	j %6P%	vl W6	
3 V UGS _vj %	j B65DD	NDDBf 1	f TN	E	D	DDDB	DDDB	3 V UGS _vj N	vN5665	DBBj	j Nf	vl f Tf	
								3 V UGS _vj j	j TF%D	vDII Nf	WjY5	vl f TN	
								LV UGS _vj %	vN5VWV	D65ND	j %6P%	vl W6	
3 V UGS _vj j	j B65DD	NDDj 5W	f TD	E	D	DDDB	DDDB	3 V UGS _v%5	NjTDDN	vj TP%DN	%%j TP%	vl f TN	
								3 V UGS _vj %	vj TFNW	D51D	WjYf	vl f TP%	
								3 V UGS _vj B	vf TBP%j	Nf 1f	N%6Tj	vl f TP%	
								LV UGS _vj j	vN5VWV	D65ND	j %6P%	vl W6	
3 V UGS _vj B	j B65DD	NDDB1 %	f TN	E	D	DDDB	DDDB	3 V UGS _vj j	f TBj j	vN5j f	N%6T5	vl f TN	
								3 V UGS _vj W	vj TFNj	DII j N	WjYf	vl f TD	
								3 V UGS _vj 1	vN5665	Dj 1j	j NfW	vl f T5	
								LV UGS _vj B	vN5VWV	D65ND	j %6P%	vl W6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
R0	9V	M 3 agT	. ngT	3 m	3 Aar	3 m	3 Aar	R0	3 m	3 Aar	. - 4	MPI	M_a4
3 V UGS _vj W	j B6LDD	NDDIf%W	f T%	D	D	DDDB	DDDB	3 V UGS _vj B	j Tf%j	vDII 1 1	WBID	vl WW	
								3 V UGS _vj f	vN5WN	DB5W	j %ID	vl W5	
								LV UGS _vj W	vN5WW	D6ND	j %N	vl W5	
3 V UGS _vj f	j B6LDD	NDDIf fN	f T%	D	D	DDDB	DDDB	3 V UGS _vj W	N5W%	vD6Nj	j %N	vl WB	
								LV UGS _vj f	vN5WW	D6ND	j %N	vl W5	
3 V UGS _vj 1	j B6LDD	NDDIWj	f TN	D	D	DDDB	DDDB	3 V UGS _vj B	N5W%	vD6Nj	j %N	vl WB	
								LV UGS _vj 1	vN5WW	D6ND	j %N	vl W5	
3 V UGS _vBD	j B6LDD	NDD6%6	f Tj	D	D	DDDB	DDDB	511 B.	N5T6%6	vBJ6N	j NW5	vl f TB	
								3 V UGS _vBW	vNWWWj	j T5j 5	%5BIf	vl f TB	
								LV UGS _vBD	vN5WW	D6ND	j %P%	vl W5	
3 V UGS _vBN	j B6LDD	NDDII%B	f Tf	D	D	DDDB	DDDB	JUvB/N	N5W%	vD6Nj	j %ID	vl WB	
								LV UGS _vBN	vN5WW	D6DI	j %N	vl W5	
3 V UGS _vB%	j B6LDD	NDD5f f	f Tf	D	D	DDDB	DDDB	JUvB/N	f TB%6	vN5NB	N%W5	vl f TN	
								3 V UGS _vBl	v6T6WJ	NJ LDN	1B5	vl f TB	
								LV UGS _vB%	vN5WW	D6DI	j %N	vl W5	
3 V UGS _vBj	j B6LDD	NDDII%j	f Tf	D	D	DDDB	DDDB	JUvB/N	N5W%	vD6Nj	j %ID	vl WB	
								LV UGS _vBj	vN5WW	D6DI	j %N	vl W5	
3 V UGS _vBB	j B6LDD	NDDIfB5	f TW	D	D	DDDB	DDDB	JUvB/N	vNNN%5	%WW5	NlDN	vl f T%	
								3 V UGS _vB6	N%II 1D	vj TN5%	%8%P%	vl f TN	
								LV UGS _vBB	vN5WW	D6ND	j %N	vl W5	
3 V UGS _vB6	j B6LDD	NDDWfD	f T5	D	D	DDDB	DDDB	3 V UGS _vBB	vN%II f W	j TDfB	%WNf	vl f Tj	
								3 V UGS _vBW	NB5j 5	vj T655	%j T5	vl f T%	
								LV UGS _vB6	vN5WW	D6ND	j %P%	vl W5	
3 V UGS _vBW	j B6LDD	NDD655f	f TB	D	D	DDDB	DDDB	3 V UGS _vBD	NWW5D	vj TIj 5	%56TN	vl f Tj	
								3 V UGS _vB6	vNB5N5	j TB%B	%j TD	vl f TB	
								LV UGS _vBW	vN5WW	D6ND	j %P%	vl W5	
3 V UGS _vB5	j B6LDD	NDNP%B%	f TI	D	D	DDDB	DDDB	3 V UGS _vBl	N5W%	vD6Nj	j NII	vl WB	
								LV UGS _vB5	vN5WW	D6DI	j %ID	vl W5	
3 V UGS _vBl	j B6LDD	NDNN5%	f T5	D	D	DDDB	DDDB	3 V UGS _vB%	6T65j	vNBWW	16T6	vl WT	
								3 V UGS _vB5	vN5WN	DBfW	j N5	vl WI	
								3 V UGS _v6D	vN5WN	DBff	j N5	vl WI	
								LV UGS _vBl	vN5WW	D6DI	j %ID	vl W5	
3 V UGS _v6D	j B6LDD	NDNP%BD	f TI	D	D	DDDB	DDDB	3 V UGS _vBl	N5W%	vD6Nj	j NII	vl WB	
								LV UGS _v6D	vN5WW	D6DI	j %ID	vl W5	
* POR	Nj 5TDDD	NDDIDDD	DID	vf f TNfB	%6P%BN	D	D	51_N	vf f TNfB	%6P%BN	j j 1Tf	vl 6TD	
3 P_~j	Nj T5LDD	11fWNj	WII	D	D	D	D	HV UGS 3 P_ & 51_NU	DDDDD	DDDDD	DID	DID	

* Rndicates a Aoltage regulated bus (Aoltage controlled or swing ty4e - achine connected to it)

Rndicates a bus with a load - is- atch o8- ore than DfN3 V.

Pro7ect:	F m OH m RF W	**ETAP**		Page:	N
Location:	Paulding, OH	NTI0I0C		Wate:	NGvGl v%GNF
Contract:				SF :	m ES_m OOWj
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		k eAision:	f 1M p EF
I ilena- e:	F m 2OH			Con8igD	F or- al

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
5. I N0	j BDCGG	. . Df 1	TTp	C	G	C	C	3 V U6 S _v%l	vN5DBfT	BI0EBf	j NTD%	v. f D	
								5. _NU	N5DBfT	vBI0EBf	j NTD%	v. f D	
5. I %0	j BDCGG	. . Df 1	TTp	C	G	C	C	JUv%N	v%GDj G	BD1.	j B. D	v. f DT	
								5. _NU	%GDj G	vBD1.	j B. D	v. f DT	
5. I j 0	j BDCGG	. . Df 1	TTp	C	G	C	C	3 V U6 S _v%j	v%GDCP%	BDf B	j B5Dp	v. f D	
								5. _NU	%GDCP%	vBDf B	j B5Dp	v. f D	
5. I B0	j BDCGG	. . Df 1	TTp	C	G	C	C	3 V U6 S _vBG	vN5DBj	j DNNl	j N%4N	v. 5DT	
								5. _NU	N5DBj	vj DNNl	j N%4N	v. 5DT	
5. _N0	Nj 5I0CGG	NGBD. f	GI0G	C	G	C	C	POR	f f DNTf	v%4IDCP%	j %jDT	v. 1I0G	
								HV U6 S 3 P_	vf f DNTf	%4IDCP%	j %jDT	v. 1I0G	
5. _NU	j BDCGG	. . Df 1	TTp	C	G	C	C	5. I B0	vN5DBj	j DNNl	j N%4N	v. 5DT	
								5. I j 0	v%GDCP%	BDf B	j B5Dp	v. f D	
								5. I %0	v%GDj G	BD1.	j B. D	v. f DT	
								5. I N0	vN5DBfT	BI0EBf	j NTD%	v. f D	
								3 P_~j	f f DBI1G	vNTI0G i T	Nj %T5	v. f D	
								& HV U6 S 3 P_					
HV U6 S 3 P_	Nj 5I0CGG	NGBD. f	GI0G	C	G	GI0G1.	GDNT%	5. _N0	f f DNTf	v%4IDCP%	j %jDT	v. 1I0G	
								5. _NU	vf f D%4T	%4IDNBG	j %jDT	v. 1IDN	%4DCGG
								& 3 P_~j					
JUv%N	j BDCGG	. . DBT	TTDT	C	G	C	C	3 V U6 S _vNf	vN%4DfG	j I0f.	%%jD%	v. f Dp	
								3 V U6 S _v%%	vf DB%N	ND. B	N%4T5	v. f D%	
								5. I %0	%GDp. N	vBD5f j	j 1NI0G	v. f Dp	
JUvB%N	j BDCGG	NGGD0B%	f Df	C	G	C	C	3 V U6 S _vBN	vN5TTN	GDBS5B	j ND	v. TT5	
								3 V U6 S _vB%	vf DB%4	N5Nl	N%4I0G	v. f DN	
								3 V U6 S _vBj	vN5TTN	GDBS51	j ND	v. TT5	
								3 V U6 S _vBB	NNDNBf	v%4D5j	N. GD	v. f I0G	
LV U6 S _vGN	GDT. G	NGGD%NB	. DB	N5f 1	vGDBj j	C	C	3 V U6 S _vGN	N5f 1	vGDBj j	NIGTDB	v. f DB	
LV U6 S _vC%	GDT. G	NGGDNj T	. DB	N5f 1	vGDBj j	C	C	3 V U6 S _vC%	N5f 1	vGDBj j	NIGfDT	v. f DB	
LV U6 S _vGj	GDT. G	NGGI0CP%	. DB	N5f 1	vGDBj j	C	C	3 V U6 S _vGj	N5f 1	vGDBj j	NIG. I5	v. f DB	
LV U6 S _vCB	GDT. G	. . DN5	. Dp	N5f 1	vGDBj j	C	C	3 V U6 S _vCB	N5f 1	vGDBj j	NINNDN	v. f DB	
LV U6 S _vGl	GDT. G	. . Df. %	. Dp	N5f 1	vGDBj j	C	C	3 V U6 S _vGl	N5f 1	vGDBj j	NINj D%	v. f DB	
LV U6 S _vGT	GDT. G	. . D5%G	. D%	N5f 1	vGDBj j	C	C	3 V U6 S _vGT	N5f 1	vGDBj j	NIN%4D	v. f DB	
LV U6 S _vGf	GDT. G	. . DfG	. D%	N5f 1	vGDBj j	C	C	3 V U6 S _vGf	N5f 1	vGDBj j	NINj D	v. f DB	
LV U6 S _vC5	GDT. G	. . DfNG	. D%	N5f 1	vGDBj j	C	C	3 V U6 S _vC5	N5f 1	vGDBj j	NIN5BD	v. f DB	
LV U6 S _vG	GDT. G	. . D55	. DN	N5f 1	vGDBj j	C	C	3 V U6 S _vG	N5f 1	vGDBj j	NINIDD	v. f DB	
LV U6 S _vNG	GDT. G	. . Dj G	. DN	N5f 1	vGDBj j	C	C	3 V U6 S _vNG	N5f 1	vGDBj j	NIN%DB	v. f DB	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
LV U6 S _vNj	GD. G	. . DTG	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _vNj	N3f 1	vGDBj j	NTNGDB	v. f DB	
LV U6 S _vNB	GD. G	. . DGT	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _vNB	N3f 1	vGDBj j	NTNNDj	v. f DB	
LV U6 S _vNl	GD. G	. . Dj f	. DN	N3f 1	vGDBj j	C	C	3 V U6 S _vNl	N3f 1	vGDBj j	NTNlDD	v. f DB	
LV U6 S _vNT	GD. G	. . I5G	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _vNT	N3f 1	vGDBj j	NTNNDD	v. f DB	
LV U6 S _vNF	GD. G	. . IBT5	. I0i	N3f 1	vGDBj j	C	C	3 V U6 S _vNF	N3f 1	vGDBj j	NTN5DB	v. f DB	
LV U6 S _v%G	GD. G	. . I5NN	. I0i	N3f 1	vGDBj j	C	C	3 V U6 S _v%G	N3f 1	vGDBj j	NTN%4D	v. f DB	
LV U6 S _v%N	GD. G	. . D5B	. I0i	N3f 1	vGDBj j	C	C	3 V U6 S _v%N	N3f 1	vGDBj j	NTNBBD	v. f DB	
LV U6 S _v%%	GD. G	. . D5%	. I0i	N3f 1	vGDBj j	C	C	3 V U6 S _v%%	N3f 1	vGDBj j	NTNTDT	v. f DB	
LV U6 S _v%j	GD. G	. . IB51	. DN	N3f 1	vGDBj j	C	C	3 V U6 S _v%j	N3f 1	vGDBj j	NTN5DN	v. f DB	
LV U6 S _v%B	GD. G	. . Dj 5	5I5	N3f 1	vGDBj j	C	C	3 V U6 S _v%B	N3f 1	vGDBj j	NT%GDD	v. f DB	
LV U6 S _v%l	GD. G	. . DjN%	5I5	N3f 1	vGDBj j	C	C	3 V U6 S _v%l	N3f 1	vGDBj j	NT%NI0i	v. f DB	
LV U6 S _v%T	GD. G	. . D%T	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _v%T	N3f 1	vGDBj j	NTNBD%	v. f DB	
LV U6 S _v%F	GD. G	. . DTj	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _v%F	N3f 1	vGDBj j	NTNlD%	v. f DB	
LV U6 S _v%5	GD. G	. . DBN	. D%	N3f 1	vGDBj j	C	C	3 V U6 S _v%5	N3f 1	vGDBj j	NTNFD%	v. f DB	
LV U6 S _v%	GD. G	. . Dj %	. I0i	N3f 1	vGDBj j	C	C	3 V U6 S _v%	N3f 1	vGDBj j	NTNBDN	v. f DB	
LV U6 S _vj N	GD. G	. . D5%	. IB	N3f 1	vGDBj j	C	C	3 V U6 S _vj N	N3f 1	vGDBj j	NTNGDN	v. f DB	
LV U6 S _vj %	GD. G	. . D. T	. IB	N3f 1	vGDBj j	C	C	3 V U6 S _vj %	N3f 1	vGDBj j	NTNj DN	v. f DB	
LV U6 S _vj j	GD. G	. . DCP%	. Dj	N3f 1	vGDBj j	C	C	3 V U6 S _vj j	N3f 1	vGDBj j	NTNBDT	v. f DB	
LV U6 S _vj B	GD. G	. . I5G	. IB	N3f 1	vGDBj j	C	C	3 V U6 S _vj B	N3f 1	vGDBj j	NTN%4D	v. f DB	
LV U6 S _vj T	GD. G	NGGI0Bl	. IB	N3f 1	vGDBj j	C	C	3 V U6 S _vj T	N3f 1	vGDBj j	NTG DN	v. f DB	
LV U6 S _vj f	GD. G	NGGI0i N	. D	N3f 1	vGDBj j	C	C	3 V U6 S _vj f	N3f 1	vGDBj j	NTG5Dj	v. f DB	
LV U6 S _vj .	GD. G	NGGI0N%	. IB	N3f 1	vGDBj j	C	C	3 V U6 S _vj .	N3f 1	vGDBj j	NTG DT	v. f DB	
LV U6 S _vBG	GD. G	. . I5B%	. DT	N3f 1	vGDBj j	C	C	3 V U6 S _vBG	N3f 1	vGDBj j	NTN%4j	v. f DB	
LV U6 S _vBN	GD. G	NGGI9Bl	NGI0i	N3f 1	vGDBj j	C	C	3 V U6 S _vBN	N3f 1	vGDBj j	NTGlD	v. f DB	
LV U6 S _vB%	GD. G	NGGDN f	NGI0i	N3f 1	vGDBj j	C	C	3 V U6 S _vB%	N3f 1	vGDBj j	NTGlDT	v. f DB	
LV U6 S _vBj	GD. G	NGGI9Bj	NGI0i	N3f 1	vGDBj j	C	C	3 V U6 S _vBj	N3f 1	vGDBj j	NTGlD	v. f DB	
LV U6 S _vBB	GD. G	NGGI0iTf	. D	N3f 1	vGDBj j	C	C	3 V U6 S _vBB	N3f 1	vGDBj j	NTG5Dl	v. f DB	
LV U6 S _vBl	GD. G	. . D5.	. I5	N3f 1	vGDBj j	C	C	3 V U6 S _vBl	N3f 1	vGDBj j	NTNGI0i	v. f DB	
LV U6 S _vBT	GD. G	. . DGB	. Dl	N3f 1	vGDBj j	C	C	3 V U6 S _vBT	N3f 1	vGDBj j	NTNNDj	v. f DB	
LV U6 S _vB5	GD. G	NGGDTl	NGDN	N3f 1	vGDBj j	C	C	3 V U6 S _vB5	N3f 1	vGDBj j	NTGG5I5	v. f DB	
LV U6 S _vB.	GD. G	NGGDGB	NGDN	N3f 1	vGDBj j	C	C	3 V U6 S _vB.	N3f 1	vGDBj j	NTGNDl	v. f DB	
LV U6 S _vlG	GD. G	NGGDTj	NGDN	N3f 1	vGDBj j	C	C	3 V U6 S _vlG	N3f 1	vGDBj j	NTGG5I5	v. f DB	
3 V U6 S _vGN	j BDGG	NGGIBTG	f DN	C	G	GI0GB	GI0GB	3 V U6 S _vGP%	N3T%	vGDNj	j %4DN	v. TDB	
								LV U6 S _vGN	vN3TT	GDNG	j %4DN	v. TD	
3 V U6 S _vGP%	j BDGG	NGGD5%	f DN	C	G	GI0GB	GI0GB	3 V U6 S _vGN	vN3TG	GBBTT	j ND	v. f I0i	
								3 V U6 S _vGj	j Dl%	vGD5G	TBI0i	v. TDl	
								LV U6 S _vGP%	vN3TT	GDNG	j %4D%	v. TD	
3 V U6 S _vGj	j BDGG	NGGD1G	f DN	C	G	GI0GB	GI0GB	3 V U6 S _vGP%	vj DNF	GDBN	Tj I5	v. TD	
								3 V U6 S _vGB	1Dl5	vNBl1	. 1D	v. TI5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
								LV U6 S _vGj	vN5TT	GDNG	j %4%	v. TD	
3 V U6 S _vGB	j BDCG	NGGBBTT	f DN	C	G	G0CB	G0CB	3 V U6 S _vGj	vlDf j	NBNG	. 1B	v. TD	
								3 V U6 S _vGl	f Bj 1	vND%B	N%4D	v. TB	
								LV U6 S _vGB	vN5TT	GDNG	j %4%	v. TD	
3 V U6 S _vGl	j BDCG	NGGjBN	f 0G	C	G	G0CB	G0CB	3 V U6 S _vGB	vf B%B	N5fT	N%4B	v. f 0G	
								3 V U6 S _vG5	. P5T	v%j. G	Nl . D	v. TB	
								LV U6 S _vGl	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _vGT	j BDCG	NGGjT.	TD	C	G	G0CB	G0CB	3 V U6 S _vGT	N5T%	vGDNB	j %4%	v. TB	
								LV U6 S _vGT	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _vGT	j BDCG	NGGj%G	TD	C	G	G0CB	G0CB	3 V U6 S _vGT	vN5TN	GBB51	j %4N	v. TB	
								3 V U6 S _vNT	vN5TG	GBBB.	j ND	v. f B%	
								3 V U6 S _vNl	1D5%	vNBBB5	. TB%	v. TB	
								LV U6 S _vGT	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _vG5	j BDCG	NGGP4G	TD	C	G	G0CB	G0CB	3 V U6 S _vGl	v. P%T	%jDGG	Nl . D	v. f DN	
								3 V U6 S _vG	NNDj f	v%5NB	N NB	v. f 0G	
								LV U6 S _vG5	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _vG	j BDCG	NGGDj .	TB	C	G	G0CB	G0CB	3 V U6 S _vG5	vNNDN	%B5G	N Nj	v. f B%	
								3 V U6 S _vNG	N%D5N	vj B%j	%%j D	v. f DN	
								LV U6 S _vG	vN5TT	GDNN	j %j	v. TD	
3 V U6 S _vNG	j BDCG	NGGl05N	TB	C	G	G0CB	G0CB	3 V U6 S _vG	vN%DfG	j DBBB	%%j B%	v. f B%	
								3 V U6 S _v%l	NB5j %	vj D15	%l 1DB	v. f DN	
								LV U6 S _vNG	vN5TT	GDNN	j %j	v. TD	
3 V U6 S _vNj	j BDCG	NGGDG5	TD	C	G	G0CB	G0CB	3 V U6 S _vNB	N5T%	vGDNB	j %4%	v. TB	
								LV U6 S _vNj	vN5TT	GDNG	j %4%	v. TD	
3 V U6 S _vNB	j BDCG	NGGBBl 1	TD	C	G	G0CB	G0CB	3 V U6 S _vNj	vN5TN	GBB5%	j %4G	v. TB	
								3 V U6 S _vNl	j B%j	vGD. 1	TBB%	v. TD	
								LV U6 S _vNB	vN5TT	GDNG	j %4%	v. TD	
3 V U6 S _vNl	j BDCG	NGGDB5	TB	C	G	G0CB	G0CB	3 V U6 S _vGT	vlDfB	Nj f 5	. 1D	v. f DN	
								3 V U6 S _vNB	vj BNN	GDN5	Tj D	v. f DN	
								3 V U6 S _vNT	NNDBf	v%5NG	N %4G	v. f 0G	
								LV U6 S _vNl	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _vNT	j BDCG	NGGB%5	TD	C	G	G0CB	G0CB	3 V U6 S _vGT	N5T%	vGDNB	j %4%	v. TB	
								LV U6 S _vNT	vN5TT	GDNG	j %4%	v. TD	
3 V U6 S _vNT	j BDCG	NGGl0P%G	TB	C	G	G0CB	G0CB	JUv%N	N%D5B	vj DNf.	%%j B	v. f DN	
								3 V U6 S _vNl	vNNDN%	%BTB	N NB	v. f B%	
								LV U6 S _vNT	vN5TT	GDNN	j %BB	v. TD	
3 V U6 S _v%G	j BDCG	NGGjPTG	TB	C	G	G0CB	G0CB	3 V U6 S _v%N	N5T%	vGDNB	j %4%	v. TB	
								LV U6 S _v%G	vN5TT	GDNG	j %j	v. TD	
3 V U6 S _v%N	j BDCG	NGGP%j B	TB	C	G	G0CB	G0CB	3 V U6 S _v%G	vN51.	GBBj .	j ND	v. f Bj	

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
								3 V U6 S _v%%	j D%N	vGD1j	TBDN	v. TD	
								LV U6 S _v%N	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _v%%	j BDCG	NGGDNj	TD	C	G	GOCB	GOCB	JUv%N	f Bj f	vN5T1	N%5DN	v. f0G	
								3 V U6 S _v%N	vj D%N	GD%B	TBOG	v. f0G	
								3 V U6 S _v%	vN51.	GB%T	j ND	v. fD	
								LV U6 S _v%%	vN5TT	GDNN	j %p	v. TD	
3 V U6 S _v%j	j BDCG	NGGOj f	T5	C	G	GOCB	GOCB	5. I j 0	%GD. B	vB51%	j 1GD	v. fj	
								3 V U6 S _v%5	vN5Dj %	BDj f	j N5DB	v. fB	
								LV U6 S _v%j	vN5TT	GDNN	j %B	v. TD	
3 V U6 S _v%B	j BDCG	. . 5. N	TD	C	G	GOCB	GOCB	3 V U6 S _v%d	N5T%	vGDNl	j %B	v. TB	
								LV U6 S _v%B	vN5TT	GDNN	j %B	v. TB	
3 V U6 S _v%d	j BDCG	. . 5Tl	TD	C	G	GOCB	GOCB	5. I N0	N5DCB	vBD%f	j N5DN	v. fD	
								3 V U6 S _vNG	vNB5N	j Dd G	%j D	v. fB	
								3 V U6 S _v%B	vN5TN	GBf %	j %D%	v. TD	
								LV U6 S _v%d	vN5TT	GDNN	j %B	v. TB	
3 V U6 S _v%T	j BDCG	NGGD%T	TD	C	G	GOCB	GOCB	3 V U6 S _v%f	N5T%	vGDNB	j %D%	v. TB	
								LV U6 S _v%T	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _v%f	j BDCG	NGGD%Nj	TD	C	G	GOCB	GOCB	3 V U6 S _v%T	vN5TN	GBf f	j %DN	v. TD	
								3 V U6 S _v%5	j D%%	vGD. N	TBD	v. TD	
								LV U6 S _v%f	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _v%5	j BDCG	NGGO6i %	TD	C	G	GOCB	GOCB	3 V U6 S _v%j	N5D1G	vBDB15	j N D0G	v. fD%	
								3 V U6 S _v%f	vj D%N	GD1T	TBD%	v. T5	
								3 V U6 S _vj j	vN%Df N	%D55	%%4T	v. fDB	
								LV U6 S _v%5	vN5TT	GDNN	j %p	v. TD	
3 V U6 S _v%	j BDCG	NGGD%5N	TD	C	G	GOCB	GOCB	3 V U6 S _v%%	N5T%	vGDNB	j %D%	v. TB	
								LV U6 S _v%	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _vj N	j BDCG	NGGDj G	fDN	C	G	GOCB	GOCB	3 V U6 S _vj %	N5T%	vGDNB	j %D%	v. TB	
								LV U6 S _vj N	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vj %	j BDCG	NGGDpBT	fDN	C	G	GOCB	GOCB	3 V U6 S _vj N	vN515	GBXCB	j ND	v. fD	
								3 V U6 S _vj j	j D%G	vGDN5	Tj D	v. fDN	
								LV U6 S _vj %	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _vj j	j BDCG	NGGD%d %	fDN	C	G	GOCB	GOCB	3 V U6 S _v%5	Nj 0GN	vj D%Gj	%%j D	v. fDN	
								3 V U6 S _vj %	vj D%NT	GD5. N	Tj 05	v. fD%	
								3 V U6 S _vj B	vfDB%j	ND. .	N%fD	v. fD%	
								LV U6 S _vj j	vN5TT	GDNG	j %p	v. TD	
3 V U6 S _vj B	j BDCG	NGGDp15	fDN	C	G	GOCB	GOCB	3 V U6 S _vj j	fDBj j	vN5j .	N%fD	v. fDN	
								3 V U6 S _vj T	vj D%Nj	GDj N	Tj 05	v. f0G	
								3 V U6 S _vj .	vN515	GDj. B	j ND	v. f05	
								LV U6 S _vj B	vN5TT	GDNG	j %p	v. TD	

Pro7ect:	F m OH m RF W	**ETAP**		Page:	1
Location:	Paulding, OH	NTGOOOC		Wate:	NGvGl v%GNF
Contract:				SF :	m ES_m OOWj
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		k eAision:	f 1M p EF
I ilena- e:	F m 2OH			Con8igD	F or- al

Bus		Voltage		Generation		Load		Load Flow					XFMR
RW	9V	M 3 agD	0 ngD	3 m	3 Aar	3 m	3 Aar	RW	3 m	3 Aar	0 - 4	MPI	M_a4
3 V U6 S _vj T	j BDCGj	NGGD. %	f D%	C	G	GOCB	GOCB	3 V U6 S _vj B	j D%j	vNOGG	TBDN	v. TDT	
								3 V U6 S _vj f	vN5TN	GBS T	j %Gj	v. T5	
								LV U6 S _vj T	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vj f	j BDCGj	NGGDj 5	f D%	C	G	GOCB	GOCB	3 V U6 S _vj T	N5T%	vGDNj	j %DN	v. TB	
								LV U6 S _vj f	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vj .	j BDCGj	NGGDTG	f D%	C	G	GOCB	GOCB	3 V U6 S _vj B	N5T%	vGDNB	j %DN	v. TB	
								LV U6 S _vj .	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vBG	j BDCGj	NGGj. N	f j	C	G	GOCB	GOCB	5. I B0	N5D%d	vBj 1T	j NTD%	v. f j	
								3 V U6 S _vBT	vNTDTj	j 5B%	%51DN	v. f B	
								LV U6 S _vBG	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vBN	j BDCGj	NGGD. N	f 5	C	G	GOCB	GOCB	JUvB/N	N5T%	vGDNj	j %DN	v. TB	
								LV U6 S _vBN	vN5TT	GDNG	j %DN	v. TD	
3 V U6 S _vB%	j BDCGj	NGGD BB	f D	C	G	GOCB	GOCB	JUvB/N	f BB%d	vN5Nl	N%5 1Gj	v. f DN	
								3 V U6 S _vB.	vl DTj	NjOCP%	. BD	v. f B	
								LV U6 S _vB%	vN5TT	GDNG	j %DN	v. TD	
3 V U6 S _vBj	j BDCGj	NGGD. G	f 5	C	G	GOCB	GOCB	JUvB/N	N5T%	vGDNj	j %DN	v. TB	
								LV U6 S _vBj	vN5TT	GDNG	j %DN	v. TD	
3 V U6 S _vBB	j BDCGj	NGGDNl	f DT	C	G	GOCB	GOCB	JUvB/N	vNNDN%5	%DDf N	N GDj	v. f D%	
								3 V U6 S _vBl	N%D. G	vj D5B	%%%D	v. f DN	
								LV U6 S _vBB	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vBl	j BDCGj	NGGDj f	f DT	C	G	GOCB	GOCB	3 V U6 S _vBB	vN%Df 1	j 0Bf f	%%%Gj	v. f j	
								3 V U6 S _vBT	NB5j f	vj D. N	%1BDN	v. f D%	
								LV U6 S _vBl	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vBT	j BDCGj	NGGBBlj	f DB	C	G	GOCB	GOCB	3 V U6 S _vBG	NTDTf .	vj DB%	%51D	v. f j	
								3 V U6 S _vBl	vNB5NT	j DB%5	%dj DB	v. f B	
								LV U6 S _vBT	vN5TT	GDNG	j %D%	v. TD	
3 V U6 S _vB5	j BDCGj	NGNDNG	f D	C	G	GOCB	GOCB	3 V U6 S _vB.	N5T%	vGDNj	j %Gj	v. TB	
								LV U6 S _vB5	vN5TT	GDG	j %Gj	v. TD	
3 V U6 S _vB.	j BDCGj	NGN0B5	f D	C	G	GOCB	GOCB	3 V U6 S _vB%	1D5j	vNBBTT	. 1DT	v. TD	
								3 V U6 S _vB5	vN5TN	GBBf T	j N5	v. TD	
								3 V U6 S _v1G	vN5TN	GBBf f	j N5	v. TD	
								LV U6 S _vB.	vN5TT	GDG	j %Gj	v. TD	
3 V U6 S _v1G	j BDCGj	NGNDNGf	f D	C	G	GOCB	GOCB	3 V U6 S _vB.	N5T%	vGDNj	j %Gj	v. TB	
								LV U6 S _v1G	vN5TT	GDG	j %Gj	v. TD	
* POR	Nj 5	GGG	NGl	Gj	vf f DNTT	%1 DjCB	C	C	5. _N0	vf f DNTT	%1 DjCB	j %j DT	v. 1Gj
3 P_~j	Nj 5	GGG	. . BBf 5	TD	C	G	C	C	HV U6 S 3 P_	GOCGG	GOCGG	GOj	GOj
									& 5. _NU				

* Rndicates a Aoltage regulated bus (Aoltage controlled or swing ty4e - achine connected to it)

\# Rndicates a bus with a load - is- atch o8 - ore than GDN3 V0

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ND	MW	Mvar	Amp	%PY	%I ap
89YFA	34.500	99.8F2	8.5	0	0	0	0	MV B1 S I -25	-24.580	0.3F8	4F2.F	F00.0	
								89I FB	24.580	-0.3F8	4F2.F	F00.0	
89Y2A	34.500	99.8F2	8.5	0	0	0	0	JB-2/F	-27.048	0.442	453.6	-F00.0	
								89I FB	27.048	-0.442	453.6	-F00.0	
89Y3A	34.500	99.8F2	8.5	0	0	0	0	MV B1 S I -23	-27.00F	0.30F	452.7	F00.0	
								89I FB	27.00F	-0.30F	452.7	F00.0	
89Y4A	34.500	99.8F2	8.5	0	0	0	0	MV B1 S I -40	-24.358	-0.485	408.5	F00.0	
								89I FB	24.358	0.485	408.5	F00.0	
89I FA	F38.000	F00.000	0.0	0	0	0	0	PON	F02.555	-F6.04F	434.3	-98.8	
								HV B1 S MPI	-F02.555	F6.04F	434.3	-98.8	
89I FB	34.500	99.8F2	8.5	0	0	0	0	89Y4A	-24.358	-0.485	408.5	F00.0	
								89Y3A	-27.00F	0.30F	452.7	F00.0	
								89Y2A	-27.048	0.442	453.6	-F00.0	
								89YFA	-24.580	0.3F8	4F2.F	F00.0	
								MPI ~3	F02.988	-0.576	F726.8	F00.0	
								& HV B1 S MPI					
HV B1 S MPI	F38.000	F00.000	0.0	0	0	0.053	0.F47	89I FA	F02.555	-F6.04F	434.3	-98.8	
								89I FB	-F02.609	F5.894	434.4	-98.8	-0.625
								& MPI ~3					
JB-2/F	34.500	F00.F76	8.9	0	0	0	0	MV B1 S I -F7	-F7.268	0.420	288.5	-F00.0	
								MV B1 S I -22	-9.883	0.266	F65.2	-F00.0	
								89Y2A	27.F5F	-0.685	453.7	-F00.0	
JB-4/F	34.500	F0F.690	F0.2	0	0	0	0	MV B1 S I -4F	-2.480	0.098	40.8	-99.9	
								MV B1 S I -42	-9.89F	0.273	F62.8	-F00.0	
								MV B1 S I -43	-2.480	0.099	40.9	-99.9	
								MV B1 S I -44	F4.852	-0.47F	244.5	-99.9	
LV B1 S I -0F	0.690	F0F.886	F2.3	2.500	0.000	0	0	MV B1 S I -0F	2.500	0.000	2053.F	F00.0	
LV B1 S I -02	0.690	F0F.778	F2.3	2.500	0.000	0	0	MV B1 S I -02	2.500	0.000	2055.3	F00.0	
LV B1 S I -03	0.690	F0F.594	F2.3	2.500	0.000	0	0	MV B1 S I -03	2.500	0.000	2059.0	F00.0	
LV B1 S I -04	0.690	F0F.472	F2.2	2.500	0.000	0	0	MV B1 S I -04	2.500	0.000	206F.5	F00.0	
LV B1 S I -05	0.690	F0F.289	F2.2	2.500	0.000	0	0	MV B1 S I -05	2.500	0.000	2065.2	F00.0	
LV B1 S I -06	0.690	F0F.279	F2.F	2.500	0.000	0	0	MV B1 S I -06	2.500	0.000	2065.4	F00.0	
LV B1 S I -07	0.690	F0F.2FF	F2.F	2.500	0.000	0	0	MV B1 S I -07	2.500	0.000	2066.8	F00.0	
LV B1 S I -08	0.690	F0F.F57	F2.F	2.500	0.000	0	0	MV B1 S I -08	2.500	0.000	2067.9	F00.0	
LV B1 S I -09	0.690	F00.96F	F2.F	2.500	0.000	0	0	MV B1 S I -09	2.500	0.000	207F.9	F00.0	
LV B1 S I -F0	0.690	F00.858	F2.0	2.500	0.000	0	0	MV B1 S I -F0	2.500	0.000	2074.F	F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ND	MW	Mvar	Amp	%PY	%I ap
LV B1 S I -F3	0.690	F0F.464	F2.F	2.500	0.000	0	0	MV B1 S I -F3	2.500	0.000	206F.7	F00.0	
LV B1 S I -F4	0.690	F0F.390	F2.F	2.500	0.000	0	0	MV B1 S I -F4	2.500	0.000	2063.2	F00.0	
LV B1 S I -F5	0.690	F0F.0F9	F2.0	2.500	0.000	0	0	MV B1 S I -F5	2.500	0.000	2070.8	F00.0	
LV B1 S I -F6	0.690	F0F.362	F2.F	2.500	0.000	0	0	MV B1 S I -F6	2.500	0.000	2063.7	F00.0	
LV B1 S I -F7	0.690	F00.746	FF.9	2.500	0.000	0	0	MV B1 S I -F7	2.500	0.000	2076.4	F00.0	
LV B1 S I -20	0.690	F0F.204	FF.9	2.500	0.000	0	0	MV B1 S I -20	2.500	0.000	2067.0	F00.0	
LV B1 S I -2F	0.690	F0F.029	FF.9	2.500	0.000	0	0	MV B1 S I -2F	2.500	0.000	2070.5	F00.0	
LV B1 S I -22	0.690	F00.889	FF.9	2.500	0.000	0	0	MV B1 S I -22	2.500	0.000	2073.4	F00.0	
LV B1 S I -23	0.690	F00.804	F2.0	2.500	0.000	0	0	MV B1 S I -23	2.500	0.000	2075.2	F00.0	
LV B1 S I -24	0.690	F00.479	FF.7	2.500	0.000	0	0	MV B1 S I -24	2.500	0.000	208F.9	F00.0	
LV B1 S I -25	0.690	F00.44F	FF.7	2.500	0.000	0	0	MV B1 S I -25	2.500	0.000	2082.7	F00.0	
LV B1 S I -26	0.690	F0F.F79	F2.2	2.500	0.000	0	0	MV B1 S I -26	2.500	0.000	2067.5	F00.0	
LV B1 S I -27	0.690	F0F.092	F2.F	2.500	0.000	0	0	MV B1 S I -27	2.500	0.000	2069.3	F00.0	
LV B1 S I -28	0.690	F00.924	F2.F	2.500	0.000	0	0	MV B1 S I -28	2.500	0.000	2072.7	F00.0	
LV B1 S I -29	0.690	F0F.095	FF.9	2.500	0.000	0	0	MV B1 S I -29	2.500	0.000	2069.2	F00.0	
LV B1 S I -3F	0.690	F0F.59F	F2.3	2.500	0.000	0	0	MV B1 S I -3F	2.500	0.000	2059.F	F00.0	
LV B1 S I -32	0.690	F0F.335	F2.3	2.500	0.000	0	0	MV B1 S I -32	2.500	0.000	2064.3	F00.0	
LV B1 S I -33	0.690	F0F.205	F2.3	2.500	0.000	0	0	MV B1 S I -33	2.500	0.000	2066.9	F00.0	
LV B1 S I -34	0.690	F0F.359	F2.3	2.500	0.000	0	0	MV B1 S I -34	2.500	0.000	2063.8	F00.0	
LV B1 S I -36	0.690	F0F.684	F2.4	2.500	0.000	0	0	MV B1 S I -36	2.500	0.000	2057.2	F00.0	
LV B1 S I -37	0.690	F0F.748	F2.4	2.500	0.000	0	0	MV B1 S I -37	2.500	0.000	2055.9	F00.0	
LV B1 S I -39	0.690	F0F.639	F2.4	2.500	0.000	0	0	MV B1 S I -39	2.500	0.000	2058.F	F00.0	
LV B1 S I -40	0.690	F0F.502	F2.6	2.500	0.000	0	0	MV B1 S I -40	2.500	0.000	2060.9	F00.0	
LV B1 S I -4F	0.690	F02.F94	F3.0	2.500	0.000	0	0	MV B1 S I -4F	2.500	0.000	2046.9	F00.0	
LV B1 S I -42	0.690	F02.F29	F3.0	2.500	0.000	0	0	MV B1 S I -42	2.500	0.000	2048.2	F00.0	
LV B1 S I -43	0.690	F02.F92	F3.0	2.500	0.000	0	0	MV B1 S I -43	2.500	0.000	2047.0	F00.0	
LV B1 S I -44	0.690	F0F.920	F2.9	2.500	0.000	0	0	MV B1 S I -44	2.500	0.000	2052.4	F00.0	
LV B1 S I -45	0.690	F0F.783	F2.9	2.500	0.000	0	0	MV B1 S I -45	2.500	0.000	2055.2	F00.0	
LV B1 S I -46	0.690	F0F.62F	F2.7	2.500	0.000	0	0	MV B1 S I -46	2.500	0.000	2058.5	F00.0	
LV B1 S I -48	0.690	F02.654	F3.F	2.500	0.000	0	0	MV B1 S I -48	2.500	0.000	2037.8	F00.0	
LV B1 S I -49	0.690	F02.570	F3.F	2.500	0.000	0	0	MV B1 S I -49	2.500	0.000	2039.4	F00.0	
LV B1 S I -50	0.690	F02.65F	F3.F	2.500	0.000	0	0	MV B1 S I -50	2.500	0.000	2037.8	F00.0	
MV B1 S I -0F	34.500	F0F.450	9.4	0	0	0.004	0.004	MV B1 S I -02	2.482	-0.F29	4F.0	-99.9	
								LV B1 S I -0F	-2.486	0.F25	4F.F	-99.9	
MV B1 S I -02	34.500	F0F.34F	9.4	0	0	0.004	0.004	MV B1 S I -0F	-2.479	0.082	4F.0	-99.9	
								MV B1 S I -03	4.96F	-0.2FF	82.0	-99.9	
								LV B1 S I -02	-2.486	0.F25	4F.F	-99.9	
MV B1 S I -03	34.500	F0F.F57	9.4	0	0	0.004	0.004	MV B1 S I -02	-4.952	0.F72	82.0	-99.9	
								MV B1 S I -04	7.434	-0.302	F23.F	-99.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ND	MW	Mvar	Amp	%PY	%I ap
								LV B1 S I -03	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -04	34.500	F0F.034	9.3	0	0	0.004	0.004	MV B1 S I -03	-7.425	0.258	F23.F	-99.9	
								MV B1 S I -05	9.907	-0.388	F64.2	-99.9	
								LV B1 S I -04	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -05	34.500	F00.852	9.3	0	0	0.004	0.004	MV B1 S I -04	-9.888	0.342	F64.2	-99.9	
								MV B1 S I -08	F2.370	-0.473	205.4	-99.9	
								LV B1 S I -05	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -06	34.500	F00.842	9.2	0	0	0.004	0.004	MV B1 S I -07	2.482	-0.F30	4F.2	-99.9	
								LV B1 S I -06	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -07	34.500	F00.773	9.2	0	0	0.004	0.004	MV B1 S I -06	-2.480	0.F0F	4F.2	-99.9	
								MV B1 S I -F6	-2.478	0.065	4F.2	-F00.0	
								MV B1 S I -F5	7.440	-0.297	F23.6	-99.9	
								LV B1 S I -07	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -08	34.500	F00.720	9.2	0	0	0.004	0.004	MV B1 S I -05	-F2.353	0.388	205.4	-F00.0	
								MV B1 S I -09	F4.835	-0.5F8	246.6	-99.9	
								LV B1 S I -08	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -09	34.500	F00.523	9.F	0	0	0.004	0.004	MV B1 S I -08	-F4.806	0.422	246.6	-F00.0	
								MV B1 S I -F0	F7.287	-0.553	287.9	-99.9	
								LV B1 S I -09	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -F0	34.500	F00.420	9.F	0	0	0.004	0.004	MV B1 S I -09	-F7.269	0.48F	287.9	-F00.0	
								MV B1 S I -25	F9.75F	-0.6F3	329.3	-F00.0	
								LV B1 S I -F0	-2.486	0.F28	4F.5	-99.9	
MV B1 S I -F3	34.500	F0F.027	9.2	0	0	0.004	0.004	MV B1 S I -F4	2.482	-0.F30	4F.2	-99.9	
								LV B1 S I -F3	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -F4	34.500	F00.953	9.2	0	0	0.004	0.004	MV B1 S I -F3	-2.480	0.098	4F.F	-99.9	
								MV B1 S I -F5	4.962	-0.228	82.3	-99.9	
								LV B1 S I -F4	-2.486	0.F26	4F.3	-99.9	
MV B1 S I -F5	34.500	F00.58F	9.F	0	0	0.004	0.004	MV B1 S I -07	-7.426	0.229	F23.6	-F00.0	
								MV B1 S I -F4	-4.943	0.F5F	82.3	-F00.0	
								MV B1 S I -F7	F4.85F	-0.5FF	247.2	-99.9	
								LV B1 S I -F5	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -F6	34.500	F00.925	9.2	0	0	0.004	0.004	MV B1 S I -07	2.482	-0.F30	4F.2	-99.9	
								LV B1 S I -F6	-2.486	0.F26	4F.3	-99.9	
MV B1 S I -F7	34.500	F00.307	9.0	0	0	0.004	0.004	JB-2/F	F7.29F	-0.509	288.6	-F00.0	
								MV B1 S I -F5	-F4.809	0.378	247.F	-F00.0	
								LV B1 S I -F7	-2.486	0.F28	4F.5	-99.9	
MV B1 S I -20	34.500	F00.766	9.0	0	0	0.004	0.004	MV B1 S I -2F	2.482	-0.F3F	4F.3	-99.9	
								LV B1 S I -20	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -2F	34.500	F00.59F	9.0	0	0	0.004	0.004	MV B1 S I -20	-2.477	0.056	4F.2	-F00.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ND	MW	Mvar	Amp	%PY	%I ap
								MV B1 S I -22	4.959	-0.F87	82.6	-99.9	
								LV B1 S I -2F	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -22	34.500	F00.450	8.9	0	0	0.004	0.004	JB-2/F	9.9FF	-0.332	F65.2	-99.9	
								MV B1 S I -2F	-4.952	0.F58	82.5	-99.9	
								MV B1 S I -29	-2.477	0.043	4F.3	-F00.0	
								LV B1 S I -22	-2.486	0.F28	4F.5	-99.9	
MV B1 S I -23	34.500	F00.366	9.F	0	0	0.004	0.004	89Y3A	27.F56	-0.673	452.9	-F00.0	
								MV B1 S I -28	-24.674	0.54F	4FF.5	-F00.0	
								LV B1 S I -23	-2.486	0.F28	4F.5	-99.9	
MV B1 S I -24	34.500	F00.040	8.7	0	0	0.004	0.004	MV B1 S I -25	2.482	-0.F32	4F.6	-99.9	
								LV B1 S I -24	-2.486	0.F29	4F.6	-99.9	
MV B1 S I -25	34.500	F00.002	8.7	0	0	0.004	0.004	89YFA	24.628	-0.474	4F2.2	-F00.0	
								MV B1 S I -F0	-F9.666	0.25F	329.F	F00.0	
								MV B1 S I -24	-2.48F	0.090	4F.5	-99.9	
								LV B1 S I -25	-2.486	0.F29	4F.7	-99.9	
MV B1 S I -26	34.500	F00.742	9.2	0	0	0.004	0.004	MV B1 S I -27	2.482	-0.F3F	4F.3	-99.9	
								LV B1 S I -26	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -27	34.500	F00.654	9.2	0	0	0.004	0.004	MV B1 S I -26	-2.480	0.093	4F.3	-99.9	
								MV B1 S I -28	4.96F	-0.224	82.6	-99.9	
								LV B1 S I -27	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -28	34.500	F00.485	9.2	0	0	0.004	0.004	MV B1 S I -23	24.705	-0.642	4FF.6	-F00.0	
								MV B1 S I -27	-4.953	0.F89	82.5	-99.9	
								MV B1 S I -33	-F7.270	0.322	287.7	-F00.0	
								LV B1 S I -28	-2.486	0.F28	4F.5	-99.9	
MV B1 S I -29	34.500	F00.657	9.0	0	0	0.004	0.004	MV B1 S I -22	2.482	-0.F3F	4F.3	-99.9	
								LV B1 S I -29	-2.486	0.F27	4F.4	-99.9	
MV B1 S I -3F	34.500	F0F.F54	9.4	0	0	0.004	0.004	MV B1 S I -32	2.482	-0.F30	4F.F	-99.9	
								LV B1 S I -3F	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -32	34.500	F00.897	9.4	0	0	0.004	0.004	MV B1 S I -3F	-2.476	0.0F9	4F.F	F00.0	
								MV B1 S I -33	4.957	-0.F49	82.3	-F00.0	
								LV B1 S I -32	-2.486	0.F26	4F.3	-99.9	
MV B1 S I -33	34.500	F00.767	9.4	0	0	0.004	0.004	MV B1 S I -28	F7.320	-0.5F7	287.8	-F00.0	
								MV B1 S I -32	-4.95F	0.F23	82.2	-F00.0	
								MV B1 S I -34	-9.888	0.264	F64.3	-F00.0	
								LV B1 S I -33	-2.486	0.F27	4F.3	-99.9	
MV B1 S I -34	34.500	F00.922	9.4	0	0	0.004	0.004	MV B1 S I -33	9.903	-0.302	F64.3	-F00.0	
								MV B1 S I -36	-4.946	0.F63	82.F	-99.9	
								MV B1 S I -39	-2.475	0.009	4F.0	F00.0	
								LV B1 S I -34	-2.486	0.F26	4F.3	-99.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ND	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ND	MW	Mvar	Amp	%PY	%I ap
MV B1 S I -36	34.500	F0F.247	9.5	0	0	0.004	0.004	MV B1 S I -34	4.962	-0.23F	82.F	-99.9	
								MV B1 S I -37	-2.480	0.F0F	4F.0	-99.9	
								LV B1 S I -36	-2.486	0.F26	4F.F	-99.9	
MV B1 S I -37	34.500	F0F.3FF	9.5	0	0	0.004	0.004	MV B1 S I -36	2.482	-0.F29	4F.F	-99.9	
								LV B1 S I -37	-2.486	0.F25	4F.F	-99.9	
MV B1 S I -39	34.500	F0F.202	9.5	0	0	0.004	0.004	MV B1 S I -34	2.482	-0.F29	4F.F	-99.9	
								LV B1 S I -39	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -40	34.500	F0F.065	9.7	0	0	0.004	0.004	89Y4A	24.665	-0.552	408.5	-F00.0	
								MV B1 S I -46	-22.F83	0.422	367.4	-F00.0	
								LV B1 S I -40	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -4F	34.500	F0F.758	F0.2	0	0	0.004	0.004	JB-4/F	2.482	-0.F28	40.9	-99.9	
								LV B1 S I -4F	-2.486	0.F24	40.9	-99.9	
MV B1 S I -42	34.500	F0F.693	F0.2	0	0	0.004	0.004	JB-4/F	9.89F	-0.274	F62.8	-F00.0	
								MV B1 S I -49	-7.409	0.F46	F22.0	-F00.0	
								LV B1 S I -42	-2.486	0.F25	4F.0	-99.9	
MV B1 S I -43	34.500	F0F.756	F0.2	0	0	0.004	0.004	JB-4/F	2.482	-0.F28	40.9	-99.9	
								LV B1 S I -43	-2.486	0.F24	40.9	-99.9	
MV B1 S I -44	34.500	F0F.484	F0.F	0	0	0.004	0.004	JB-4/F	-F4.82F	0.366	244.5	-F00.0	
								MV B1 S I -45	F7.303	-0.495	285.4	-F00.0	
								LV B1 S I -44	-2.486	0.F25	4F.0	-99.9	
MV B1 S I -45	34.500	F0F.346	F0.0	0	0	0.004	0.004	MV B1 S I -44	-F7.279	0.396	285.4	-F00.0	
								MV B1 S I -46	F9.76F	-0.525	326.4	-F00.0	
								LV B1 S I -45	-2.486	0.F25	4F.F	-99.9	
MV B1 S I -46	34.500	F0F.F84	9.8	0	0	0.004	0.004	MV B1 S I -40	22.2F0	-0.508	367.4	-F00.0	
								MV B1 S I -45	-F9.728	0.378	326.3	-F00.0	
								LV B1 S I -46	-2.486	0.F26	4F.2	-99.9	
MV B1 S I -48	34.500	F02.2F9	F0.3	0	0	0.004	0.004	MV B1 S I -49	2.482	-0.F27	40.7	-99.9	
								LV B1 S I -48	-2.486	0.F23	40.8	-99.9	
MV B1 S I -49	34.500	F02.F35	F0.3	0	0	0.004	0.004	MV B1 S I -42	7.442	-0.308	F22.0	-99.9	
								MV B1 S I -48	-2.480	0.090	40.7	-99.9	
								MV B1 S I -50	-2.480	0.09F	40.7	-99.9	
								LV B1 S I -49	-2.486	0.F23	40.8	-99.9	
MV B1 S I -50	34.500	F02.2F6	F0.3	0	0	0.004	0.004	MV B1 S I -49	2.482	-0.F27	40.7	-99.9	
								LV B1 S I -50	-2.486	0.F23	40.8	-99.9	
* PON	F38.000	F00.000	0.0	-F02.552	F6.056	0	0	89I FA	-F02.552	F6.056	434.3	-98.8	
MPI ~3	F3.800	99.706	9.3	0	0	0	0	HV B1 S MPI & 89I FB	0.000	0.000	0.0	0.0	

* Nidicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

Nidicates a bus with a load mismatch of more than 0.F MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
51- N	1B6DD	11'611	1'D	E	D	E	E	3 V UGS _%6	%BB6NN	%NN6ff	B61'k	1D6	
								51_NU	fBB6NN	NN6ff	B61'k	1D6	
51- f.	1B6DD	11'611	1'D	E	D	E	E	JU%/N	%WIkB	%N'61W	B15'k	1DW	
								51_NU	fWIkB	N'61W	B15'k	1DW	
51- I.	1B6DD	11'611	1'D	E	D	E	E	3 V UGS _%I	%WIN5	%N'kf6	B15'5	1DB	
								51_NU	fWIN5	N'kf6	B15'5	1DB	
51- B.	1B6DD	11'611	1'D	E	D	E	E	3 V UGS _%BD	%BIIB6	%N'IDB	B66'B	51'I	
								51_NU	fBIIB6	N'IDB	B66'B	51'I	
51_N	N.5'DDD	NDDIDDI	DID	E	D	E	E	POv	NDI'NN5	I1'k1N	BBl'II	16'D	
								HV UGS 3 P_	%NDI'NN5	%1'k1N	BBl'II	16'D	
51_NU	1B6DD	11'611	1'D	E	D	DIDDD	%'II1f	51- B.	%BIIB6	%N'IDB	B66'B	51'I	
								51- I.	%WIN5	%N'kf6	B15'5	1DB	
								51- f.	%WIkB	%N'61W	B15'k	1DW	
								51- N	%BB6NN	%NN6ff	B61'k	1D6	
								3 P_~I	NDI'WB5	61'N1 1	N1 WI	55'5	
								& HV UGS 3 P_					
HV UGS 3 P_	N.5'DDD	NDDIDDI	DID	E	D	DID6B	DNBk	51_N	NDI'NN5	I1'k1N	BBl'II	16'D	
								51_NU	%NDI'Nkf	%1'5k5	B6DII	1BII	k'6DD
								& 3 P_~I					
JU%/N	1B6DD	NDD6kW	1'I	E	D	E	E	3 V UGS _%k	%kI'11f	%'51k	1N6'B	1DII	
								3 V UGS _%f	%'5W6	%BIB51	N5DII	1NID	
								51- f.	fk'DIk	N'I 5W	B16'k	1DII	
JU%B/N	1B6DD	NDI'NWN	NDIf	E	D	E	E	3 V UGS _%BN	%'Bk5	%NDIB	BI'II	1N6	
								3 V UGS _%Bf	%'5kk	%B6DD	NkWN	1NID	
								3 V UGS _%BI	%'Bk5	%NDII	BI'II	1N6	
								3 V UGS _%BB	N3B51 I	WW8k	fWI'II	1NI'	
LV UGS _%N	DIWD	ND6'NDf	N'IN	f'6DD	NIfND	E	E	3 V UGS _%N	f'6DD	NIfND	ffNNI'	1DID	
LV UGS _%f	DIWD	NDBII5W	N'IN	f'6DD	NIfND	E	E	3 V UGS _%f	f'6DD	NIfND	ffNI'W	1DID	
LV UGS _%I	DIWD	NDBkkD	N'I'	f'6DD	NIfDD	E	E	3 V UGS _%I	f'6DD	NIfDD	ffNBk	1DI'	
LV UGS _%B	DIWD	NDBWBk	N'I'	f'6DD	NIfND	E	E	3 V UGS _%B	f'6DD	NIfND	fffD5	1DID	
LV UGS _%6	DIWD	NDBBI6	N'I'	f'6DD	NIfND	E	E	3 V UGS _%6	f'6DD	NIfND	fff6'I	1DID	
LV UGS _%W	DIWD	NDBIIfD	N'IN	f'6DD	NIfND	E	E	3 V UGS _%W	f'6DD	NIfND	fffk'5	1DID	
LV UGS _%k	DIWD	NDBIfBk	N'IN	f'6DD	NIfND	E	E	3 V UGS _%k	f'6DD	NIfND	fff1'I	1DID	
LV UGS _%5	DIWD	NDBIf6B	N'I'	f'6DD	NIfND	E	E	3 V UGS _%5	f'6DD	NIfND	fff1'I	1DID	
LV UGS _%I	DIWD	NDI'II5W	N'IN	f'6DD	NIfND	E	E	3 V UGS _%I	f'6DD	NIfND	ff1BII	1DID	
LV UGS _%D	DIWD	NDI'51D	N'IN	f'6DD	NIfND	E	E	3 V UGS _%D	f'6DD	NIfND	ff15'I	1DID	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
LV UGS _%N	DWD	NDB%LDD	N"D	f"%LDD	NfND	L	L	3 V UGS _%N	f"%LDD	NfND	fff1"ll	1DD	
LV UGS _%B	DWD	NDBfB"D	N"D	f"%LDD	NfND	L	L	3 V UGS _%B	f"%LDD	NfND	fff6"W	1DD	
LV UGS _%6	DWD	NDBfD"f	N"N	f"%LDD	NfND	L	L	3 V UGS _%6	f"%LDD	NfND	ff1BfN	1DD	
LV UGS _%W	DWD	NDBfBD5	N"N	f"%LDD	NfND	L	L	3 V UGS _%W	f"%LDD	NfND	fff6"ll	1DD	
LV UGS _%k	DWD	NDlTWB5	N"N	f"%LDD	NfND	L	L	3 V UGS _%k	f"%LDD	NfND	ffBf"lf	1DD	
LV UGS _%D	DWD	NDBfND5	NNll	f"%LDD	NfND	L	L	3 V UGS _%D	f"%LDD	NfND	ff1f"lf	1DD	
LV UGS _%N	DWD	NDlTllf D	N"D	f"%LDD	NfND	L	L	3 V UGS _%N	f"%LDD	NfND	ff1Wll	1DD	
LV UGS _%f	DWD	NDlTkkD	N"D	f"%LDD	NfND	L	L	3 V UGS _%f	f"%LDD	NfND	ff11"W	1DD	
LV UGS _%I	DWD	NDlTk1D	N"N	f"%LDD	NfND	L	L	3 V UGS _%I	f"%LDD	NfND	ff11"N	1DD	
LV UGS _%B	DWD	NDlTNk5	NNll	f"%LDD	NfND	L	L	3 V UGS _%B	f"%LDD	NfND	ff6f"B	1DD	
LV UGS _%6	DWD	NDlTN1	NNll	f"%LDD	NfND	L	L	3 V UGS _%6	f"%LDD	NfND	ff61"B	1DD	
LV UGS _%W	DWD	NDBlf5D	N"f	f"%LDD	NfND	L	L	3 V UGS _%W	f"%LDD	NfND	fff5"W	1DD	
LV UGS _%k	DWD	NDBfN5W	N"f	f"%LDD	NfND	L	L	3 V UGS _%k	f"%LDD	NfND	ff1DfW	1DD	
LV UGS _%5	DWD	NDBfDDk	N"f	f"%LDD	NfND	L	L	3 V UGS _%5	f"%LDD	NfND	ff1Bf6	1DD	
LV UGS _%1	DWD	NDlTl1N	N"D	f"%LDD	NfND	L	L	3 V UGS _%1	f"%LDD	NfND	ff1Bf5	1DD	
LV UGS _%N	DWD	NDBf5BB	N"f	f"%LDD	NfND	L	L	3 V UGS _%N	f"%LDD	NfND	ffNWW	1DD	
LV UGS _%f	DWD	NDBf6kD	N"f	f"%LDD	NfND	L	L	3 V UGS _%f	f"%LDD	NfND	ffff"B	1DD	
LV UGS _%I	DWD	NDBfBlN	N"f	f"%LDD	NfND	L	L	3 V UGS _%I	f"%LDD	NfND	fff6"B	1DD	
LV UGS _%B	DWD	NDBfWND	N"f	f"%LDD	NfND	L	L	3 V UGS _%B	f"%LDD	NfND	fffNW	1DD	
LV UGS _%W	DWD	NDBll65	N"f	f"%LDD	NfND	L	L	3 V UGS _%W	f"%LDD	NfND	ffN3f	1DD	
LV UGS _%k	DWD	ND6"DfW	N"f	f"%LDD	NfND	L	L	3 V UGS _%k	f"%LDD	NfND	ffN"5	1DD	
LV UGS _%1	DWD	NDBllDl	N"f	f"%LDD	NfND	L	L	3 V UGS _%1	f"%LDD	NfND	ffN6f	1DD	
LV UGS _%BD	DWD	ND6"DfD	N"5	f"%LDD	NfND	L	L	3 V UGS _%BD	f"%LDD	NfND	ffN"ll	1DD	
LV UGS _%BN	DWD	NDWDBB	N"k	f"%LDD	NfND	L	L	3 V UGS _%BN	f"%LDD	NfND	fN1N5	1DD	
LV UGS _%Bf	DWD	ND6"llk6	N"k	f"%LDD	NfND	L	L	3 V UGS _%Bf	f"%LDD	NfND	fN1f"ll	1DD	
LV UGS _%Bl	DWD	NDWDBf	N"k	f"%LDD	NfND	L	L	3 V UGS _%Bl	f"%LDD	NfND	fN1NW	1DD	
LV UGS _%BB	DWD	ND6"Wf	N"k	f"%LDD	NfND	L	L	3 V UGS _%BB	f"%LDD	NfND	fN15"5	1DD	
LV UGS _%B6	DWD	ND6"B5W	N"k	f"%LDD	NfND	L	L	3 V UGS _%B6	f"%LDD	NfND	ffDl"N	1DD	
LV UGS _%BW	DWD	ND6"fNk	N"W	f"%LDD	NfND	L	L	3 V UGS _%BW	f"%LDD	NfND	ffD5"5	1DD	
LV UGS _%B5	DWD	NDW6k6	N"k	f"%LDD	NfND	L	L	3 V UGS _%B5	f"%LDD	NfND	fN5DW	1DD	
LV UGS _%Bl	DWD	NDWB5W	N"k	f"%LDD	NfND	L	L	3 V UGS _%Bl	f"%LDD	NfND	fN5f"B	1DD	
LV UGS _%D	DWD	NDW6kf	N"k	f"%LDD	NfND	L	L	3 V UGS _%D	f"%LDD	NfND	fN5Dk	1DD	
3 V UGS _%5N	1B%LDD	NDf"fWl	1"5	L	D	DDDB	DDDB	3 V UGS _%5f	f"B5D	NDWN	BBBN	1Nll	
								LV UGS _%5N	%"B5B	%NDW6	BBBf	1Nll	
3 V UGS _%5f	1B%LDD	NDf"N6D	1"5	L	D	DDDB	DDDB	3 V UGS _%5N	%"Bkk	%NND!	BB%5	1NI	
								3 V UGS _%5l	Bll6W	f"NkD	55"W	1NW	
								LV UGS _%5f	%"B5B	%NDW6	BBBf	1Nll	
3 V UGS _%5l	1B%LDD	NDNllB5	1"5	L	D	DDDB	DDDB	3 V UGS _%5f	%BllB6	%"fD!	55"ll	1NI	
								3 V UGS _%5B	kfBf6	I"f61	NI1"N	1NW	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								LV UGS _%l	%TE5B	%ND6B	BBIl	1f`D	
3 V UGS _%B	1B6LDD	NDN5DI	1`5	L	D	DDDB	DDDB	3 V UGS _%l	%TENB	%TDI	NI`B	1NI	
								3 V UGS _%6	1`51B	BIW	Nkk`5	1N6	
								LV UGS _%B	%TE5B	%NDWB	BBIB	1NII	
3 V UGS _%6	1B6LDD	NDN6556	1`5	L	D	DDDB	DDDB	3 V UGS _%B	%TkI	%BBD5	Nk5`N	1NI	
								3 V UGS _%5	N`T6f	6`BWk	fffT6	1NB	
								LV UGS _%6	%TE5B	%NDW	BBI6	1NII	
3 V UGS _%W	1B6LDD	NDNBWk	1`B	L	D	DDDB	DDDB	3 V UGS _%k	f`Ek1	ND61	BBI6	1f`D	
								LV UGS _%W	%TE5B	%NDW	BBIW	1NII	
3 V UGS _%k	1B6LDD	NDNI1f	1`B	L	D	DDDB	DDDB	3 V UGS _%W	%TEkk	%ND51	BBIk	1NIW	
								3 V UGS _%W	%TEk6	%NN`6	BBIl	1ND	
								3 V UGS _%6	k`BIf	I`Tkf	NIBD	1N6	
								LV UGS _%k	%TE5B	%NDW	BBIW	1NII	
3 V UGS _%5	1B6LDD	NDNBDD	1`5	L	D	DDDB	DDDB	3 V UGS _%6	%N`T1f	%6`56N	ffI`T	1NI	
								3 V UGS _%l	N3`5N`	WWND	fWk`k	1NI	
								LV UGS _%5	%TE5B	%NDW	BBIW	1NII	
3 V UGS _%l	1B6LDD	NDNN`6	1`5	L	D	DDDB	DDDB	3 V UGS _%5	%3`kkk	%WkDI	fW5`6	1NIN	
								3 V UGS _%D	Nk`T6W	k`kWN	INI`N	1NI	
								LV UGS _%l	%TE5B	%NDW	BB3k	1f`D	
3 V UGS _%D	1B6LDD	NDDIIW6	1`B	L	D	DDDB	DDDB	3 V UGS _%l	%kT1B	%51D	INI`5	1ND	
								3 V UGS _%6	NI`kNB	5`555	I65`B	1NI	
								LV UGS _%D	%TE5B	%NDWN	BBI5	1f`D	
3 V UGS _%I	1B6LDD	NDNW6f	1`B	L	D	DDDB	DDDB	3 V UGS _%B	f`E5D	ND61	BBIB	1f`D	
								LV UGS _%I	%TE5B	%NDW	BBI6	1NII	
3 V UGS _%B	1B6LDD	NDN6kD	1`B	L	D	DDDB	DDDB	3 V UGS _%I	%TEkk	%NDIf	BBIW	1N6	
								3 V UGS _%6	BII6k	f`N6N	51`D	1Nk	
								LV UGS _%B	%TE5B	%NDW	BBI6	1NII	
3 V UGS _%6	1B6LDD	NDNNW	1`B	L	D	DDDB	DDDB	3 V UGS _%k	%TEN6	%TBD	NIB6	1NI	
								3 V UGS _%B	%II16	%Tf5	51`W	1NIN	
								3 V UGS _%k	N3`5f1	WWW	fW5`k	1NI	
								LV UGS _%6	%TE5B	%NDW	BBIk	1NII	
3 V UGS _%W	1B6LDD	NDN6665	1`B	L	D	DDDB	DDDB	3 V UGS _%k	f`Ek1	ND61	BBIB	1f`D	
								LV UGS _%W	%TE5B	%NDW	BBI6	1NII	
3 V UGS _%k	1B6LDD	NDDkk1	1`B	L	D	DDDB	DDDB	JU%/N	NkTWD	k`5N`	INBIW	1NIN	
								3 V UGS _%6	%3Ik5D	%Wk66	fW`5	1ND	
								LV UGS _%k	%TE51	%NDWN	BBI5	1f`D	
3 V UGS _%D	1B6LDD	NDNf6D	1`I	L	D	DDDB	DDDB	3 V UGS _%N	f`Ek1	ND65	BBIW	1f`D	
								LV UGS _%D	%TE5B	%NDW	BBIW	1NII	
3 V UGS _%N	1B6LDD	NDND6k	1`I	L	D	DDDB	DDDB	3 V UGS _%D	%TEkB	%NNIB	B6`N	1DII	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
								3 V UGS _%f	B11 6B	f TN1 f	51Tk	1NB	
								LV UGS _%N	%6TE5B	%NDWf	BBBk	1f TD	
3 V UGS _%f	1B56DD	NDDIIDI	1Tf	D	D	DDDB	DDDB	JU%/N	1T515	BBBfB	Nk1T5	1Nf	
								3 V UGS _%N	%BIIB6	%6Tf f D	51Tl	1Nf	
								3 V UGS _%1	%6TBkI	%NNBW	B6Tf	1Dk	
								LV UGS _%f	%6TE5B	%NDWN	BB5	1f TD	
3 V UGS _%I	1B56DD	NDDIIf 6	1TB	D	D	DDDB	DDDB	51- I .	f kTNDB	NTBDB	B1BIl	1DII	
								3 V UGS _%5	%BBWf 6	%NNI BW	BB1TW	1D5	
								LV UGS _%I	%6TE5B	%NDWN	BB5	1f TD	
3 V UGS _%B	1B56DD	NDDIf 1W	1Tf	D	D	DDDB	DDDB	3 V UGS _%6	f TBk1	NID6W	B6TD	1f TD	
								LV UGS _%B	%6TE51	%NID61	B6TD	1f TD	
3 V UGS _%6	1B56DD	NDDIf 6N	1Tf	D	D	DDDB	DDDB	51- N	f BB6W	NNIT 5I	B6f TD	1Dk	
								3 V UGS _%ND	%NlTWNf	%Tf f 1	I WN5	1D5	
								3 V UGS _%B	%6TBk5	%NDI 5	B6Tf	1NB	
								LV UGS _%6	%6TE51	%NID61	B6TN	1f TD	
3 V UGS _%W	1B56DD	NDNBf k	1T5	D	D	DDDB	DDDB	3 V UGS _%k	f TBk1	NID61	BB5	1f TD	
								LV UGS _%W	%6TE5B	%NDWf	BB5W	1NII	
3 V UGS _%k	1B56DD	NDNTI N	1T5	D	D	DDDB	DDDB	3 V UGS _%W	%6TBkk	%NDIk	BB5k	1NB	
								3 V UGS _%5	B11 6W	f TN66	51Tf	1Nk	
								LV UGS _%k	%6TE5B	%NDWf	BB5W	1NII	
3 V UGS _%5	1B56DD	NDNNBW	1T5	D	D	DDDB	DDDB	3 V UGS _%I	f BNWf	NNIf 6I	BB5T5	1ND	
								3 V UGS _%k	%BIIBk	%6TN1 D	51T5	1NB	
								3 V UGS _%I	%kTf 1 W	%5TDD6	I N5IB	1Dk	
								LV UGS _%5	%6TE5B	%NDWf	BB5k	1NII	
3 V UGS _%1	1B56DD	NDNNN D	1Tf	D	D	DDDB	DDDB	3 V UGS _%f	f TBk1	NID65	BB5W	1f TD	
								LV UGS _%1	%6TE5B	%NDWf	BB5k	1NII	
3 V UGS _%N	1B56DD	NDf TDD6	1TW	D	D	DDDB	DDDB	3 V UGS _%f	f TE5D	NDWD	BB5f	1NII	
								LV UGS _%N	%6TE5B	%NDWB	BB5I	1NII	
3 V UGS _%f	1B56DD	NDNkf B	1TW	D	D	DDDB	DDDB	3 V UGS _%N	%6TBkf	%NNkI	B6TD	1DB	
								3 V UGS _%1	B11 6f	f Tf 1 f	51TB	1Nf	
								LV UGS _%f	%6TE5B	%NDWf	BB5B	1NII	
3 V UGS _%I	1B56DD	NDN65f	1TW	D	D	DDDB	DDDB	3 V UGS _%5	NkTf 16	k5Nk	I NTk	1NN	
								3 V UGS _%f	%BIIBB	%6Tf 61	51T5	1ND	
								3 V UGS _%B	%T5kN	%BB11	Nk5Tk	1ND	
								LV UGS _%I	%6TE5B	%NDWf	BB5	1NII	
3 V UGS _%B	1B56DD	NDNkW6	1TW	D	D	DDDB	DDDB	3 V UGS _%I	1T551	BBBWN	Nk5TB	1Nf	
								3 V UGS _%W	%BIII 1	%6Tf N5	51TD	1Nf	
								3 V UGS _%1	%6TBkN	%NN5I	B6TN	1Df	
								LV UGS _%B	%6TE5B	%NDWB	BB5B	1NII	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	. ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	. 2 4	p P-	p _a4
3 V UGS _%W	1B%DD	NDf%N	1%W	D	D	DDDB	DDDB	3 V UGS _%B	B%6k	f%6D	55%6	1Nk	
								3 V UGS _%k	%%Bk5	%NDD51	BBBB	1N5	
								LV UGS _%W	%%BE5B	%NDW8	BBB%	1N%	
3 V UGS _%k	1B%DD	NDf%N1N	1%W	D	D	DDDB	DDDB	3 V UGS _%W	f%E5D	NDW%	BB%f	1N%	
								LV UGS _%k	%%BE5B	%NDW6	BB%%	1N%	
3 V UGS _%1	1B%DD	NDf%Dkf	1%W	D	D	DDDB	DDDB	3 V UGS _%B	f%E5D	NDW%	BB%f	1N%	
								LV UGS _%1	%%BE5B	%NDW8	BB%%	1N%	
3 V UGS _%BD	1B%DD	NDf%N56	1%%	D	D	DDDB	DDDB	51- B.	f%BW%k	N%f%W	BBB%D	1D5	
								3 V UGS _%BW	%f%N1k	%NDI DD	I 11%%	1Dk	
								LV UGS _%BD	%%BE5B	%NDW6	BB%%	1N%	
3 V UGS _%BN	1B%DD	NDI%f1 B	NDIf	D	D	DDDB	DDDB	JU%B/N	f%E5D	NDW8	B%%k	1N%	
								LV UGS _%BN	%%BE5B	%NDWk	B%%5	1N%	
3 V UGS _%Bf	1B%DD	NDI%NWB	NDIf	D	D	DDDB	DDDB	JU%B/N	1%5kk	B%B11	NkW%N	1ND	
								3 V UGS _%B1	%k%I 1k	%%B%W	N%f%I	1Dk	
								LV UGS _%Bf	%%BE5B	%NDWk	B%%I	1N%	
3 V UGS _%B1	1B%DD	NDI%f1f	NDIf	D	D	DDDB	DDDB	JU%B/N	f%E5D	NDW8	B%%k	1N%	
								LV UGS _%B1	%%BE5B	%NDWk	B%%5	1N%	
3 V UGS _%BB	1B%DD	NDf%5kB	NDIN	D	D	DDDB	DDDB	JU%B/N	%N%k1W	%Wk1N	f%W%5	1DI	
								3 V UGS _%B6	NkT%kW	k%56B	I D5%k	1ND	
								LV UGS _%BB	%%BE5B	%NDWW	BB%D	1N%	
3 V UGS _%B6	1B%DD	NDf%NWf	NDIN	D	D	DDDB	DDDB	3 V UGS _%BB	%NkT%B5	%%I16N	I DI%W	1D5	
								3 V UGS _%BW	N%%kf5	1%DN1	I 61%6	1ND	
								LV UGS _%B6	%%BE5B	%NDWW	BB%N	1N%	
3 V UGS _%BW	1B%DD	NDf%I 5W	NDID	D	D	DDDB	DDDB	3 V UGS _%BD	ff%NW	NDIf%5	I 11%D	1D5	
								3 V UGS _%B6	%N%W51	%%N6W	I 6B%I	1Dk	
								LV UGS _%BW	%%BE5B	%NDW6	BB%f	1N%	
3 V UGS _%B5	1B%DD	NDI%kk5	NDIN	D	D	DDDB	DDDB	3 V UGS _%B1	f%E5D	NDW6	B%%6	1N%	
								LV UGS _%B5	%%BE5B	%NDWI	B%%W	1N%	
3 V UGS _%B1	1B%DD	NDI%W5k	NDIf	D	D	DDDB	DDDB	3 V UGS _%Bf	k%B16	1%%kD	N%N%N	1N5	
								3 V UGS _%B5	%%Bk5	%%NDI	B%%5	1NB	
								3 V UGS _%6D	%%Bk5	%%NDIf	B%%5	1NB	
								LV UGS _%B1	%%BE5B	%NDWI	B%%W	1N%	
3 V UGS _%6D	1B%DD	NDI%kk6	NDIN	D	D	DDDB	DDDB	3 V UGS _%B1	f%E5D	NDW6	B%%6	1N%	
								LV UGS _%6D	%%BE5B	%NDWI	B%%W	1N%	
* POv	N%5DDD	NDDDDD	DID	%NDf%NN6	%1%kNB	D	D	51_N	%NDf%NN6	%1%kNB	BB1%I	16D	
3 P_~I	N%5DD	NDD6f1	1%%	D	D	D	D	HV UGS 3 P_ & 51_NU	DDDD	DDDD	DID	DID	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DIN3 V.

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
5N-06	1BGDD	0DDDkB	ND	E	D	E	E	3 V U1 S _%G	%BGDI	%0'BBW	BG'B	NDW	
								5N_0U	fBGDI	0'BBW	BG'B	NDW	
5N-f6	1BGDD	0DDDkB	ND	E	D	E	E	JU%/0	%WNkk	%f'GDf	BNkf	NDk	
								5N_0U	fWNkk	0f'GDf	BNkf	NDk	
5N-I6	1BGDD	0DDDkB	ND	E	D	E	E	3 V U1 S _%I	%WNf0	%f'Wf	BNkI	NDG	
								5N_0U	fWNf0	0f'Wf	BNkI	NDG	
5N-B6	1BGDD	0DDDkB	ND	E	D	E	E	3 V U1 S _%BD	%BfBN	%f'ff'G	BGBD	5NI	
								5N_0U	fBfBN	0f'ff'G	BGBD	5NI	
5N_06	015TDDD	NGD0D	DD	E	D	E	E	POv	0Df'DI5	I1'GI0	Bk1'B	NGD	
								HV U1 S 3 P_	%0Df'DI5	%1'GI0	Bk1'B	NGD	
5N_0U	1BGDD	0DDDkB	ND	E	D	DDDD	%BDDW	5N-B6	%BfBN	%f'ff'G	BGBD	5NI	
								5N-I6	%WNf0	%f'Wf	BNkI	NDG	
								5N-f6	%WNkk	%f'GDf	BNkf	NDk	
								5N-06	%BGDI	%0'BBW	BG'B	NDW	
								3 P_~I	0Df'WWD	G'5 00	0N DW	55'N	
								& HV U1 S 3 P_					
HV U1 S 3 P_	015TDDD	NGD0D	DD	E	D	DDB5	DD1I	5N_06	0Df'DI5	I1'GI0	Bk1'B	NGD	
								5N_0U	%0Df'D5W	%1'WWB	Bk1'5	NGD	0'5kG
								& 3 P_~I					
JU%/0	1BGDD	0DDkBk	NI	E	D	E	E	3 V U1 S _%k	%k'f1I	%k'51G	10BG	NO'D	
								3 V U1 S _%f	%N5WW	%BBGB	0kN5	NO'D	
								5N-f6	fk'DNN	0f'5N	BNBI	NO'D	
JU%B/0	1BGDD	0DI'IfD	0DD	E	D	E	E	3 V U1 S _%B0	%'Bk5	%0'D5G	BI'5	NO'W	
								3 V U1 S _%Bf	%N5kk	%BBWB	0kGW	NO'D	
								3 V U1 S _%BI	%'Bk5	%0'D5B	BI'5	NO'W	
								3 V U1 S _%BB	0B51I	WWI	fW'If	NO'I	
LV U1 S _%D0	DWND	0DGfBG	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%D0	f'GDD	0'fDD	ffDBK	NDf	
LV U1 S _%Df	DWND	0DGDf'N	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%Df	f'GDD	0'fDD	ffDk'f	NDf	
LV U1 S _%DI	DWND	0DBNf	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%DI	f'GDD	0'fDD	ff00'I	NDf	
LV U1 S _%DB	DWND	0DBkN0	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%DB	f'GDD	0'fDD	ff0B'I	NDf	
LV U1 S _%DG	DWND	0DBDkN	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%DG	f'GDD	0'fDD	ff05'5	NDf	
LV U1 S _%DW	DWND	0DBfBWB	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%DW	f'GDD	0'fDD	fff0'I	NDf	
LV U1 S _%Dk	DWND	0DBfN0	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%Dk	f'GDD	0'fDD	ffff'5	NDf	
LV U1 S _%D5	DWND	0DBfNN	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%D5	f'GDD	0'fDD	ffff'W	NDf	
LV U1 S _%DN	DWND	0DBDI0	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%DN	f'GDD	0'fDD	fff5'I	NDf	
LV U1 S _%0D	DWND	0DI'NkW	0f'D	f'GDD	0'fDD	E	E	3 V U1 S _%0D	f'GDD	0'fDD	ff10'W	NDf	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
LV U1 S _%0I	DWND	0DBWBB	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%0I	f`GDD	0f`DD	ff0k`B	NDf	
LV U1 S _%0B	DWND	0DBGWB	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%0B	f`GDD	0f`DD	ff0ND	NDf	
LV U1 S _%0G	DWND	0DBDWk	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%0G	f`GDD	0f`DD	fffk`G	NDf	
LV U1 S _%0W	DWND	0DBGGI	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%0W	f`GDD	0f`DD	ff0NI	NDf	
LV U1 S _%0k	DWND	0DI`kNG	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%0k	f`GDD	0f`DD	ff1GG	NDf	
LV U1 S _%5D	DWND	0DBfGB	00`N	f`GDD	0f`DD	E	E	3 V U1 S _%5D	f`GDD	0f`DD	fffGk	NDf	
LV U1 S _%50	DWND	0DBDWW	00`N	f`GDD	0f`DD	E	E	3 V U1 S _%50	f`GDD	0f`DD	fffNk	NDf	
LV U1 S _%5f	DWND	0DI`N0W	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%5f	f`GDD	0f`DD	ff1f`N	NDf	
LV U1 S _%5I	DWND	0DI`NIW	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%5I	f`GDD	0f`DD	ff1f`G	NDf	
LV U1 S _%5B	DWND	0DI`If W	00`N	f`GDD	0f`DD	E	E	3 V U1 S _%5B	f`GDD	0f`DD	ffBGk	NDf	
LV U1 S _%5G	DWND	0DI`f5f	00`N	f`GDD	0f`DD	E	E	3 V U1 S _%5G	f`GDD	0f`DD	ffBWW	NDf	
LV U1 S _%5W	DWND	0DBIBf`B	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%5W	f`GDD	0f`DD	ffff`D	NDf	
LV U1 S _%5k	DWND	0DBfI10	0f`D	f`GDD	0f`DD	E	E	3 V U1 S _%5k	f`GDD	0f`DD	fffBD	NDf	
LV U1 S _%55	DWND	0DBDCI0	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%55	f`GDD	0f`DD	fffk`N	NDf	
LV U1 S _%5N	DWND	0DBD1k	00`N	f`GDD	0f`DD	E	E	3 V U1 S _%5N	f`GDD	0f`DD	fff5`f	NDf	
LV U1 S _%50	DWND	0DBN5W	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%50	f`GDD	0f`DD	ff0Df	NDf	
LV U1 S _%5f	DWND	0DBk0I	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5f	f`GDD	0f`DD	ff0GN	NDf	
LV U1 S _%5I	DWND	0DBCkB	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5I	f`GDD	0f`DD	ff05`N	NDf	
LV U1 S _%5B	DWND	0DBkGI	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5B	f`GDD	0f`DD	ff0GD	NDf	
LV U1 S _%5W	DWND	0DGDDD	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5W	f`GDD	0f`DD	ffDk`5	NDf	
LV U1 S _%5k	DWND	0DGDW5	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5k	f`GDD	0f`DD	ffDWI	NDf	
LV U1 S _%5N	DWND	0DGIDC0	0f`f	f`GDD	0f`DD	E	E	3 V U1 S _%5N	f`GDD	0f`DD	ffD5`5	NDf	
LV U1 S _%BD	DWND	0DGDW0	0f`G	f`GDD	0f`DD	E	E	3 V U1 S _%BD	f`GDD	0f`DD	ffDWG	NDf	
LV U1 S _%B0	DWND	0DWD5D	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%B0	f`GDD	0f`DD	f05GI	NDf	
LV U1 S _%Bf	DWND	0DWD0f	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%Bf	f`GDD	0f`DD	f05Wk	NDf	
LV U1 S _%BI	DWND	0DWDk5	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%BI	f`GDD	0f`DD	f05GI	NDf	
LV U1 S _%BB	DWND	0DG5f`N	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%BB	f`GDD	0f`DD	f0N`G	NDf	
LV U1 S _%BG	DWND	0DGWfB	0f`W	f`GDD	0f`DD	E	E	3 V U1 S _%BG	f`GDD	0f`DD	f0NW5	NDf	
LV U1 S _%BW	DWND	0DGIGW	0f`W	f`GDD	0f`DD	E	E	3 V U1 S _%BW	f`GDD	0f`DD	ffDf`B	NDf	
LV U1 S _%B5	DWND	0DWk0D	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%B5	f`GDD	0f`DD	f0kBG	NDf	
LV U1 S _%BN	DWND	0DWWf0	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%BN	f`GDD	0f`DD	f0kWI	NDf	
LV U1 S _%GD	DWND	0DWkDk	0f`k	f`GDD	0f`DD	E	E	3 V U1 S _%GD	f`GDD	0f`DD	f0kBG	NDf	
3 V U1 S _%50	IBGDD	0Df`BIG	NG	E	D	DDDB	DDDB	3 V U1 S _%5f	f`B5D	0`DGf	BBD	Nf`D	
								LV U1 S _%50	%fB5B	%`DGW	BBD	Nf`D	
3 V U1 S _%5f	IBGDD	0Df`I0W	NG	E	D	DDDB	DDDB	3 V U1 S _%50	%fBkk	%`DDD	BBI	N`fB	
								3 V U1 S _%5I	BfNGW	f`DGf	55`B	N`fk	
								LV U1 S _%5f	%fB5B	%`DGG	BBD	Nf`D	
3 V U1 S _%5I	IBGDD	0Df`D0G	NG	E	D	DDDB	DDDB	3 V U1 S _%5f	%BfNBW	%fDN0	55`W	N`fB	
								3 V U1 S _%5B	kBfG	I`fBf	0If`5	N`fW	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								LV U1 S _%I	%fTE5B	%fDCG	BBIf	NfTD	
3 V U1 S _%B	1BGDD	0DD'fNkD	NG	E	D	DDDB	DDDB	3 V U1 S _%I	%fTB0G	%fT5W	01I'D	N0'fB	
								3 V U1 S _%G	N5NB	BfI1W	0kkfI	N0'fW	
								LV U1 S _%B	%fTE5B	%fDCB	BBIf	NfTD	
3 V U1 S _%G	1BGDD	0DD'fkGI	NG	E	D	DDDB	DDDB	3 V U1 S _%B	%N5kI	%BfI5f	0kkfW	N0'fB	
								3 V U1 S _%5	0fTGI	GBIf	ff0'fN	N0'fG	
								LV U1 S _%G	%fTE5B	%fDCB	BBIB	NfTD	
3 V U1 S _%W	1BGDD	0DD'fWG	NB	E	D	DDDB	DDDB	3 V U1 S _%k	fTE5D	0'fDCD	BBIf	NfTD	
								LV U1 S _%W	%fTE5B	%fDCB	BBIB	NfTD	
3 V U1 S _%k	1BGDD	0DD'fGWD	NB	E	D	DDDB	DDDB	3 V U1 S _%W	%fTEk5	%fD5D	BBIG	N0'fk	
								3 V U1 S _%W	%fTEkG	%fD0W	BBIk	N0'fI	
								3 V U1 S _%G	kfBIf	I'fTBG	01I'fW	N0'fW	
								LV U1 S _%k	%fTE5B	%fDCI	BBIG	NfTD	
3 V U1 S _%5	1BGDD	0DD'fGW5	NG	E	D	DDDB	DDDB	3 V U1 S _%G	%fTI1I	%GfGDW	fffTW	N0'fI	
								3 V U1 S _%N	0B50I	WGWW	fWkfD	N0'fB	
								LV U1 S _%5	%fTE5B	%fDCI	BBIG	NfTD	
3 V U1 S _%N	1BGDD	0DD'fNB	NB	E	D	DDDB	DDDB	3 V U1 S _%5	%BfIk5	%WWWD	fWkf5	N0'fI	
								3 V U1 S _%D	0kfTGk	k'fkD5	I0fTI	N0'fI	
								LV U1 S _%N	%fTE5B	%fDCI	BBIW	NfTD	
3 V U1 S _%D	1BGDD	0DD'fDIB	NB	E	D	DDDB	DDDB	3 V U1 S _%N	%0kfTIG	%k'fk5	I0fTN	N0'fD	
								3 V U1 S _%G	0NfK0G	5'f5fW	IGkfB	N0'fI	
								LV U1 S _%D	%fTE5B	%fDCf	BBIW	NfTD	
3 V U1 S _%I	1BGDD	0DD'f50N	NI	E	D	DDDB	DDDB	3 V U1 S _%B	fTE5D	0'fDCD	BBIf	NfTD	
								LV U1 S _%I	%fTE5B	%fDCB	BBIf	NfTD	
3 V U1 S _%B	1BGDD	0DD'fkI5	NI	E	D	DDDB	DDDB	3 V U1 S _%I	%fTEkk	%fD5I	BBIG	N0'fW	
								3 V U1 S _%G	BfNGk	f'fDII	55'f5	N0'fN	
								LV U1 S _%B	%fTE5B	%fDCB	BBIB	NfTD	
3 V U1 S _%G	1BGDD	0DD'fTI0	NB	E	D	DDDB	DDDB	3 V U1 S _%k	%fTB0G	%fT0I	01IBD	N0'fI	
								3 V U1 S _%B	%BfNG	%fTf0D	5NI	N0'fI	
								3 V U1 S _%k	0B5f1D	WGkf	fWkfN	N0'fB	
								LV U1 S _%G	%fTE5B	%fDCI	BBIW	NfTD	
3 V U1 S _%W	1BGDD	0DD'fkfW	NB	E	D	DDDB	DDDB	3 V U1 S _%k	fTE5D	0'fDCD	BBIf	NfTD	
								LV U1 S _%W	%fTE5B	%fDCB	BBIB	NfTD	
3 V U1 S _%k	1BGDD	0DDNBN	NI	E	D	DDDB	DDDB	JU%/0	0kfTW0	k'fkBN	I0I'fk	N0'fI	
								3 V U1 S _%G	%BfK50	%WkDf	fWNfD	N0'fD	
								LV U1 S _%k	%fTE5B	%fDCf	BBIk	NfTD	
3 V U1 S _%D	1BGDD	0DD'fB0N	Nf	E	D	DDDB	DDDB	3 V U1 S _%0	fTE5D	0'fDBN	BBIB	NfTD	
								LV U1 S _%D	%fTE5B	%fDCI	BBIG	NfTD	
3 V U1 S _%0	1BGDD	0DD'ffk	Nf	E	D	DDDB	DDDB	3 V U1 S _%D	%fTEkB	%fDfG	BBIN	N0'fD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
								3 V U1 S _%f	BfNGB	f`DkB	5NfB	NO`fW	
								LV U1 S _%0	%`fE5B	%0DGf	BBfW	Nf`D	
3 V U1 S _%f	1BGDDD	0D0`DkI	NfI	D	D	DDDB	DDDB	JU%/0	NfNf5	BI`55	0kNI	NO`B	
								3 V U1 S _%0	%BfNBW	%`fDf	5NfW	NO`B	
								3 V U1 S _%N	%`fEkI	%0D15	BGfD	NDfN	
								LV U1 S _%f	%`fE5B	%0DGf	BBfk	Nf`D	
3 V U1 S _%I	1BGDDD	0D0`DNB	NfB	D	D	DDDB	DDDB	5N-16	fk`DDW	0f`IDk	BNf`f5	NO`D	
								3 V U1 S _%5	%BfNWk	%00`fGN	BB5`f	NDfN	
								LV U1 S _%I	%`fE5B	%0DGf	BBfW	Nf`D	
3 V U1 S _%B	1BGDDD	0DDfBWN	NfD	D	D	DDDB	DDDB	3 V U1 S _%G	f`fEkN	0`DBk	BBf5	Nf`D	
								LV U1 S _%B	%`fE5I	%0DGD	BBfN	Nf`D	
3 V U1 S _%G	1BGDDD	0DDBf`B	NfD	D	D	DDDB	DDDB	5N-06	fBfGk0	00`IDW	BGDk	NDf5	
								3 V U1 S _%D	%NNW0B	%NDkD	I WD5	NDfW	
								3 V U1 S _%B	%`fEk5	%0D5N	BGfD	NO`G	
								LV U1 S _%G	%`fE5I	%0DGD	BBfN	Nf`D	
3 V U1 S _%W	1BGDDD	0D0`DNG	NfG	D	D	DDDB	DDDB	3 V U1 S _%k	f`fE5D	0`DGD	BBfB	Nf`D	
								LV U1 S _%W	%`fE5B	%0DGI	BBfB	Nf`D	
3 V U1 S _%k	1BGDDD	0D0`fBN5	NfG	D	D	DDDB	DDDB	3 V U1 S _%W	%`fEkk	%0D55	BBfW	NO`fW	
								3 V U1 S _%5	BfNGk	f`D1k	5NfD	NO`f5	
								LV U1 S _%k	%`fE5B	%0DGI	BBfG	Nf`D	
3 V U1 S _%5	1BGDDD	0D0`f0B	NfG	D	D	DDDB	DDDB	3 V U1 S _%I	fBfNWf	00`DWG	BBk`f	NO`D	
								3 V U1 S _%k	%BfNBk	%`fDkf	5Nff	NO`fW	
								3 V U1 S _%I	%kTf1k	%`fNBB	I 01`fG	NDf5	
								LV U1 S _%5	%`fE5B	%0DGI	BBfW	Nf`D	
3 V U1 S _%N	1BGDDD	0D0`fDD	NfI	D	D	DDDB	DDDB	3 V U1 S _%f	f`fEkN	0`DBN	BBfG	Nf`D	
								LV U1 S _%N	%`fE5B	%0DGI	BBfW	Nf`D	
3 V U1 S _%0	1BGDDD	0D`DkD	NfW	D	D	DDDB	DDDB	3 V U1 S _%f	f`fE5D	0`DGD	BBfD	Nf`D	
								LV U1 S _%0	%`fE5B	%0DGG	BBfI	Nf`D	
3 V U1 S _%f	1BGDDD	0D0`f5ND	NfW	D	D	DDDB	DDDB	3 V U1 S _%0	%`fEkf	%0DWB	BBfN	NDfG	
								3 V U1 S _%I	BfNGf	f`fT0B	5NfD	NO`fI	
								LV U1 S _%f	%`fE5B	%0DGB	BBfI	Nf`D	
3 V U1 S _%I	1BGDDD	0D0`fkB5	NfW	D	D	DDDB	DDDB	3 V U1 S _%5	0kTfNW	k`fkGB	I 00`f5	NO`fI	
								3 V U1 S _%f	%BfNBB	%`fTB0	5Nfl	NO`D	
								3 V U1 S _%B	%Nf5kf	%BfBWf	0k5`f	NO`D	
								LV U1 S _%I	%`fE5B	%0DGB	BBfB	Nf`D	
3 V U1 S _%B	1BGDDD	0D0`fN10	NfW	D	D	DDDB	DDDB	3 V U1 S _%I	Nf5ND	BfBf`G	0kk`fN	NO`fI	
								3 V U1 S _%W	%BfNIN	%`fTDD	55`f5	NO`fI	
								3 V U1 S _%N	%`fEkf	%0DkB	BBfN	NDfI	
								LV U1 S _%B	%`fE5B	%0DGB	BBfI	Nf`D	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agT	6 ngT	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	6 2 4	p P-	p _a4
3 V U1 S _%W	1 BGDD	0DfT5k	NW	E	D	DDDB	DDDB	3 V U1 S _%B	BNG5	f`D1 0	55T	NON	
								3 V U1 S _%k	%TBk5	%TD5D	BBf	NOk	
								LV U1 S _%W	%TE5B	%TDGG	BBf	Nf`D	
3 V U1 S _%k	1 BGDD	0DfTGW	NW	E	D	DDDB	DDDB	3 V U1 S _%W	f`E5D	0TDGf	BBD	Nf`D	
								LV U1 S _%k	%TE5B	%TDGW	BBD	Nf`D	
3 V U1 S _%N	1 BGDD	0DfTf1k	NW	E	D	DDDB	DDDB	3 V U1 S _%B	f`E5D	0TDG0	BBD	Nf`D	
								LV U1 S _%N	%TE5B	%TDGG	BBf	Nf`D	
3 V U1 S _%BD	1 BGDD	0DfTBN	NN	E	D	DDDB	DDDB	5N-B6	fBW05	00TkI	BBf`k	NDN	
								3 V U1 S _%BW	%f`D1 N	%0Dff0	I N5`k	ND5	
								LV U1 S _%BD	%TE5B	%TDGG	BBD	Nf`D	
3 V U1 S _%B0	1 BGDD	0DITNB	0DD	E	D	DDDB	DDDB	JU%B/0	f`E5D	0TDGB	BlTW	Nf`D	
								LV U1 S _%B0	%TE5B	%TDG5	BlTk	Nf`D	
3 V U1 S _%Bf	1 BGDD	0DITfI	0DD	E	D	DDDB	DDDB	JU%B/0	N5k5	BBW	0kGW	NOD	
								3 V U1 S _%BN	%TN5	%TBDN	0I 0`N	ND5	
								LV U1 S _%Bf	%TE5B	%TDG5	BlTk	Nf`D	
3 V U1 S _%Bl	1 BGDD	0DITNf	0DD	E	D	DDDB	DDDB	JU%B/0	f`E5D	0TDGB	BlTW	Nf`D	
								LV U1 S _%Bl	%TE5B	%TDG5	BlTk	Nf`D	
3 V U1 S _%BB	1 BGDD	0DITDIB	0DD	E	D	DDDB	DDDB	JU%B/0	%BkNk	%WK15	f`WBD	NOD	
								3 V U1 S _%BG	0kTkk	k`kN0	I Dk`5	NOf	
								LV U1 S _%BB	%TE5B	%TDGk	BlTN	Nf`D	
3 V U1 S _%BG	1 BGDD	0Df`5f`B	0DD	E	D	DDDB	DDDB	3 V U1 S _%BB	%kTBN	%T55N	I D5`k	NDN	
								3 V U1 S _%BW	0NkfN	5`NBf	I GF`G	NOD	
								LV U1 S _%BG	%TE5B	%TDGk	BlTN	Nf`D	
3 V U1 S _%BW	1 BGDD	0Df`GBN	NN	E	D	DDDB	DDDB	3 V U1 S _%BD	ff`DkD	0DD15	I Nk`5	NDN	
								3 V U1 S _%BG	%NMWD	%ND5W	I GI`N	ND5	
								LV U1 S _%BW	%TE5B	%TDGW	BBD	Nf`D	
3 V U1 S _%B5	1 BGDD	0DITNW	0DD	E	D	DDDB	DDDB	3 V U1 S _%BN	f`E5D	0TDGW	BlTB	Nf`D	
								LV U1 S _%B5	%TE5B	%TDWD	BlTG	Nf`D	
3 V U1 S _%BN	1 BGDD	0DI`5BG	0DD	E	D	DDDB	DDDB	3 V U1 S _%Bf	k`BlG	I`fBl	01 D`k	NOk	
								3 V U1 S _%B5	%TBk5	%TDNB	BlTW	NOG	
								3 V U1 S _%GD	%TBk5	%TDNI	BlTW	NOG	
								LV U1 S _%BN	%TE5B	%TDGN	BlTG	Nf`D	
3 V U1 S _%GD	1 BGDD	0DITNI	0DD	E	D	DDDB	DDDB	3 V U1 S _%BN	f`E5D	0TDGW	BlTB	Nf`D	
								LV U1 S _%GD	%TE5B	%TDWD	BlTG	Nf`D	
* POv	01 5TDDD	NGIDDD	DD	%DfTD1G	%1TG00	E	E	5N_06	%DfTD1G	%1TG00	BkI`B	NGD	
3 P_~I	01`5LD	0DDWW5	N5	E	D	E	E	HV U1 S 3 P_ & 5N_0U	DDDD	DDDD	DD	DD	

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than DD 3 V6

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agD	0 ngD	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	0 2 4	p P-	p _a4
5. - N0	1 BDCGG	NGf I0i N	5D	C	G	C	C	3 V U6 S _%1	%BDI f	%NDk5	BBf I0i	. N0i	
								5. _NU	fBDI f	NNDk5	BBf I0i	. N0i	
5. - f 0	1 BDCGG	NGf I0i N	5D	C	G	C	C	JU%/N	%TD. k	%NDN .	B5 1I5	. NDN	
								5. _NU	f TD. k	NfDN .	B5 1I5	. NDN	
5. - I 0	1 BDCGG	NGf I0i N	5D	C	G	C	C	3 V U6 S _%I	%TDBB	%NfDBT	B5 TI0i	. GD	
								5. _NU	f TDBB	NfDBT	B5 TI0i	. GD	
5. - B0	1 BDCGG	NGf I0i N	5D	C	G	C	C	3 V U6 S _%BG	%BI0k5	%Nf I0N5	BBBI0	5. D	
								5. _NU	fBI0k5	Nf I0N5	BBBI0	5. D	
5. _N0	N. 5I0CGG	NGl I0Gi	GI0i	C	G	C	C	POv	NGf I0 1 .	I I DBBN	Bf 5D	. 1I0i	
								HV U6 S 3 P_	%NGf I0 1 .	%1 DBBN	Bf 5D	. 1I0i	
5. _NU	1 BDCGG	NGf I0i N	5D	C	G	GI0CGG	%BDNIk	5. - B0	%BI0k5	%Nf I0N5	BBBI0	5. D	
								5. - I 0	%TDBB	%NfDBT	B5 TI0i	. GD	
								5. - f 0	%TD. k	%NDN .	B5 1I5	. NDN	
								5. - N0	%BDI f	%NDk5	BBf I0i	. N0i	
								3 P_~I	NGf I0 1N	1NDCk	N5 5kD	5. D	
								& HV U6 S 3 P_					
HV U6 S 3 P_	N. 5I0CGG	NGl I0Gi	GI0i	C	G	GI0i .	GDNTI	5. _N0	NGf I0 1 .	I I DBBN	Bf 5D	. 1I0i	
								5. _NU	%NGf I0. 5	%1 DGI	Bf . I0i	. 1I0i	NGI0CGG
								& 3 P_~I					
JU%/N	1 BDCGG	NGf I0NB	5D	C	G	C	C	3 V U6 S _%k	%kI0BI	%DBf 5	I Gk I0	. ND	
								3 V U6 S _%f	%I5kN	%BDI f	Nk1D	. NDT	
								5. - f 0	fkDNB	NNDTG	B5 f I5	. ND	
JU%B/N	1 BDCGG	NGl I0Nk	. I0	C	G	C	C	3 V U6 S _%BN	%I0k.	%NOi f	Bf I5	. f I0i	
								3 V U6 S _%Bf	%I55N	%BDI 5	NkNDT	. NDT	
								3 V U6 S _%BI	%I0k.	%NOi f	Bf I5	. f DN	
								3 V U6 S _%BB	NBI5 1 .	TIBBBf	f 1kD	. N0	
LV U6 S _%GN	GDF. G	NGk I0B5	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%GN	f DCGG	NDNTG	f N1 BI0	. GI0	
LV U6 S _%Gf	GDF. G	NGI D1 B	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%Gf	f DCGG	NDNTG	f N1 TD	. GI0	
LV U6 S _%GI	GDF. G	NGI TD0Bf	NN0	f DCGG	NDNTG	C	C	3 V U6 S _%GI	f DCGG	NDNTG	f NTGI0B	. GI0	
LV U6 S _%GB	GDF. G	NGI TDGI	NN0	f DCGG	NDNTG	C	C	3 V U6 S _%GB	f DCGG	NDNTG	f N1 I D	. GI0	
LV U6 S _%GI	GDF. G	NGI TD. T	NN0	f DCGG	NDNTG	C	C	3 V U6 S _%GI	f DCGG	NDNTG	f N1k I0	. GI0	
LV U6 S _%GT	GDF. G	NGI TD51	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%GT	f DCGG	NDNTG	f NT. I0	. GI0	
LV U6 S _%Gk	GDF. G	NGI TD0NB	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%Gk	f DCGG	NDNTG	f NkND	. GI0	
LV U6 S _%G5	GDF. G	NGI TD0f G	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%G5	f DCGG	NDNTG	f NkN0i	. GI0	
LV U6 S _%Gi	GDF. G	NGl D1 .	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%Gi	f DCGG	NDNTG	f NkTI0B	. GI0	
LV U6 S _%NG	GDF. G	NGl I5G5	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%NG	f DCGG	NDNTG	f Nk. D	. GI0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agD	0 ngD	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	0 2 4	p P-	p _a4
LV U6 S _%Nl	GDI. G	NGlIBBTf	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%Nl	f DCGG	NDNTG	f NTTDN	. GIR	
LV U6 S _%NB	GDI. G	NGlID5B	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%NB	f DCGG	NDNTG	f NIkIR	. GIR	
LV U6 S _%Nl	GDI. G	NGlD. 1	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%Nl	f DCGG	NDNTG	f Nk1DT	. GIR	
LV U6 S _%NT	GDI. G	NGlIDkf	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%NT	f DCGG	NDNTG	f NIlkD	. GIR	
LV U6 S _%Nk	GDI. G	NGlIDI N	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%Nk	f DCGG	NDNTG	f N5I DN	. GIR	
LV U6 S _%6G	GDI. G	NGlI05f	NNDB	f DCGG	NDNTG	C	C	3 V U6 S _%6G	f DCGG	NDNTG	f NkI D	. GIR	
LV U6 S _%6N	GDI. G	NGlI5. 5	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%6N	f DCGG	NDNTG	f NkkIT	. GIR	
LV U6 S _%6f	GDI. G	NGlIR1N	NNDI	f DCGG	NDNTG	C	C	3 V U6 S _%6f	f DCGG	NDNTG	f N5GIR	. GIR	
LV U6 S _%6I	GDI. G	NGlIRT.	NNDT	f DCGG	NDNTG	C	C	3 V U6 S _%6I	f DCGG	NDNTG	f N5GID	. GIR	
LV U6 S _%6B	GDI. G	NGlIDkT	NNDB	f DCGG	NDNTG	C	C	3 V U6 S _%6B	f DCGG	NDNTG	f N f IT	. GIR	
LV U6 S _%61	GDI. G	NGlIDNI	NNDB	f DCGG	NDNTG	C	C	3 V U6 S _%61	f DCGG	NDNTG	f N I ID	. GIR	
LV U6 S _%6T	GDI. G	NGlIDBT	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%6T	f DCGG	NDNTG	f NkGID	. GIR	
LV U6 S _%6k	GDI. G	NGlIDNlB	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%6k	f DCGG	NDNTG	f NkfIB	. GIR	
LV U6 S _%65	GDI. G	NGlIDk5	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%65	f DCGG	NDNTG	f NkTI0i	. GIR	
LV U6 S _%6.	GDI. G	NGlIDTk	NNDB	f DCGG	NDNTG	C	C	3 V U6 S _%6.	f DCGG	NDNTG	f NkTIT	. GIR	
LV U6 S _%kN	GDI. G	NGlIR. B	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%kN	f DCGG	NDNTG	f Nl. IB	. GIR	
LV U6 S _%kf	GDI. G	NGlIDf1	NNI5	f DCGG	NDNTG	C	C	3 V U6 S _%kf	f DCGG	NDNTG	f NIBI5	. GIR	
LV U6 S _%kI	GDI. G	NGlID. G	NNI5	f DCGG	NDNTG	C	C	3 V U6 S _%kI	f DCGG	NDNTG	f NIkIT	. GIR	
LV U6 S _%kB	GDI. G	NGlIDTl	NNI5	f DCGG	NDNTG	C	C	3 V U6 S _%kB	f DCGG	NDNTG	f NIBI0i	. GIR	
LV U6 S _%kT	GDI. G	NGlIDGl	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%kT	f DCGG	NDNTG	f Nlk IN	. GIR	
LV U6 S _%kk	GDI. G	NGlIDkN	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%kk	f DCGG	NDNTG	f Nl1I5	. GIR	
LV U6 S _%k.	GDI. G	NGlI51k	NNDR	f DCGG	NDNTG	C	C	3 V U6 S _%k.	f DCGG	NDNTG	f Nl5IN	. GIR	
LV U6 S _%BG	GDI. G	NGlIDTf	NfIDi	f DCGG	NDNTG	C	C	3 V U6 S _%BG	f DCGG	NDNTG	f NITI0i	. GIR	
LV U6 S _%BN	GDI. G	NGkD1T	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%BN	f DCGG	NDNTG	f NITIN	. GIR	
LV U6 S _%Bf	GDI. G	NGkI55.	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%Bf	f DCGG	NDNTG	f NIkIB	. GIR	
LV U6 S _%BI	GDI. G	NGkD1B	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%BI	f DCGG	NDNTG	f NITIT	. GIR	
LV U6 S _%BB	GDI. G	NGkIDNI	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%BB	f DCGG	NDNTG	f NBf D	. GIR	
LV U6 S _%Bl	GDI. G	NGkIBNI	NfIDN	f DCGG	NDNTG	C	C	3 V U6 S _%Bl	f DCGG	NDNTG	f NBITD	. GIR	
LV U6 S _%BT	GDI. G	NGkIDNlf	NfIDN	f DCGG	NDNTG	C	C	3 V U6 S _%BT	f DCGG	NDNTG	f NIf IN	. GIR	
LV U6 S _%B5	GDI. G	NG5IBkkB	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%B5	f DCGG	NDNTG	f NfI D	. GIR	
LV U6 S _%B.	GDI. G	NG5ID55	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%B.	f DCGG	NDNTG	f NfkIT	. GIR	
LV U6 S _%kG	GDI. G	NG5IBkf	NfIDI	f DCGG	NDNTG	C	C	3 V U6 S _%kG	f DCGG	NDNTG	f NfTI0i	. GIR	
3 V U6 S _%GN	IBDCGG	NGBIDTG	. IN	C	G	GI0CB	GI0CB	3 V U6 S _%Gf	f IB5G	N0N5	BI I0i	. f D	
								LV U6 S _%GN	%IBk51	%N0if	BI IN	. f D	
3 V U6 S _%GT	IBDCGG	NGBIDBB	. IN	C	G	GI0CB	GI0CB	3 V U6 S _%GN	%IBkk	%N0iT5	BI ID	. N5	
								3 V U6 S _%GI	BD15	f I05T	5TID	. f D	
								LV U6 S _%Gf	%IB51	%N0if	BI IN	. f D	
3 V U6 S _%GI	IBDCGG	NGBI0Bk	. IN	C	G	GI0CB	GI0CB	3 V U6 S _%Gf	%BDBk	%IDNfk	5TIT	. ND	
								3 V U6 S _%GB	kIBf5	I IDBI	Nf. IR	. f IN	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agD	0 ngD	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	0 2 4	p P-	p _a4
								LV U6 S _%Gl	%lDB51	%MOiFN	BlD	. fD	
3 V U6 S _%GB	IBDCGG	NGlDGl	. DN	C	G	GlOCB	GlOCB	3 V U6 S _%Gl	%lDBNk	%lDN N	NlGlOi	. ND	
								3 V U6 S _%Gl	. I5. 5	BlDG5	NkI D	. flOi	
								LV U6 S _%GB	%lDB51	%MOiFN	BlD	. fD	
3 V U6 S _%Gl	IBDCGG	NGlD. I	. DN	C	G	GlOCB	GlOCB	3 V U6 S _%GB	%lI5kk	%BlD1T	NkI DT	. N5	
								3 V U6 S _%G5	NTD15	1D%kf	fNTI5	. flOi	
								LV U6 S _%Gl	%lDB51	%MOiFN	BlD	. fD	
3 V U6 S _%GT	IBDCGG	NGlD5G	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%Gk	fDB5G	N02NT	BlD	. fD	
								LV U6 S _%GT	%lDB51	%MOiFG	BlDB	. fD	
3 V U6 S _%Gk	IBDCGG	NGlDGT	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%GT	%lDBk5	%MO2k	BlD	. fDN	
								3 V U6 S _%NT	%lDBkT	%MO551	BlDR	. NDT	
								3 V U6 S _%Nl	kDBlB	I DNB5	NlGD	. fDN	
								LV U6 S _%Gk	%lDB51	%MOiFG	BlDB	. fD	
3 V U6 S _%G5	IBDCGG	NGlDNl	. DN	C	G	GlOCB	GlOCB	3 V U6 S _%Gl	%NTD1.	%lD%TN	fNkD	. NR	
								3 V U6 S _%Gi	NB%5N	TDkk	fTGI5	. ND	
								LV U6 S _%G5	%lDB51	%MOiFG	BlDB	. fD	
3 V U6 S _%Gi	IBDCGG	NGlD%BT	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%G5	%NBDR5T	%lDBkk	fTNDT	. NDT	
								3 V U6 S _%NG	NkD%TT	kDB. I	I GlDN	. NR	
								LV U6 S _%Gi	%lDB5B	%MO2N	BlD	. fD	
3 V U6 S _%NG	IBDCGG	NGlI0i N	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%Gi	%NkD%Bl	%lD%Tk	I GlDR	. NDT	
								3 V U6 S _%1	N DRf1	5D%5f	I B. D	. NR	
								LV U6 S _%NG	%lDB5B	%MO2N	BlDT	. fD	
3 V U6 S _%Nl	IBDCGG	NGlDRTG	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%NB	fDB5G	N02Nk	BlD	. fD	
								LV U6 S _%Nl	%lDB51	%MOiFN	BlD	. fD	
3 V U6 S _%NB	IBDCGG	NGlD%5N	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%Nl	%lDBk5	%MOiiN	BlDB	. fDN	
								3 V U6 S _%Nl	BD15	fI0%Ik	5TDR	. fD	
								LV U6 S _%NB	%lDB51	%MOiFN	BlDB	. fD	
3 V U6 S _%Nl	IBDCGG	NGlD%5f	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%Gk	%lDBN5	%lD%fG	NlNO0i	. NR	
								3 V U6 S _%NB	%BD15	%lDNB5	5kD	. NR	
								3 V U6 S _%Nk	NB%51T	TD%5I	fTNDR	. ND	
								LV U6 S _%Nl	%lDB5B	%MO2N	BlD	. fD	
3 V U6 S _%NT	IBDCGG	NGlDT5	. IOi	C	G	GlOCB	GlOCB	3 V U6 S _%Gk	fDB5G	N02Nk	BlD	. fD	
								LV U6 S _%NT	%lDB51	%MOiFG	BlDB	. fD	
3 V U6 S _%Nk	IBDCGG	NGfDNG	5D	C	G	GlOCB	GlOCB	JU%/N	NkD%T.	kDI T	I GlTDB	. NR	
								3 V U6 S _%Nl	%NBDR5.	%lD%fN	fTfI5	. ND	
								LV U6 S _%Nk	%lDB5B	%MO2N	BlDR	. fD	
3 V U6 S _%%G	IBDCGG	NGlDDkN	5D	C	G	GlOCB	GlOCB	3 V U6 S _%%N	fDB5G	N02NT	BlDB	. fD	
								LV U6 S _%%G	%lDB5B	%MOiFG	BlD	. fD	
3 V U6 S _%%N	IBDCGG	NGlDD5I	5D	C	G	GlOCB	GlOCB	3 V U6 S _%%G	%lDBk1	%MOi 1	BlD	. ND	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agD	0 ngD	3 m	3 Mar	3 m	3 Mar	vj	3 m	3 Mar	0 2 4	p P-	p _a4
								3 V U6 S _%f	BD11	f DNG	5kD	. f0G	
								LV U6 S _%N	%DB5B	%N0N	BlDT	. f D	
3 V U6 S _%f	IBDCG	NGI0GI	5D	C	G	G0CB	G0CB	JU%/N	. DG	BD TI	Nk1DN	. ND	
								3 V U6 S _%N	%DBk	%DBG	5kDT	. N5	
								3 V U6 S _%.	%DBkB	%NDG5	BBH0G	. ND	
								LV U6 S _%f	%DB5B	%N0N	BlDT	. f D	
3 V U6 S _%I	IBDCG	NGI0GIN	. I0G	C	G	G0CB	G0CB	5. - I 0	fkDNG	NND5G	B5ND	. ND	
								3 V U6 S _%5	%BDTBG	%GDT1	Bl 5I0G	. NB	
								LV U6 S _%I	%DB5B	%N0N	BlDT	. f D	
3 V U6 S _%B	IBDCG	NGfDBBB	5I5	C	G	G0CB	G0CB	3 V U6 S _%1	fDB5G	N0NI	BlI5	. fDT	
								LV U6 S _%B	%DB5B	%N0Nk	BlD	. f D	
3 V U6 S _%1	IBDCG	NGfDBGG	5I5	C	G	G0CB	G0CB	5. - N0	fBD5k	NN0fI	BBGD	. N5	
								3 V U6 S _%NG	%N DIf5	%1D1f	I 1fDT	. N0G	
								3 V U6 S _%B	%DBk.	%N0i15	BBH0G	. f0G	
								LV U6 S _%1	%DB5B	%N0Nk	BlD	. f D	
3 V U6 S _%T	IBDCG	NGIDI .	. IN	C	G	G0CB	G0CB	3 V U6 S _%k	fDB5G	N0NT	BlD	. f D	
								LV U6 S _%T	%DBS1	%N0fG	BlDB	. f D	
3 V U6 S _%k	IBDCG	NGIDBBI	. IN	C	G	G0CB	G0CB	3 V U6 S _%T	%DBk5	%N0iT	BlDT	. f0G	
								3 V U6 S _%5	BD15	f I0kf	5TD	. f D	
								LV U6 S _%k	%DB5B	%N0fG	BlDB	. f D	
3 V U6 S _%5	IBDCG	NGIDTI	. IN	C	G	G0CB	G0CB	3 V U6 S _%I	fBDIk1	NG5Tf	BlTD	. ND	
								3 V U6 S _%k	%BDB5	%DNG5	5kD	. f0G	
								3 V U6 S _%I	%kDBT	%kR15	IGTD	. N5	
								LV U6 S _%5	%DB5B	%N0N	BlD	. f D	
3 V U6 S _%.	IBDCG	NGID1B	5D	C	G	G0CB	G0CB	3 V U6 S _%f	fDB5G	N0NT	BlDB	. f D	
								LV U6 S _%.	%DB5B	%N0N	BlD	. f D	
3 V U6 S _%N	IBDCG	NGBDNGG	. ID	C	G	G0CB	G0CB	3 V U6 S _%f	fDB5G	N0N5	BlDN	. f D	
								LV U6 S _%N	%DBS1	%N0ff	BlD	. f D	
3 V U6 S _%f	IBDCG	NGI5f1	. ID	C	G	G0CB	G0CB	3 V U6 S _%N	%DBkI	%NDN1	BlD	. GD	
								3 V U6 S _%I	BD11	f DN1f	5kI0G	. N	
								LV U6 S _%f	%DBS1	%N0fN	BlD	. f D	
3 V U6 S _%I	IBDCG	NGID5k	. ID	C	G	G0CB	G0CB	3 V U6 S _%5	NkDGI	kD1T	IGBDT	. N	
								3 V U6 S _%f	%BDBT	%DN5G	5kD	. ND	
								3 V U6 S _%B	%I5kT	%BDBG	NkBDN	. NT	
								LV U6 S _%I	%DBS1	%N0fN	BlDB	. f D	
3 V U6 S _%B	IBDCG	NGI5TI	. ID	C	G	G0CB	G0CB	3 V U6 S _%I	. I5. B	BDCG	NkI I5	. N	
								3 V U6 S _%T	%BDBN	%DN1k	5TR	. N5	
								3 V U6 S _%.	%DBkf	%NDNBT	BlD	. GR	
								LV U6 S _%B	%DBS1	%N0fN	BlDD	. f D	

Bus		Voltage		Generation		Load		Load Flow					XFMR
vj	9V	p 3 agD	0 ngD	3 m	3 M4r	3 m	3 M4r	vj	3 m	3 M4r	0 2 4	p P-	p _a4
3 V U6 S _%T	I BDCGG	NGBD9NI	. D	C	G	GIOCB	GIOCB	3 V U6 S _%B	BD1.	f IGiT1	5TD	. f D	
								3 V U6 S _%k	%DBk.	%NOBk	BI D	. f DN	
								LV U6 S _%T	%DBS1	%NOif	BI DN	. f D	
3 V U6 S _%k	I BDCGG	NGBD5f	. D	C	G	GIOCB	GIOCB	3 V U6 S _%T	f DBSG	N0N5	BI G;	. f D	
								LV U6 S _%k	%DBS1	%NOif	BI DN	. f D	
3 V U6 S _%.	I BDCGG	NGBDNT1	. D	C	G	GIOCB	GIOCB	3 V U6 S _%B	f DBSG	N0N5	BI DN	. f D	
								LV U6 S _%.	%DBS1	%NOif	BI D	. f D	
3 V U6 S _%BG	I BDCGG	NGBD9kf	. D	C	G	GIOCB	GIOCB	5. - B0	fBD1f	NGDkk	BIf I5	. ND	
								3 V U6 S _%BT	%f DNIN	%D1.	I 5. I5	. ND	
								LV U6 S _%BG	%DBS1	%NOif	BI DN	. f D	
3 V U6 S _%BN	I BDCGG	NGID5.	. Dk	C	G	GIOGI	GIOCB	JU%B/N	f DBSG	N0iFG	BfID	. f D	
								LV U6 S _%BN	%DBS1	%NOif1	BfIDk	. f D	
3 V U6 S _%Bf	I BDCGG	NGID5fG	. Dk	C	G	GIOGI	GIOCB	JU%B/N	. I55f	BD15	NkNDT	. ND	
								3 V U6 S _%Ba	%DBGN	%DNk	N . I0;	. ND	
								LV U6 S _%Bf	%DBS1	%NOiFB	BfIDk	. f D	
3 V U6 S _%Bl	I BDCGG	NGID5k	. Dk	C	G	GIOGI	GIOCB	JU%B/N	f DBSG	N0iFG	BfID	. f D	
								LV U6 S _%Bl	%DBS1	%NOif1	BfIDk	. f D	
3 V U6 S _%BB	I BDCGG	NGBD1.	. Dk	C	G	GIOGI	GIOCB	JU%B/N	%BB5GB	%D11I	f 15D	. NDB	
								3 V U6 S _%Bl	Nkf051	kDkI	I GGD	. ND	
								LV U6 S _%BB	%DBS1	%NOiFB	BfD	. f D	
3 V U6 S _%Bl	I BDCGG	NGBIRI B	. D	C	G	GIOCB	GIOCB	3 V U6 S _%BB	%kf015	%DkkI	I GN5	. NDB	
								3 V U6 S _%BT	N Dk15	5D. T	I BBID	. ND	
								LV U6 S _%Bl	%DBS1	%NOiI	BfD	. f D	
3 V U6 S _%BT	I BDCGG	NGBIBIk	. D	C	G	GIOCB	GIOCB	3 V U6 S _%BG	f fDN5f	. I5T.	I 55D	. NDB	
								3 V U6 S _%Bl	%Nk DGN	%5I51G	I BTI0;	. ND	
								LV U6 S _%BT	%DBS1	%NOiI	BI I0;	. f D	
3 V U6 S _%B5	I BDCGG	NGIf5N	. Dk	C	G	GIOGI	GIOCB	3 V U6 S _%Ba	f DBSN	N0iff	BfIDB	. f D	
								LV U6 S _%B5	%DBS1	%NOiFT	BfD	. f DB	
3 V U6 S _%Ba	I BDCGG	NGIDBI G	. Dk	C	G	GIOGI	GIOCB	3 V U6 S _%Bf	kDIk	I DNBB	NfkI5	. f DN	
								3 V U6 S _%B5	%DBk5	%NOiff	BfIDk	. ND	
								3 V U6 S _%lG	%DBk5	%NOiTG	BfIDk	. ND	
								LV U6 S _%Ba	%DBS1	%NOiFT	BfIDT	. f DB	
3 V U6 S _%lG	I BDCGG	NGIf5NT	. Dk	C	G	GIOGI	GIOCB	3 V U6 S _%Ba	f DBSN	N0iff	BfIDB	. f D	
								LV U6 S _%lG	%DBS1	%NOiFT	BfD	. f DB	
* POv	N. 5I0GG	NGIIOGG	GI0;	%NGfD1 T	%I IBfk	C	C	5. _N0	%NGfD1 T	%I IBfk	Bf 5IT	. 1I0;	
3 P_~I	NI5CGG	NGfIDTN	. DB	C	G	C	C	HV U6 S 3 P_	GIOGG	GIOGG	GI0;	GI0;	
								& 5. _NU					

* vndicates a Moltage regulated bus (Moltage controlled or swing ty4e 2 achine connected to it)

vndicates a bus with a load 2 is2 atch o82 ore than GDN3 V0

Pro2ect:	F m OH m 7F 0	**ETAP**	Page:	N	
Location:	Paulding, OH	NWDDDC	0 ate:	NDRDWRVDN%	
Contract:			SF :	m ES_m OO0 P	
Engineer:	Josh Venden	Study Case: NPG 16LE. 0	f ekision:	NDDA MEF	
j ilenaI e:	F m - OH		ConpigT	F orI al	

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	8V	A 9 agT	. ngT	9 m	9 kar	9 m	9 kar	70	9 m	9 kar	. I 3	APj	A_a3
41j N	5BB5DD	11TlW4	4'5	D	D	D	D	9 V UGS _Rv6	RvB5VWV	B54N	BN%P%	R4'B	
								41_NU	vB5VWV	B54N	BN%P%	R4'B	
41j v.	5BB5DD	11TlW4	4'5	D	D	D	D	JURv/N	Rv%D55	B1lDl	B61'll	R4'B	
								41_NU	v%D55	B1lDl	B61'll	R4'B	
41j 5.	5BB5DD	11TlW4	4'5	D	D	D	D	9 V UGS _Rv5	RvWll46	B'P%W	B64'P%	R4'5	
								41_NU	vWll46	B'P%W	B64'P%	R4'5	
41j B.	5BB5DD	11TlW4	4'5	D	D	D	D	9 V UGS _RBD	RvB55%	5'WDv	BNNl4	R4'll	
								41_NU	vB55%	R5'WDv	BNNl4	R4'll	
41_N	N54'DDD	11Tl1W	DlD	D	D	D	D	PO7	NDvlB%4	R55'5N6	B6NlN	R46'D	
								HV UGS 9 P_	RNDvlB%4	55'5N6	B6NlN	R46'D	
41_NU	5BB5DD	11TlW4	4'5	D	D	D	D	41j B.	RvB55%	5'WDv	BNNl4	R4'll	
								41j 5.	RvWll46	B'P%W	B64'P%	R4'5	
								41j v.	Rv%D55	B1lDl	B61'll	R4'B	
								41j N	RvB5VWV	B54N	BN%P%	R4'B	
								9 P_~5	NDvlIvD	RN%WW4	N%B4'N	R4'W	
								& HV UGS 9 P_					
HV UGS 9 P_	N54'DDD	11Tl1W	DlD	D	D	DlD65	DlNB%	41_N	NDvlB%4	R55'5N6	B6NlN	R46'D	
								41_NU	RNDvl65v	55'5W%	B6NlN	R46'N	R5'Nv6
								& 9 P_~5					
JURv/N	5BB5DD	NDDlvv6	4'P%	D	D	D	D	9 V UGS _RN%	RN%WD	5'WN	v15'5	R4'5	
								9 V UGS _Rvv	R'H4%l	NH4%	NWWll	R4'W	
								41j v.	v%N51	R6'NB4	BWNlv	R4'W	
JURB/N	5BB5DD	NlN5W	NDlv	D	D	D	D	9 V UGS _RBN	RvlB4D	D5lD6	BNH	R4'D	
								9 V UGS _RBv	R'H44%	NllDD	NWWv	R4'W	
								9 V UGS _RB5	RvlB4D	D5lD6	BNH	R4'D	
								9 V UGS _RBB	N3HHBW	RvllND	vBl'H	R4'N	
LV UGS _RDN	DlWD	NDDllWN	NvlB	vl5DD	RDlBDD	D	D	9 V UGS _RDN	vl5DD	RDlBDD	vDl4'5	R4'P%	
LV UGS _RDv	DlWD	NDDH6W	NvlB	vl5DD	RDlBDD	D	D	9 V UGS _RDv	vl5DD	RDlBDD	vNDD6	R4'P%	
LV UGS _RD5	DlWD	NDDWWW	NvlB	vl5DD	RDlBDD	D	D	9 V UGS _RD5	vl5DD	RDlBDD	vNDBv	R4'P%	
LV UGS _RDB	DlWD	NDD6W	NvlB	vl5DD	RDlBDD	D	D	9 V UGS _RDB	vl5DD	RDlBDD	vNDWW	R4'P%	
LV UGS _RD6	DlWD	NDD51N	NvlB	vl5DD	RDlBDD	D	D	9 V UGS _RD6	vl5DD	RDlBDD	vNNDv	R4'P%	
LV UGS _RDW	DlWD	NDDlBNl	NvlN	vl5DD	RDlBDD	D	D	9 V UGS _RDW	vl5DD	RDlBDD	vNDlTW	R4'P%	
LV UGS _RD%	DlWD	NDD56v	NvlD	vl5DD	RDlBDD	D	D	9 V UGS _RD%	vl5DD	RDlBDD	vNNND	R4'P%	
LV UGS _RD4	DlWD	NDDv%W	NvlN	vl5DD	RDlBDD	D	D	9 V UGS _RD4	vl5DD	RDlBDD	vNNvTW	R4'P%	
LV UGS _RDl	DlWD	NDDNND%	NvlD	vl5DD	RDlBDD	D	D	9 V UGS _RDl	vl5DD	RDlBDD	vNNWW	R4'P%	
LV UGS _RND	DlWD	NDDlDvv	NNll	vl5DD	RDlBDD	D	D	9 V UGS _RND	vl5DD	RDlBDD	vNN4'D	R4'P%	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	8V	A 9 agT	. ngT	9 m	9 kar	9 m	9 kar	70	9 m	9 kar	. I 3	APj	A_a3
LV UGS _RN5	DIWD	NDDWD6	NvTN	vT5DD	RDBDD	D	D	9 V UGS _RN5	vT5DD	RDBDD	vND6T%	R14T%	
LV UGS _RNB	DIWD	NDDT655	NvTN	vT5DD	RDBDD	D	D	9 V UGS _RNB	vT5DD	RDBDD	vND%6v	R14T%	
LV UGS _RN6	DIWD	NDDN%v	NvTD	vT5DD	RDBDD	D	D	9 V UGS _RN6	vT5DD	RDBDD	vNN3B4	R14T%	
LV UGS _RNW	DIWD	NDDIB11	NvTN	vT5DD	RDBDD	D	D	9 V UGS _RNW	vT5DD	RDBDD	vND%4I	R14T%	
LV UGS _RN%	DIWD	11TT56	NNB4	vT5DD	RDBDD	D	D	9 V UGS _RN%	vT5DD	RDBDD	vNN1T4	R14T%	
LV UGS _RvD	DIWD	NDDT51v	NNTI	vT5DD	RDBDD	D	D	9 V UGS _RvD	vT5DD	RDBDD	vNNDW	R14T%	
LV UGS _RvN	DIWD	NDDNvvv	NNB4	vT5DD	RDBDD	D	D	9 V UGS _RvN	vT5DD	RDBDD	vNN5T4	R14T%	
LV UGS _Rvv	DIWD	NDDID46	NNB4	vT5DD	RDBDD	D	D	9 V UGS _Rvv	vT5DD	RDBDD	vNNWTW	R14T%	
LV UGS _Rv5	DIWD	11TTW8	NNTI	vT5DD	RDBDD	D	D	9 V UGS _Rv5	vT5DD	RDBDD	vNN1Tv	R14T%	
LV UGS _RvB	DIWD	11T%8N	NNTW	vT5DD	RDBDD	D	D	9 V UGS _RvB	vT5DD	RDBDD	vNvBTD	R14T%	
LV UGS _Rv6	DIWD	11T%D6	NNT6	vT5DD	RDBDD	D	D	9 V UGS _Rv6	vT5DD	RDBDD	vNvBTP%	R14T%	
LV UGS _RvW	DIWD	NDDN1%	NvTN	vT5DD	RDBDD	D	D	9 V UGS _RvW	vT5DD	RDBDD	vNNvTv	R14T%	
LV UGS _Rv%	DIWD	NDDWNv	NvTN	vT5DD	RDBDD	D	D	9 V UGS _Rv%	vT5DD	RDBDD	vNN3TD	R14T%	
LV UGS _Rv4	DIWD	NDDIDB4	NvTN	vT5DD	RDBDD	D	D	9 V UGS _Rv4	vT5DD	RDBDD	vNN%4B	R14T%	
LV UGS _Rv1	DIWD	NDDN4W	NNTI	vT5DD	RDBDD	D	D	9 V UGS _Rv1	vT5DD	RDBDD	vNNvTB	R14T%	
LV UGS _R5N	DIWD	NDDIW6B	NvT5	vT5DD	RDBDD	D	D	9 V UGS _R5N	vT5DD	RDBDD	vNDBTP%	R14T%	
LV UGS _R5v	DIWD	NDDIBDB	NvT5	vT5DD	RDBDD	D	D	9 V UGS _R5v	vT5DD	RDBDD	vNDITI	R14T%	
LV UGS _R55	DIWD	NDDN%4	NvT5	vT5DD	RDBDD	D	D	9 V UGS _R55	vT5DD	RDBDD	vNNvTW	R14T%	
LV UGS _R5B	DIWD	NDDIBvv	NvT5	vT5DD	RDBDD	D	D	9 V UGS _R5B	vT5DD	RDBDD	vNDIT6	R14T%	
LV UGS _R5W	DIWD	NDDP%1	NvTB	vT5DD	RDBDD	D	D	9 V UGS _R5W	vT5DD	RDBDD	vNDvTI	R14T%	
LV UGS _R5%	DIWD	NDDH1DN	NvTB	vT5DD	RDBDD	D	D	9 V UGS _R5%	vT5DD	RDBDD	vNDNTW	R14T%	
LV UGS _R51	DIWD	NDDIW6	NvTB	vT5DD	RDBDD	D	D	9 V UGS _R51	vT5DD	RDBDD	vND5T4	R14T%	
LV UGS _RBD	DIWD	NDDIBW4	NvTW	vT5DD	RDBDD	D	D	9 V UGS _RBD	vT5DD	RDBDD	vND4TW	R14T%	
LV UGS _RBN	DIWD	NDNID51	NSTN	vT5DD	RDBDD	D	D	9 V UGS _RBN	vT5DD	RDBDD	vD1WP%	R14T%	
LV UGS _RBv	DIWD	NDDI1%W	NSTN	vT5DD	RDBDD	D	D	9 V UGS _RBv	vT5DD	RDBDD	vD14TD	R14T%	
LV UGS _RB5	DIWD	NDNID5%	NSTN	vT5DD	RDBDD	D	D	9 V UGS _RB5	vT5DD	RDBDD	vD1WP%	R14T%	
LV UGS _RBB	DIWD	NDDP%1B	NSTD	vT5DD	RDBDD	D	D	9 V UGS _RBB	vT5DD	RDBDD	vNDN4	R14T%	
LV UGS _RB6	DIWD	NDDW4v	NvTI	vT5DD	RDBDD	D	D	9 V UGS _RB6	vT5DD	RDBDD	vNDBTN	R14T%	
LV UGS _RBW	DIWD	NDDI664	NvT4	vT5DD	RDBDD	D	D	9 V UGS _RBW	vT5DD	RDBDD	vNDWP%	R14T%	
LV UGS _RB4	DIWD	NDNIB%5	NST5	vT5DD	RDBDD	D	D	9 V UGS _RB4	vT5DD	RDBDD	vD4%P%	R14T%	
LV UGS _RB1	DIWD	NDN51N	NSTv	vT5DD	RDBDD	D	D	9 V UGS _RB1	vT5DD	RDBDD	vD41TB	R14T%	
LV UGS _R6D	DIWD	NDNIB%D	NST5	vT5DD	RDBDD	D	D	9 V UGS _R6D	vT5DD	RDBDD	vD4%4	R14T%	
9 V UGS _RDN	5BT5DD	NDN56D	1TB	D	D	DDDB	DDDB	9 V UGS _RDv	vTB4N	RD65B	BNTI	R1%4	
								LV UGS _RDN	RvTB4W	D65N	BvTD	R1%4	
9 V UGS _RDv	5BT5DD	NDNvB6	1T5	D	D	DDDB	DDDB	9 V UGS _RDN	RvTB%4	DTB4%	BNT4	R14TN	
								9 V UGS _RD5	BTIWD	RNDvv	45T%	R1%II	
								LV UGS _RDv	RvTB46	D65N	BvTD	R1%4	
9 V UGS _RD5	5BT5DD	NDNDW%	1T5	D	D	DDDB	DDDB	9 V UGS _RDv	RBTI6D	DTI45	45TW	R14TN	
								9 V UGS _RDB	%TE5v	RN65NI	Nv6TW	R14TD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	8V	A 9 agT	. ngT	9 m	9 kar	9 m	9 kar	70	9 m	9 kar	. I 3	APj	A_a3
								LV UGS _RD5	RvTB46	DI65N	BvTN	R%4	
9 V UGS _RDB	5BI6LD	NDDII65	1T5	L	D	DDDB	DDDB	9 V UGS _RD5	R%4Bvv	NIB%6	Nv6TB	R4TN	
								9 V UGS _RD6	1TIDD5	RvTDNN	NW%5	R4TD	
								LV UGS _RDB	RvTB46	DI65v	BvTN	R%4	
9 V UGS _RD6	5BI6LD	NDDP%45	1Tv	L	D	DDDB	DDDB	9 V UGS _RDB	RT44B	NIIW6	NW%5	R4TN	
								9 V UGS _RD4	NvT5WW	RvT6LDN	vDlT6	R4TD	
								LV UGS _RD6	RvTB46	DI65v	BvTv	R%4	
9 V UGS _RDW	5BI6LD	NDDH4NN	1TN	L	D	DDDB	DDDB	9 V UGS _RD%	vTB4N	RDI65W	BvTN	R%2%	
								LV UGS _RDW	RvTB46	DI65v	BvTv	R%4	
9 V UGS _RD%	5BI6LD	NDDP%B6	1TD	L	D	DDDB	DDDB	9 V UGS _RDW	RvTB%d	DI6LD%	BvTD	R4TD	
								9 V UGS _RNW	RvTB%%	DIB%N	BNII	R4Tv	
								9 V UGS _RN6	%B54	RNT5N5	NvWN	R4TD	
								LV UGS _RD%	RvTB46	DI65v	BvTv	R%4	
9 V UGS _RD4	5BI6LD	NDDWWD	1TN	L	D	DDDB	DDDB	9 V UGS _RD6	RNvT5B4	vTBN%	vDlTv	R4TN	
								9 V UGS _RDI	N3H4v1	RvTI165	v6NIB	R4TN	
								LV UGS _RD4	RvTB46	DI65v	BvT5	R%4	
9 V UGS _RDI	5BI6LD	NDD6LDN	1TD	L	D	DDDB	DDDB	9 V UGS _RD4	RNBP%1	vT%64	v6NID	R4Tv	
								9 V UGS _RND	N%v4D	RST5I6	v15Tv	R4TN	
								LV UGS _RDI	RvTB46	DI655	BvT5	R%4	
9 V UGS _RND	5BI6LD	NDDIBN4	4TI	L	D	DDDB	DDDB	9 V UGS _RDI	R%%vWN	5T5vB	v1vII	R4Tv	
								9 V UGS _Rv6	N1T%Bv	RST%WD	556Tv	R4TN	
								LV UGS _RND	RvTB46	DI655	BvTB	R%4	
9 V UGS _RN5	5BI6LD	NDDII1W	1TN	L	D	DDDB	DDDB	9 V UGS _RNB	vTB4N	RDI656	BvTN	R%4	
								LV UGS _RN5	RvTB46	DI65v	BvTN	R%4	
9 V UGS _RNB	5BI6LD	NDDIIvB	1TN	L	D	DDDB	DDDB	9 V UGS _RN5	RvTB%d	DI6LD5	BNII	R4TD	
								9 V UGS _RN6	BIIWN	RNDI61	4BID	R%II	
								LV UGS _RNB	RvTB46	DI65v	BvTN	R%4	
9 V UGS _RN6	5BI6LD	NDD6WW	1TD	L	D	DDDB	DDDB	9 V UGS _RD%	R%4Bv5	NBB66	Nv6T4	R4Tv	
								9 V UGS _RNB	RBIIBN	DIIWv	45T4	R4Tv	
								9 V UGS _RN%	N3H4B6	RvTIBB	v6NT4	R4TN	
								LV UGS _RN6	RvTB46	DI655	BvT5	R%4	
9 V UGS _RNW	5BI6LD	NDDH41N	1TN	L	D	DDDB	DDDB	9 V UGS _RD%	vTB4N	RDI65W	BvTN	R%2%	
								LV UGS _RNW	RvTB46	DI65v	BvTv	R%4	
9 V UGS _RN%	5BI6LD	NDD655N	4TI	L	D	DDDB	DDDB	JURv/N	N%v4B	RST5B1	v15TW	R4Tv	
								9 V UGS _RN6	RN3H4D5	vTI4Nv	v6NI5	R4Tv	
								LV UGS _RN%	RvTB46	DI655	BvTB	R%4	
9 V UGS _RvD	5BI6LD	NDDP%46	4TI	L	D	DDDB	DDDB	9 V UGS _RvN	vTB4N	RDI65W	BvTN	R%2%	
								LV UGS _RvD	RvTB46	DI65v	BvTv	R%4	
9 V UGS _RvN	5BI6LD	NDDWW6	4TI	L	D	DDDB	DDDB	9 V UGS _RvD	RvTB%%	DIBWN	BNII	R4T5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	8V	A 9 agT	. ngT	9 m	9 kar	9 m	9 kar	70	9 m	9 kar	. I 3	APj	A_a3
								9 V UGS _Rvv	BII64	RDII1%	4BIN	R14TD	
								LV UGS _RvN	RvTB46	DI655	BvT5	R1%14	
9 V UGS _Rvv	5BI5LDD	NDDIB4D	4TI	L	D	DLDLB	DLDLB	JURv/N	1TIlD4	RNII6B	NWITv	R14TN	
								9 V UGS _RvN	RBII6N	DIIWI	4BID	R14TN	
								9 V UGS _Rv1	RvTB%W	DBBB4	BNII	R14TB	
								LV UGS _Rvv	RvTB46	DI655	BvT5	R1%14	
9 V UGS _Rv5	5BI5LDD	NDD5561	4TI	L	D	DLDLB	DLDLB	41j 5.	v%NBB	R6TNBD	BWDI%	R14T5	
								9 V UGS _Rv4	RvBTWW5	BTWD5	BN4TB	R14T5	
								LV UGS _Rv5	RvTB46	DI655	BvTB	R1%14	
9 V UGS _RvB	5BI5LDD	NDDIN54	4T5	L	D	DLDLB	DLDLB	9 V UGS _Rv6	vTB4N	RDI654	BvTB	R1%2%	
								LV UGS _RvB	RvTB46	DI65B	BvT5	R1%14	
9 V UGS _Rv6	5BI5LDD	NDDIND5	4T5	L	D	DLDLB	DLDLB	41j N	vBTWW6	RBI656	BN4TB	R14T5	
								9 V UGS _RND	RNlTW6B	5T5LD5	555T%	R14TB	
								9 V UGS _RvB	RvTB4D	DBB16	BvT5	R14TN	
								LV UGS _Rv6	RvTB46	DI65B	BvT5	R1%14	
9 V UGS _RvW	5BI5LDD	NDDIWID	1TN	L	D	DLDLB	DLDLB	9 V UGS _Rv%	vTB4N	RDI65W	BvTv	R1%2%	
								LV UGS _RvW	RvTB46	DI65v	BvTv	R1%14	
9 V UGS _Rv%	5BI5LDD	NDDIWD6	1TN	L	D	DLDLB	DLDLB	9 V UGS _RvW	RvTB%1	DBBl1	BvTN	R14TD	
								9 V UGS _Rv4	BIIWD	RNDI56	4BI5	R1%1I	
								LV UGS _Rv%	RvTB46	DI655	BvT5	R1%14	
9 V UGS _Rv4	5BI5LDD	NDDBBI5	1TN	L	D	DLDLB	DLDLB	9 V UGS _Rv5	vBTW6	RBTP4Dv	BN4T4	R14Tv	
								9 V UGS _Rv%	RBII6N	NDDDN	4BIv	R14TD	
								9 V UGS _R55	RN%WW	5TNW6	v1vTB	R14TB	
								LV UGS _Rv4	RvTB46	DI655	BvT5	R1%14	
9 V UGS _Rv1	5BI5LDD	NDDIWd	4TI	L	D	DLDLB	DLDLB	9 V UGS _Rvv	vTB4N	RDI65W	BvTv	R1%2%	
								LV UGS _Rv1	RvTB46	DI65v	BvTv	R1%14	
9 V UGS _R5N	5BI5LDD	NDNDB6	1TB	L	D	DLDLB	DLDLB	9 V UGS _R5v	vTB4N	RDI656	BvTD	R1%14	
								LV UGS _R5N	RvTB46	DI65N	BvTN	R1%14	
9 V UGS _R5v	5BI5LDD	NDDP4%	1T5	L	D	DLDLB	DLDLB	9 V UGS _R5N	RvTB%6	DBBv6	BNP%	R14TW	
								9 V UGS _R55	BII6W	RDIIWN	45T4	R14Tv	
								LV UGS _R5v	RvTB46	DI65v	BvTv	R1%14	
9 V UGS _R55	5BI5LDD	NDDIWvN	1T5	L	D	DLDLB	DLDLB	9 V UGS _Rv4	N%5NB	R5T564	v15Tv	R14Tv	
								9 V UGS _R5v	RBIIBl	DII5B	45T%	R14T5	
								9 V UGS _R5B	RTT44B	NH4%	NWW5	R14Tv	
								LV UGS _R55	RvTB46	DI65v	BvT5	R1%14	
9 V UGS _R5B	5BI5LDD	NDDH4N6	1T5	L	D	DLDLB	DLDLB	9 V UGS _R55	1TH11	RNIIv6	NWWB	R14Tv	
								9 V UGS _R5W	RBIIBBB	DII%6	45TW	R14TN	
								9 V UGS _R51	RvTB%B	DBBN6	BNTW	R14TW	
								LV UGS _R5B	RvTB46	DI65v	BvTv	R1%14	

Bus		Voltage		Generation		Load		Load Flow					XFMR
70	8V	A 9 agT	. ngT	9 m	9 kar	9 m	9 kar	70	9 m	9 kar	. I 3	APj	A_a3
9 V UGS _I5W	5B56DD	NDNNv1	1"B	D	D	DDDB	DDDB	9 V UGS _I5B	BIIWN	RNDBv	45"II	R%II	
								9 V UGS _I5%	RvTB4D	DI5D%	BNII	R4"D	
								LV UGS _I5W	RvTB46	DI5N	BvTN	R%4	
9 V UGS _I5%	5B56DD	NDNNN	1"B	D	D	DDDB	DDDB	9 V UGS _I5W	vTB4N	RDI556	BvTD	R%4	
								LV UGS _I5%	RvTB46	DI5N	BvTD	R%4	
9 V UGS _I51	5B56DD	NDNND46	1"B	D	D	DDDB	DDDB	9 V UGS _I5B	vTB4N	RDI556	BvTD	R%4	
								LV UGS _I51	RvTB46	DI5N	BvTN	R%4	
9 V UGS _RBD	5B56DD	NDDH4WD	1"I%	D	D	DDDB	DDDB	41j B.	vBTW6v	RBTW5	BNWv	R4"5	
								9 V UGS _RBW	RvvTN%N	BTD44	5%BTN	R4"5	
								LV UGS _RBD	RvTB46	DI55v	BvTv	R%4	
9 V UGS _RBN	5B56DD	NDNBv%	NDIv	D	D	DDDB	DDDB	JURB'N	vTB4N	RDI65B	BNII	R%4	
								LV UGS _RBN	RvTB4W	DI65D	BNII	R%4	
9 V UGS _RBv	5B56DD	NDN5WB	NDIv	D	D	DDDB	DDDB	JURB'N	1"H4%	RNII DN	NWWv	R4"v	
								9 V UGS _RB1	R%BDW	N5WW	NvB5	R4"5	
								LV UGS _RBv	RvTB4W	DI65N	BvTD	R%4	
9 V UGS _RB5	5B56DD	NDNBvW	NDIv	D	D	DDDB	DDDB	JURB'N	vTB4N	RDI65B	BNII	R%4	
								LV UGS _RB5	RvTB4W	DI65D	BNII	R%4	
9 V UGS _RBB	5B56DD	NDNN4B	NDID	D	D	DDDB	DDDB	JURB'N	RN3H4NB	vH4D%	vB1"B	R4"5	
								9 V UGS _RB6	N%v16	R5"5Bv	v1N5	R4"v	
								LV UGS _RBB	RvTB46	DI65N	BvTD	R%4	
9 V UGS _RB6	5B56DD	NDNID%5	1"II	D	D	DDDB	DDDB	9 V UGS _RBB	RN%v%D	5"vB6	v1NID	R4"5	
								9 V UGS _RBW	N1"P6N	R5"P4D	555"D	R4"v	
								LV UGS _RB6	RvTB46	DI65N	BvTN	R%4	
9 V UGS _RBW	5B56DD	NDDII6D	1"H	D	D	DDDB	DDDB	9 V UGS _RBD	vvTN11	RBTN%v	5%BTB	R4"5	
								9 V UGS _RB6	RN1"P%N%	5"TW5W	55vTB	R4"5	
								LV UGS _RBW	RvTB46	DI55v	BvTN	R%4	
9 V UGS _RB4	5B56DD	NDNH464	ND5	D	D	DDDB	DDDB	9 V UGS _RB1	vTB4N	RDI655	BNP%	R%4	
								LV UGS _RB4	RvTB4W	DI5v1	BNH	R%4	
9 V UGS _RB1	5B56DD	NDNP8%	ND5	D	D	DDDB	DDDB	9 V UGS _RBv	%BBD	RN6v%	NvBII	R4"D	
								9 V UGS _RB4	RvTB%I	DIB1W	BNIW	R4"N	
								9 V UGS _R6D	RvTB%I	DIB1%	BNIW	R4"D	
								LV UGS _RB1	RvTB4W	DI65D	BNH	R%4	
9 V UGS _R6D	5B56DD	NDNH46W	ND5	D	D	DDDB	DDDB	9 V UGS _RB1	vTB4N	RDI655	BNP%	R%4	
								LV UGS _R6D	RvTB4W	DI5v1	BNH	R%4	
* PO7	N54"DDD	NDDDDD	DID	RNDvTB%6	55"65N	D	D	41_N	RNDvTB%6	55"65N	B6NIN	R46"D	
9 P_~5	N5"HDD	11"IW4	1"N	D	D	D	D	HV UGS 9 P_ & 41_NU	DDDD	DDDD	DID	DID	

* 7ndicates a koltage regulated bus (koltage controlled or swing ty3e I achine connected to it)

7ndicates a bus with a load I isI atch opI ore than DIN9 V.

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
7.	8V	A 9 agT	6 ngT	9 m	9 kar	9 m	9 kar	7.	9 m	9 kar	6 I 3	APj	A_a3
4Nj 06	5BTGDD	NNBvW	4TB	E	D	E	E	9 V U1 S _RvG	RvBTGW	B5W0	B0NN	R4TG	
								4N_0U	vBTGW	B5W0	B0NN	R4TG	
4Nj v6	5BTGDD	NNBvW	4TB	E	D	E	E	JURv/0	Rv%DvN	BH4B	BW5	R4TB	
								4N_0U	v%DvN	BH4B	BW5	R4TB	
4Nj 56	5BTGDD	NNBvW	4TB	E	D	E	E	9 V U1 S _Rv5	RvWN4D	BP%GW	BW0D	R4TG	
								4N_0U	vWN4D	BP%GW	BW0D	R4TG	
4Nj B6	5BTGDD	NNBvW	4TB	E	D	E	E	9 V U1 S _RBD	RvB550	5TGN4	B0BD	R4TN	
								4N_0U	vB550	5TGN4	B0BD	R4TN	
4N_06	054TDDD	NBNNW	DD	E	D	E	E	PO7	0DvBW	R55TGNB	B%BN	RNGD	
								HV U1 S 9 P_	R0DvBW	55TGNB	B%BN	RNGD	
4N_0U	5BTGDD	NNBvW	4TB	E	D	E	E	4Nj B6	RvB550	5TGN4	B0BD	R4TN	
								4Nj 56	RvWN4D	BP%GW	BW0D	R4TG	
								4Nj v6	Rv%DvN	BH4B	BW5	R4TB	
								4Nj 06	RvBTGW	B5W0	B0NN	R4TG	
								9 P_~5	0DvNDB	R0%GNN	0%GP40	R4TW	
								& HV U1 S 9 P_					
HV U1 S 9 P_	054TDDD	NBNNW	DD	E	D	DDB4	DD55	4N_06	0DvBW	R55TGNB	B%BN	RNGD	
								4N_0U	R0DvTDDD	55TBW0	B%BN	RNGD	R%GDDD
								& 9 P_~5					
JURv/0	5BTGDD	NNTW4B	4TH	E	D	E	E	9 V U1 S _R0%	R0%vG4	5TvB0	vNBH	R4T5	
								9 V U1 S _Rvv	RNH%4	0TH%W	0WTH	R4Tv	
								4Nj v6	v%D5W	RGD0%	BW5TW	R4T5	
JURB/0	5BTGDD	0DDHvN	0D5	E	D	E	E	9 V U1 S _RB0	RvTB%N	DTGD0	BvTD	R4TD	
								9 V U1 S _RBv	RNH4W	0TH44	0W4D	R4Tv	
								9 V U1 S _RB5	RvTB4D	DTGDv	BvTD	R4TD	
								9 V U1 S _RBB	0BHBG	RvTHN0	vC0TD	R4Tv	
LV U1 S _RD0	DTWND	0DDBB5G	0vTG	vTGDD	RD5NG	E	E	9 V U1 S _RD0	vTGDD	RD5NG	v0D4TW	R4TH	
LV U1 S _RDv	DTWND	0DD5vN	0vTB	vTGDD	RD5NG	E	E	9 V U1 S _RDv	vTGDD	RD5NG	v00DN	R4TH	
LV U1 S _RD5	DTWND	0DDDB4	0vTB	vTGDD	RD5NG	E	E	9 V U1 S _RD5	vTGDD	RD5NG	v00BP%	R4TH	
LV U1 S _RDB	DTWND	0DDD55	0vTB	vTGDD	RD5NG	E	E	9 V U1 S _RDB	vTGDD	RD5NG	v00%D	R4TH	
LV U1 S _RDG	DTWND	NNHW0	0v5	vTGDD	RD5NG	E	E	9 V U1 S _RDG	vTGDD	RD5NG	v0vDP%	R4TH	
LV U1 S _RDW	DTWND	NNH4N	0vTv	vTGDD	RD5NG	E	E	9 V U1 S _RDW	vTGDD	RD5NG	v0vDW	R4TH	
LV U1 S _RD%	DTWND	NNHvv	0vTv	vTGDD	RD5NG	E	E	9 V U1 S _RD%	vTGDD	RD5NG	v0v0TW	R4TH	
LV U1 S _RD4	DTWND	NNP4BW	0vTv	vTGDD	RD5NG	E	E	9 V U1 S _RD4	vTGDD	RD5NG	v0v5Tv	R4TH	
LV U1 S _RDN	DTWND	NNDP4G	0vTD	vTGDD	RD5NG	E	E	9 V U1 S _RDN	vTGDD	RD5NG	v0vWH	R4TH	
LV U1 S _R0D	DTWND	NNBND	0vTD	vTGDD	RD5NG	E	E	9 V U1 S _R0D	vTGDD	RD5NG	v0v4TP%	R4TH	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7.	8V	A 9 agT	6 ngT	9 m	9 kar	9 m	9 kar	7.	9 m	9 kar	6 I 3	APj	A_a3
LV U1 S _R05	DIWND	0DDDDY%W	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _R05	vTGDD	RD5NG	v00WTv	RN4TH	
LV U1 S _R0B	DIWND	0DDDDDB	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _R0B	vTGDD	RD5NG	v00%2%	RN4TH	
LV U1 S _R0G	DIWND	NNTWBD	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _R0G	vTGDD	RD5NG	v0vGTB	RN4TH	
LV U1 S _R0W	DIWND	NNTN%D	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _R0W	vTGDD	RD5NG	v004'TB	RN4TH	
LV U1 S _R0%	DIWND	NNTBDv	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _R0%	vTGDD	RD5NG	v05DDG	RN4TH	
LV U1 S _RvD	DIWND	NNTWW	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _RvD	vTGDD	RD5NG	v0vDP%	RN4TH	
LV U1 S _Rv0	DIWND	NNTWND	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _Rv0	vTGDD	RD5NG	v0vBTB	RN4TH	
LV U1 S _Rvv	DIWND	NNTGG5	00TN	vTGDD	RD5NG	D	D	9 V U1 S _Rvv	vTGDD	RD5NG	v0v%5	RN4TH	
LV U1 S _Rv5	DIWND	NNTBS0	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _Rv5	vTGDD	RD5NG	v0vNTN	RN4TH	
LV U1 S _RvB	DIWND	NNTVDW	00T%	vTGDD	RD5NG	D	D	9 V U1 S _RvB	vTGDD	RD5NG	v05BT%	RN4TH	
LV U1 S _RvG	DIWND	NND%0	00T%	vTGDD	RD5NG	D	D	9 V U1 S _RvG	vTGDD	RD5NG	v05GTG	RN4TH	
LV U1 S _RvW	DIWND	NNPAWW	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _RvW	vTGDD	RD5NG	v0vvT4	RN4TH	
LV U1 S _Rv%	DIWND	NNTW40	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _Rv%	vTGDD	RD5NG	v0vBTW	RN4TH	
LV U1 S _Rv4	DIWND	NNTGDW	0vTv	vTGDD	RD5NG	D	D	9 V U1 S _Rv4	vTGDD	RD5NG	v0v4'D	RN4TH	
LV U1 S _RvN	DIWND	NNP%GG	0vTD	vTGDD	RD5NG	D	D	9 V U1 S _RvN	vTGDD	RD5NG	v0v5'D	RN4TH	
LV U1 S _R50	DIWND	0DDDvG	0vTG	vTGDD	RD5NG	D	D	9 V U1 S _R50	vTGDD	RD5NG	v00GTD	RN4TH	
LV U1 S _R5v	DIWND	NNT%TB	0vTB	vTGDD	RD5NG	D	D	9 V U1 S _R5v	vTGDD	RD5NG	v0vDTG	RN4TH	
LV U1 S _R55	DIWND	NNP4B4	0vTB	vTGDD	RD5NG	D	D	9 V U1 S _R55	vTGDD	RD5NG	v0v5'v	RN4TH	
LV U1 S _R5B	DIWND	NNTHN5	0vTG	vTGDD	RD5NG	D	D	9 V U1 S _R5B	vTGDD	RD5NG	v0vDTD	RN4TH	
LV U1 S _R5W	DIWND	0DDNv00	0vTG	vTGDD	RD5NG	D	D	9 V U1 S _R5W	vTGDD	RD5NG	v005'5	RN4TH	
LV U1 S _R5%	DIWND	0DDNv%B	0vTG	vTGDD	RD5NG	D	D	9 V U1 S _R5%	vTGDD	RD5NG	v00vTD	RN4TH	
LV U1 S _R5N	DIWND	0DDDWv%	0vTG	vTGDD	RD5NG	D	D	9 V U1 S _R5N	vTGDD	RD5NG	v00BT5	RN4TH	
LV U1 S _RBD	DIWND	NNTN5N	0vT4	vTGDD	RD5NG	D	D	9 V U1 S _RBD	vTGDD	RD5NG	v00NTD	RN4TH	
LV U1 S _RB0	DIWND	0DDDD05	05'5	vTGDD	RD5NG	D	D	9 V U1 S _RB0	vTGDD	RD5NG	v0D%4D	RN4TH	
LV U1 S _RBv	DIWND	0DDBGD	05'5	vTGDD	RD5NG	D	D	9 V U1 S _RBv	vTGDD	RD5NG	v0D4'5	RN4TH	
LV U1 S _RB5	DIWND	0DDDD0v	05'5	vTGDD	RD5NG	D	D	9 V U1 S _RB5	vTGDD	RD5NG	v0D%4D	RN4TH	
LV U1 S _RBB	DIWND	0DDNvW%	05'D	vTGDD	RD5NG	D	D	9 V U1 S _RBB	vTGDD	RD5NG	v00vTv	RN4TH	
LV U1 S _RBG	DIWND	0DDDGB	05'D	vTGDD	RD5NG	D	D	9 V U1 S _RBG	vTGDD	RD5NG	v00BTG	RN4TH	
LV U1 S _RBW	DIWND	0DDDvN	0vTN	vTGDD	RD5NG	D	D	9 V U1 S _RBW	vTGDD	RD5NG	v00%Tv	RN4TH	
LV U1 S _RB4	DIWND	0DDNBN	05'B	vTGDD	RD5NG	D	D	9 V U1 S _RB4	vTGDD	RD5NG	vDN%4N	RN4TH	
LV U1 S _RBN	DIWND	0DDH4W	05'B	vTGDD	RD5NG	D	D	9 V U1 S _RBN	vTGDD	RD5NG	vDNNTW	RN4TH	
LV U1 S _RGD	DIWND	0DDNB%	05'B	vTGDD	RD5NG	D	D	9 V U1 S _RGD	vTGDD	RD5NG	vDN%4N	RN4TH	
9 V U1 S _RD0	5BTGDD	0DDH40%	NTG	D	D	DDDB	DDDB	9 V U1 S _RDv	vTB40	RDTG50	BvTD	RN%4H	
								LV U1 S _RD0	RvTB4G	DTGv%	BvTv	RN%4H	
9 V U1 S _RDv	5BTGDD	0DDP%00	NTB	D	D	DDDB	DDDB	9 V U1 S _RD0	RvTB%4	DTB4B	BvTD	RN4TD	
								9 V U1 S _RD5	BTNWD	R0TDDG	4BTD	RN4TD	
								LV U1 S _RDv	RvTB4G	DTGv%	BvTv	RN%4H	
9 V U1 S _RD5	5BTGDD	0DDDG5v	NTB	D	D	DDDB	DDDB	9 V U1 S _RDv	RBTNGD	DTN%%	4BTD	RN4TD	
								9 V U1 S _RDB	%TB50	R0TGD4	0vWTv	RN4TD	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7.	8V	A 9 agT	6 ngT	9 m	9 kar	9 m	9 kar	7.	9 m	9 kar	6 I 3	APj	A_a3
								LV U1 S _RD5	RvTB4G	DIGv4	BvT5	RN%H	
9 V U1 S _RDB	5BIGDD	0DDIB04	NIB	E	D	DDDB	DDDB	9 V U1 S _RD5	R%HBvv	0TBWG	0vW0	RN4TD	
								9 V U1 S _RDG	NTND5	R0TNN%	0W4TB	RN4TD	
								LV U1 S _RDB	RvTB4G	DIGv4	BvT5	RN%H	
9 V U1 S _RDG	5BIGDD	0DDIvB%	NT5	E	D	DDDB	DDDB	9 V U1 S _RDB	RNH4B	0TNG5	0W4Tv	RN4TD	
								9 V U1 S _RD4	0vT5WG	RvTB4G	v0DIG	RN4TD	
								LV U1 S _RDG	RvTB4G	DIGvN	BvTB	RN%H	
9 V U1 S _RDW	5BIGDD	0DDIv%G	NIv	E	D	DDDB	DDDB	9 V U1 S _RD%	vTB40	RDIG5v	BvT5	RN%H	
								LV U1 S _RDW	RvTB4G	DIGv4	BvTB	RN%H	
9 V U1 S _RD%	5BIGDD	0DDIvD4	NID	E	D	DDDB	DDDB	9 V U1 S _RDW	RvTB%N	DIGD5	BvTv	RN4TD	
								9 V U1 S _R0W	RvTB%%	DIBW4	BvTD	RN4T5	
								9 V U1 S _RDG	%EB54	R0TGD5	0vWP%	RN4TD	
								LV U1 S _RD%	RvTB4G	DIGvN	BvTB	RN%H	
9 V U1 S _RD4	5BIGDD	0DDD5v	NIv	E	D	DDDB	DDDB	9 V U1 S _RDG	R0vT5B%	vTBDv	v0DIv	RN4Tv	
								9 V U1 S _RDN	0BH4v4	RvTN5B	vGvTW	RN4TD	
								LV U1 S _RD4	RvTB4G	DIGvN	BvTG	RN%H	
9 V U1 S _RDN	5BIGDD	NNTNW5	NID	E	D	DDDB	DDDB	9 V U1 S _RD4	R0BTP%%	vTHBD	vGvTv	RN4Tv	
								9 V U1 S _R0D	0%Av%4	R5T5%5	vNBTP%	RN4TD	
								LV U1 S _RDN	RvTB4G	DIGvN	BvTG	RN%H	
9 V U1 S _R0D	5BIGDD	NNH%4	NID	E	D	DDDB	DDDB	9 V U1 S _RDN	R0%AvGN	5T5LB	vNBHB	RN4Tv	
								9 V U1 S _RvG	0NP4BD	R5TH5%	55WN	RN4Tv	
								LV U1 S _R0D	RvTB4G	DIGvN	BvTW	RN%H	
9 V U1 S _R05	5BIGDD	0DDIBW0	NIv	E	D	DDDB	DDDB	9 V U1 S _R0B	vTB40	RDIG5v	BvT5	RN%H	
								LV U1 S _R05	RvTB4G	DIGv4	BvT5	RN%H	
9 V U1 S _R0B	5BIGDD	0DD544	NIv	E	D	DDDB	DDDB	9 V U1 S _R05	RvTB%N	DIGDD	BvTv	RN4TD	
								9 V U1 S _R0G	BTNWD	R0TD5v	4BIG	RN%N	
								LV U1 S _R0B	RvTB4G	DIGv4	BvTB	RN%H	
9 V U1 S _R0G	5BIGDD	0DDIDv4	NID	E	D	DDDB	DDDB	9 V U1 S _RD%	R%HBvv	0TB5W	0vWG	RN4Tv	
								9 V U1 S _R0B	R3TNB0	DTNGW	4BIv	RN4Tv	
								9 V U1 S _R0%	0BH4BB	RvTNvG	vG5TD	RN4TD	
								LV U1 S _R0G	RvTB4G	DIGvN	BvTG	RN%H	
9 V U1 S _R0W	5BIGDD	0DD5GG	NIv	E	D	DDDB	DDDB	9 V U1 S _RD%	vTB40	RDIG5v	BvT5	RN%H	
								LV U1 S _R0W	RvTB4G	DIGv4	BvTB	RN%H	
9 V U1 S _R0%	5BIGDD	NNP%N0	4TN	E	D	DDDB	DDDB	JURv/0	0%Av4v	R5T5vN	vNGID	RN4Tv	
								9 V U1 S _R0G	R0BH4D0	vTP%G	vGvTW	RN4T5	
								LV U1 S _R0%	RvTB4G	DIG5D	BvTW	RN%H	
9 V U1 S _RvD	5BIGDD	0DDIvB%	NID	E	D	DDDB	DDDB	9 V U1 S _Rv0	vTB40	RDIG5v	BvTB	RN%H	
								LV U1 S _RvD	RvTB4G	DIGv4	BvTB	RN%H	
9 V U1 S _Rv0	5BIGDD	0DDID%%	4TN	E	D	DDDB	DDDB	9 V U1 S _RvD	RvTB%%	DIBG4	BvTD	RN4T5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7.	8V	A 9 agT	6 ngT	9 m	9 kar	9 m	9 kar	7.	9 m	9 kar	6 I 3	APj	A_a3
								9 V U1 S _Rvv	BNG4	RDNN0	4BIG	RV4TD	
								LV U1 S _Rv0	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _Rvv	5BIGDD	NNNB0	4TN	D	D	DDDB	DDDB	JURv/0	NND%	R0TNB0	0WND	RV4TD	
								9 V U1 S _Rv0	RBNGD	DNW	4BIB	RV4Tv	
								9 V U1 S _RvN	RvTB%W	DBBBW	BvTD	RV4TB	
								LV U1 S _Rvv	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _Rv5	5BIGDD	NNH0N	NID	D	D	DDDB	DDDB	4Nj 56	v%DB0	RGD0D	BW5TD	RV4T5	
								9 V U1 S _Rv4	RvBNWD	BIG%%	BvDIG	RV4T5	
								LV U1 S _Rv5	RvTB4G	DIG5D	BvTW	RV%4	
9 V U1 S _RvB	5BIGDD	NNIGNW	4TW	D	D	DDDB	DDDB	9 V U1 S _RvG	vTB40	RDIG5B	BvTW	RV%4	
								LV U1 S _RvB	RvTB4G	DIG5D	BvT%	RV%4	
9 V U1 S _RvG	5BIGDD	NNIGW0	4TW	D	D	DDDB	DDDB	4Nj 06	vBNW0v	RBIG00	BvDNW	RV4TB	
								9 V U1 S _R0D	R0NNWG0	5TB4G	55GIG	RV4TG	
								9 V U1 S _RvB	RvTB4D	DBBNv	BvTG	RV4TD	
								LV U1 S _RvG	RvTB4G	DIG5D	BvT%	RV%4	
9 V U1 S _RvW	5BIGDD	0DDDG5	NIv	D	D	DDDB	DDDB	9 V U1 S _Rv%	vTB40	RDIG5v	BvTB	RV%4	
								LV U1 S _RvW	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _Rv%	5BIGDD	0DDDW4	NIv	D	D	DDDB	DDDB	9 V U1 S _RvW	RvTB%N	DBBNG	BvT5	RV4TD	
								9 V U1 S _Rv4	BNWD	R0TDv4	4BI%	RV%4N	
								LV U1 S _Rv%	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _Rv4	5BIGDD	NNNDB	NIv	D	D	DDDB	DDDB	9 V U1 S _Rv5	vBNW5	RBNW4B	Bv0TD	RV4T5	
								9 V U1 S _Rv%	RBNGD	DNNB	4BIW	RV4TD	
								9 V U1 S _R55	R0%WD	5TDB%	vN5TN	RV4TB	
								LV U1 S _Rv4	RvTB4G	DIGvN	BvTW	RV%4	
9 V U1 S _RvN	5BIGDD	0DDDB0	4TN	D	D	DDDB	DDDB	9 V U1 S _Rvv	vTB40	RDIG5v	BvTB	RV%4	
								LV U1 S _RvN	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _R50	5BIGDD	0DDIGDN	NIG	D	D	DDDB	DDDB	9 V U1 S _R5v	vTB40	RDIG5v	BvTv	RV%4	
								LV U1 S _R50	RvTB4G	DIGv4	BvT5	RV%4	
9 V U1 S _R5v	5BIGDD	0DDWWD	NIB	D	D	DDDB	DDDB	9 V U1 S _R50	RvTB%B	DBBvv	B0TN	RV4TW	
								9 V U1 S _R55	BNGW	RDNGG	4BIv	RV4Tv	
								LV U1 S _R5v	RvTB4G	DIGv4	BvTB	RV%4	
9 V U1 S _R55	5BIGDD	0DDD5B	NIB	D	D	DDDB	DDDB	9 V U1 S _Rv4	0%505	R5T55W	vNBI%	RV4Tv	
								9 V U1 S _R5v	RBNBN	DNv4	4BID	RV4T5	
								9 V U1 S _R5B	RN445	0T%G	0WTD	RV4Tv	
								LV U1 S _R55	RvTB4G	DIGvN	BvTG	RV%4	
9 V U1 S _R5B	5BIGDD	0DDW%N	NIB	D	D	DDDB	DDDB	9 V U1 S _R55	NHNN	R0TN05	0WTv	RV4Tv	
								9 V U1 S _R5W	RBNBB	DNW4	4BID	RV4TD	
								9 V U1 S _R5N	RvTB%B	DBB0v	B0TN	RV4TW	
								LV U1 S _R5B	RvTB4G	DIGv4	BvTB	RV%4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7.	8V	A 9 agT	6 ngT	9 m	9 kar	9 m	9 kar	7.	9 m	9 kar	6 I 3	APj	A_a3
9 V U1 S _ R5W	5BIGDD	0DDIGNG	NIG	D	D	DDDB	DDDB	9 V U1 S _ R5B	BfNW0	R0TD5G	4B5	RV%N	
								9 V U1 S _ R5%	RvTB4D	DIGDB	BvTD	RN4TD	
								LV U1 S _ R5W	RvTB4G	DIGv4	BvT5	RV%4	
9 V U1 S _ R5%	5BIGDD	0DDWCP%	NIG	D	D	DDDB	DDDB	9 V U1 S _ R5W	vTB40	RDIG50	BvTv	RV%4	
								LV U1 S _ R5%	RvTB4G	DIGv%	BvTv	RV%4	
9 V U1 S _ R5N	5BIGDD	0DDIGC0	NIG	D	D	DDDB	DDDB	9 V U1 S _ R5B	vTB40	RDIG50	BvTv	RV%4	
								LV U1 S _ R5N	RvTB4G	DIGv4	BvT5	RV%4	
9 V U1 S _ RBD	5BIGDD	0DD5vB	N4	D	D	DDDB	DDDB	4NjB6	vBfWBN	RBIGN%	B04T5	RN4T5	
								9 V U1 S _ RBW	RvvTDW4	BIDWG	5%GfN	RN4TB	
								LV U1 S _ RBD	RvTB4G	DIGv4	BvTB	RV%4	
9 V U1 S _ RB0	5BIGDD	0DDI4NG	0D5	D	D	DDDB	DDDB	JURB/0	vTB40	RDIG50	BvTD	RV%4	
								LV U1 S _ RB0	RvTB4G	DIGv%	BvTD	RV%4	
9 V U1 S _ RBv	5BIGDD	0DDI450	0D5	D	D	DDDB	DDDB	JURB/0	NI44%	R0TI444	0WW0	RN4Tv	
								9 V U1 S _ RBN	RfBDG	0T5G4	0vGID	RN4TB	
								LV U1 S _ RBv	RvTB4G	DIGv%	BvTv	RV%4	
9 V U1 S _ RB5	5BIGDD	0DDI4N5	0D5	D	D	DDDB	DDDB	JURB/0	vTB40	RDIG50	BvTD	RV%4	
								LV U1 S _ RB5	RvTB4G	DIGv%	BvTD	RV%4	
9 V U1 S _ RBB	5BIGDD	0DDWGD	0DD	D	D	DDDB	DDDB	JURB/0	R0BI4105	vTP4N	vGDIW	RN4T5	
								9 V U1 S _ RBG	0%fvNB	R5T5v0	vNvTI	RN4Tv	
								LV U1 S _ RBB	RvTB4G	DIGv%	BvTv	RV%4	
9 V U1 S _ RBG	5BIGDD	0DDIC54	0DD	D	D	DDDB	DDDB	9 V U1 S _ RBB	R0%fvWN	5TvvW	vNvTB	RN4T5	
								9 V U1 S _ RBW	0NP%GD	R5TP%GP%	55BIW	RN4Tv	
								LV U1 S _ RBG	RvTB4G	DIGv4	BvT5	RV%4	
9 V U1 S _ RBW	5BIGDD	0DDIB0B	NIN	D	D	DDDB	DDDB	9 V U1 S _ RBD	vvTDNW	RBIDB%	5%W5	RN4T5	
								9 V U1 S _ RBG	R0NP%0G	5TW0W	55BID	RN4TB	
								LV U1 S _ RBW	RvTB4G	DIGv4	BvT5	RV%4	
9 V U1 S _ RB4	5BIGDD	0DD75v4	0DIB	D	D	DDDB	DDDB	9 V U1 S _ RBN	vTB40	RDIGvN	B0TN	RV%4	
								LV U1 S _ RB4	RvTB4W	DIGvW	BvTD	RV%4	
9 V U1 S _ RBN	5BIGDD	0DD7vB%	0DIB	D	D	DDDB	DDDB	9 V U1 S _ RBv	%BBD	R0TIDW	0vGIG	RN4TD	
								9 V U1 S _ RB4	RvTB%N	DIBN5	B0T4	RN4TD	
								9 V U1 S _ RGD	RvTB%N	DIBNB	B0T4	RN4TD	
								LV U1 S _ RBN	RvTB4W	DIGvW	BvTD	RV%4	
9 V U1 S _ RGD	5BIGDD	0DD75vG	0DIB	D	D	DDDB	DDDB	9 V U1 S _ RBN	vTB40	RDIGvN	B0TN	RV%4	
								LV U1 S _ RGD	RvTB4W	DIGvW	BvTD	RV%4	
* PO7	054TDDD	NGIDDD	DID	R0DvTBGN	55TW05	D	D	4N_06	R0DvTBGN	55TW05	B%BfN	RNGID	
9 P_~5	05T4DD	NNID4G	NIv	D	D	D	D	HV U1 S 9 P_ & 4N_0U	DDDD	DDDD	DID	DID	

* 7ndicates a koltage regulated bus (koltage controlled or swing ty3e I achine connected to it)

7ndicates a bus with a load I isI atch opI ore than DD 9 V6

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
4. j N0	5BDCGG	. . I% B	4I5	C	G	C	C	9 V U6 S _Rv1	RvBD TB	B5. N	BN4D	R 4IB	
								4. _NU	vBD TB	B5. N	BN4D	R 4IB	
4. j v0	5BDCGG	. . I% B	4I5	C	G	C	C	JURv/N	Rv%405v	BD N	BTGI%	R 4IB	
								4. _NU	v%405v	BD N	BTGI%	R 4IB	
4. j 50	5BDCGG	. . I% B	4I5	C	G	C	C	9 V U6 S _Rv5	RvTD45	BI%44	B1. IT	R 4ID	
								4. _NU	vTD45	BI%44	B1. IT	R 4ID	
4. j B0	5BDCGG	. . I% B	4I5	C	G	C	C	9 V U6 S _RBG	RvBI551	5IIN%	BNvIT	R 4D	
								4. _NU	vBI551	R5IIN%	BNvIT	R 4D	
4. _N0	N541I0CGG	NGBD. T	GI0G	C	G	C	C	PO7	NGvIBT1	R55II5v	Bv. I%	R 1I0G	
								HV U6 S 9 P_	RNGvIBT1	55II5v	Bv. I%	R 1I0G	
4. _NU	5BDCGG	. . I% B	4I5	C	G	C	C	4. j B0	RvBI551	5IIN%	BNvIT	R 4D	
								4. j 50	RvTD45	BI%44	B1. IT	R 4ID	
								4. j v0	Rv%405v	BD N	BTGI%	R 4IB	
								4. j N0	RvBD TB	B5. N	BN4D	R 4IB	
								9 P_~5	NGvIDNB	RN%I9N1	N%dN9	R 4IT	
								& HV U6 S 9 P_					
HV U6 S 9 P_	N541I0CGG	NGBD. T	GI0G	C	G	GI0G1.	GIINTv	4. _N0	NGvIBT1	R55II5v	Bv. I%	R 1I0G	
								4. _NU	RNGvIDvB	55IB%G	Bv. I%	R 1IN	N24%d
								& 9 P_~5					
JURv/N	5BDCGG	NGGI0G1N	4I5%	C	G	C	C	9 V U6 S _RN%	RN%I91.	5I9TT	v. 5I4	R 4I5	
								9 V U6 S _Rvv	R I4%	N24. G	NT4I9	R 4I9	
								4. j v0	v%I9545	RIINIT	BTvI0G	R 4I9	
JURB/N	5BDCGG	NGNN24.	NGI9	C	G	C	C	9 V U6 S _RBN	RvIB4G	GIIGI	BN4	R 4I0G	
								9 V U6 S _RBv	R I44%	NIIG5	NTTI9	R 4I9	
								9 V U6 S _RB5	RvIB4G	GIIGT	BNI	R 4I0G	
								9 V U6 S _RBB	NB24BT	RvINNB	v1GI9	R 4IN	
LV U6 S _RGN	GII. G	NGGI%44	NvIB	vIIGG	RGIBXGG	C	C	9 V U6 S _RGN	vIIGG	RGIBXGG	vNGNI	R 4I%	
LV U6 S _RGv	GII. G	NGGII4v	NvIB	vIIGG	RGIBXGG	C	C	9 V U6 S _RGv	vIIGG	RGIBXGG	vNGBIN	R 4I%	
LV U6 S _RG5	GII. G	NGGIIG5	NvI5	vIIGG	RGIBXGG	C	C	9 V U6 S _RG5	vIIGG	RGIBXGG	vNG%I	R 4I%	
LV U6 S _RGB	GII. G	NGGI544	NvI5	vIIGG	RGIBXGG	C	C	9 V U6 S _RGB	vIIGG	RGIBXGG	vNNGI5	R 4I%	
LV U6 S _RGI	GII. G	NGGI9N%	NvI9	vIIGG	RGIBXGG	C	C	9 V U6 S _RGI	vIIGG	RGIBXGG	vNN5I	R 4I%	
LV U6 S _RGT	GII. G	NGGI9B1	NvIN	vIIGG	RGIBXGG	C	C	9 V U6 S _RGT	vIIGG	RGIBXGG	vNN5I5	R 4I%	
LV U6 S _RG%	GII. G	NGGIN%4	NvIN	vIIGG	RGIBXGG	C	C	9 V U6 S _RG%	vIIGG	RGIBXGG	vNNBI%	R 4I%	
LV U6 S _RG4	GII. G	NGGINGv	NvI9	vIIGG	RGIBXGG	C	C	9 V U6 S _RG4	vIIGG	RGIBXGG	vNNTI5	R 4I%	
LV U6 S _RG	GII. G	. . D5v	NvI0G	vIIGG	RGIBXGG	C	C	9 V U6 S _RG	vIIGG	RGIBXGG	vNN. I	R 4I%	
LV U6 S _RNG	GII. G	. . I4B4	NvI0G	vIIGG	RGIBXGG	C	C	9 V U6 S _RNG	vIIGG	RGIBXGG	vNvNI%	R 4I%	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
LV U6 S _RN5	GDT. G	NGGDB5v	NvDN	vDGGG	RGDBGG	C	C	9 V U6 S _RN5	vDGGG	RGDBGG	vNG DB	R 4D%	
LV U6 S _RNB	GDT. G	NGG351.	NvDN	vDGGG	RGDBGG	C	C	9 V U6 S _RNB	vDGGG	RGDBGG	vNNGD	R 4D%	
LV U6 S _RNl	GDT. G	. . D. %	NvD6;	vDGGG	RGDBGG	C	C	9 V U6 S _RNl	vDGGG	RGDBGG	vNN4D	R 4D%	
LV U6 S _RNT	GDT. G	NGG35v1	NvDN	vDGGG	RGDBGG	C	C	9 V U6 S _RNT	vDGGG	RGDBGG	vNNND	R 4D%	
LV U6 S _RN%	GDT. G	. . D4TG	NND	vDGGG	RGDBGG	C	C	9 V U6 S _RN%	vDGGG	RGDBGG	vNv5D	R 4D%	
LV U6 S _RvG	GDT. G	NGGD9N4	NND	vDGGG	RGDBGG	C	C	9 V U6 S _RvG	vDGGG	RGDBGG	vNN5D4	R 4D%	
LV U6 S _RvN	GDT. G	NGGD0B%	NND	vDGGG	RGDBGG	C	C	9 V U6 S _RvN	vDGGG	RGDBGG	vNN%4D	R 4D%	
LV U6 S _Rvv	GDT. G	. . DNN	NND	vDGGG	RGDBGG	C	C	9 V U6 S _Rvv	vDGGG	RGDBGG	vNvG5	R 4D%	
LV U6 S _Rv5	GDT. G	. . D4.	NvD6;	vDGGG	RGDBGG	C	C	9 V U6 S _Rv5	vDGGG	RGDBGG	vNvvD	R 4D%	
LV U6 S _RvB	GDT. G	. . DTT	NNT	vDGGG	RGDBGG	C	C	9 V U6 S _RvB	vDGGG	RGDBGG	vNv%4D%	R 4D%	
LV U6 S _Rv1	GDT. G	. . D5G	NNT	vDGGG	RGDBGG	C	C	9 V U6 S _Rv1	vDGGG	RGDBGG	vNv4D	R 4D%	
LV U6 S _RvT	GDT. G	NGGDNv5	NvD9	vDGGG	RGDBGG	C	C	9 V U6 S _RvT	vDGGG	RGDBGG	vNN1D	R 4D%	
LV U6 S _Rv%	GDT. G	NGG0G5%	NvDN	vDGGG	RGDBGG	C	C	9 V U6 S _Rv%	vDGGG	RGDBGG	vNN%4D%	R 4D%	
LV U6 S _Rv4	GDT. G	. . I4%5	NvDN	vDGGG	RGDBGG	C	C	9 V U6 S _Rv4	vDGGG	RGDBGG	vNvNDN	R 4D%	
LV U6 S _Rv.	GDT. G	NGGDNv	NND	vDGGG	RGDBGG	C	C	9 V U6 S _Rv.	vDGGG	RGDBGG	vNN1DN	R 4D%	
LV U6 S _R5N	GDT. G	NGGDB4G	NvDB	vDGGG	RGDBGG	C	C	9 V U6 S _R5N	vDGGG	RGDBGG	vNG4D5	R 4D%	
LV U6 S _R5v	GDT. G	NGGD95G	NvD5	vDGGG	RGDBGG	C	C	9 V U6 S _R5v	vDGGG	RGDBGG	vNN5DT	R 4D%	
LV U6 S _R55	GDT. G	NGGDNG5	NvD5	vDGGG	RGDBGG	C	C	9 V U6 S _R55	vDGGG	RGDBGG	vNN1D5	R 4D%	
LV U6 S _R5B	GDT. G	NGGD9B4	NvDB	vDGGG	RGDBGG	C	C	9 V U6 S _R5B	vDGGG	RGDBGG	vNN5D9	R 4D%	
LV U6 S _R5T	GDT. G	NGGDDT1	NvDB	vDGGG	RGDBGG	C	C	9 V U6 S _R5T	vDGGG	RGDBGG	vNGTD	R 4D%	
LV U6 S _R5%	GDT. G	NGGDDv%	NvDB	vDGGG	RGDBGG	C	C	9 V U6 S _R5%	vDGGG	RGDBGG	vNGTD9	R 4D%	
LV U6 S _R5.	GDT. G	NGGDDvN	NvDB	vDGGG	RGDBGG	C	C	9 V U6 S _R5.	vDGGG	RGDBGG	vNG%4D	R 4D%	
LV U6 S _RBG	GDT. G	NGGD9. 5	NvD%	vDGGG	RGDBGG	C	C	9 V U6 S _RBG	vDGGG	RGDBGG	vNNv5	R 4D%	
LV U6 S _RBN	GDT. G	NGGD4T1	N5D9	vDGGG	RGDBGG	C	C	9 V U6 S _RBN	vDGGG	RGDBGG	vNGG5	R 4D%	
LV U6 S _RBv	GDT. G	NGGD4Gv	N5D9	vDGGG	RGDBGG	C	C	9 V U6 S _RBv	vDGGG	RGDBGG	vNGNDT	R 4D%	
LV U6 S _RB5	GDT. G	NGGD4T5	N5D9	vDGGG	RGDBGG	C	C	9 V U6 S _RB5	vDGGG	RGDBGG	vNGG5	R 4D%	
LV U6 S _RBB	GDT. G	NGGDDvG	N5D6;	vDGGG	RGDBGG	C	C	9 V U6 S _RBB	vDGGG	RGDBGG	vNGlDB	R 4D%	
LV U6 S _RBl	GDT. G	NGGDDG4	NvD	vDGGG	RGDBGG	C	C	9 V U6 S _RBl	vDGGG	RGDBGG	vNG%4D	R 4D%	
LV U6 S _RBT	GDT. G	NGG354B	NvD4	vDGGG	RGDBGG	C	C	9 V U6 S _RBT	vDGGG	RGDBGG	vNNGDB	R 4D%	
LV U6 S _RB4	GDT. G	NGNN9. .	N5D5	vDGGG	RGDBGG	C	C	9 V U6 S _RB4	vDGGG	RGDBGG	vG N5	R 4D%	
LV U6 S _RB.	GDT. G	NGNN9N4	N5D5	vDGGG	RGDBGG	C	C	9 V U6 S _RB.	vDGGG	RGDBGG	vG 5D6;	R 4D%	
LV U6 S _RlG	GDT. G	NGNN9. %	N5D5	vDGGG	RGDBGG	C	C	9 V U6 S _RlG	vDGGG	RGDBGG	vG N5	R 4D%	
9 V U6 S _RGN	5BDGGG	NGNND%4	. DB	C	G	G0GB	G0GB	9 V U6 S _RGv	vDB4N	RGD51	BvD6;	R %4	
								LV U6 S _RGN	RvDB41	GD5N	BvD6;	R %4	
9 V U6 S _RGv	5BDGGG	NGNN0%5	. DB	C	G	G0GB	G0GB	9 V U6 S _RGN	RvDB%4	GDB44	BN4	R 4DN	
								9 V U6 S _RG5	BDTG	RN0v5	45D4	R %D	
								LV U6 S _RGv	RvDB41	GD5N	BvDN	R %4	
9 V U6 S _RG5	5BDGGG	NGG34. 1	. D5	C	G	G0GB	G0GB	9 V U6 S _RGv	RBD1G	GD41	45D%	R 4DN	
								9 V U6 S _RGB	%DB5N	RNDvG	Nv1D4	R 4D6;	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
								LV U6 S _RG5	RvDB41	GD55v	BvD	R %43	
9 V U6 S _RGB	5BDCGG	NGGD94N	. I5	C	G	G0CB	G0CB	9 V U6 S _RG5	R%DBvv	NDB%%	Nv1D%	R 4DN	
								9 V U6 S _RGl	. DG5	RvD2N5	NT%43	R 4D6	
								LV U6 S _RGB	RvDB41	GD55v	BvD	R %43	
9 V U6 S _RGl	5BDCGG	NGGDNG	. I9	C	G	G0CB	G0CB	9 V U6 S _RGB	R I44B	NDT4	NT%4T	R 4DN	
								9 V U6 S _RG4	NvI5T1	RvDCGB	vG D	R 4D6	
								LV U6 S _RGl	RvDB41	GD55	BvI5	R %43	
9 V U6 S _RGT	5BDCGG	NGGD54	. IN	C	G	G0CB	G0CB	9 V U6 S _RC%	vDB4N	RGD5T	BvD	R %4%	
								LV U6 S _RGT	RvDB41	GD55	BvI5	R %43	
9 V U6 S _RC%	5BDCGG	NGGD%v	. IN	C	G	G0CB	G0CB	9 V U6 S _RGT	RvDB%	GDCP%	BvDN	R 4D6	
								9 V U6 S _RNT	RvDB%%	GB%N	BvI6	R 4D9	
								9 V U6 S _RNl	%4B54	RNDNl	NvTI5	R 4D6	
								LV U6 S _RC%	RvDB41	GD55	BvI5	R %43	
9 V U6 S _RG4	5BDCGG	NGGDB. %	. IN	C	G	G0CB	G0CB	9 V U6 S _RGl	RNvI5B4	vDBvG	vG D	R 4DN	
								9 V U6 S _RG	NB43v.	RvD1%	v1N43	R 4DN	
								LV U6 S _RG4	RvDB41	GD55	BvI5	R %43	
9 V U6 S _RG	5BDCGG	NGGI5v4	. I6	C	G	G0CB	G0CB	9 V U6 S _RG4	RNB%4	vI3Tv	v1NDB	R 4D9	
								9 V U6 S _RNG	N%49%	R5I5. .	v. 5D%	R 4DN	
								LV U6 S _RG	RvDB41	GD55	BvDB	R %43	
9 V U6 S _RNG	5BDCGG	NGGD9BB	4D	C	G	G0CB	G0CB	9 V U6 S _RG	RN%9TG	5I5v.	v. 5DB	R 4D9	
								9 V U6 S _Rv1	N D4BN	R5I43TT	551I43	R 4DN	
								LV U6 S _RNG	RvDB41	GD5B	BvDB	R %43	
9 V U6 S _RN5	5BDCGG	NGGI43vB	. IN	C	G	G0CB	G0CB	9 V U6 S _RNB	vDB4N	RGD5T	BvDN	R %4%	
								LV U6 S _RN5	RvDB41	GD5v	BvD	R %43	
9 V U6 S _RNB	5BDCGG	NGGD9dv	. IN	C	G	G0CB	G0CB	9 V U6 S _RN5	RvDB%	GDCB	BvI6	R 4D6	
								9 V U6 S _RNl	BDTG	RN0BG	4BD	R %D	
								LV U6 S _RNB	RvDB41	GD5v	BvD	R %43	
9 V U6 S _RNl	5BDCGG	NGGI5. 5	. I6	C	G	G0CB	G0CB	9 V U6 S _RC%	R%DBv5	NDBB%	NvTDN	R 4D9	
								9 V U6 S _RNB	RBDBN	GDTB	45D	R 4D9	
								9 V U6 S _RN%	N43BI	RvDB4	v1vI5	R 4DN	
								LV U6 S _RNl	RvDB41	GD55	BvDB	R %43	
9 V U6 S _RNT	5BDCGG	NGGD9N	. IN	C	G	G0CB	G0CB	9 V U6 S _RC%	vDB4N	RGD5T	BvD	R %4%	
								LV U6 S _RNT	RvDB41	GD5v	BvD	R %43	
9 V U6 S _RN%	5BDCGG	NGGDNl %	43	C	G	G0CB	G0CB	JURv/N	N%D45	R5I51B	v. BD	R 4D9	
								9 V U6 S _RNl	RNB4Gv	vI3N%	v1N43	R 4D9	
								LV U6 S _RN%	RvDB41	GD5B	BvD	R %43	
9 V U6 S _RvG	5BDCGG	NGGDDNv	4D	C	G	G0CB	G0CB	9 V U6 S _RvN	vDB4N	RGD5T	BvD	R %4%	
								LV U6 S _RvG	RvDB41	GD55	BvI5	R %43	
9 V U6 S _RvN	5BDCGG	NGGDBBv	4D	C	G	G0CB	G0CB	9 V U6 S _RvG	RvDB%%	GBBTv	BvI6	R 4I5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
								9 V U6 S _Rvv	BD 14	RGD. .	4BD5	R 4D6	
								LV U6 S _RvN	RvDB41	GD55	BvD5	R %49	
9 V U6 S _Rvv	5BDCGG	NGGD5CP%	4D9	C	G	GDCCB	GDCCB	JURv/N	. DCP%	RND1T	NT4D	R 4DN	
								9 V U6 S _RvN	RBD1G	GD%G	4BD9	R 4DN	
								9 V U6 S _Rv.	RvDB%T	GDBB.	BvD6	R 4DB	
								LV U6 S _Rvv	RvDB41	GD55	BvDB	R %49	
9 V U6 S _Rv5	5BDCGG	NGGDN41	4D	C	G	GDCCB	GDCCB	4. j 50	v%DNB5	RDNB.	BTND	R 4D9	
								9 V U6 S _Rv4	RvBDTv	BDTNN	BN. DN	R 4D5	
								LV U6 S _Rv5	RvDB41	GD5B	BvD	R %49	
9 V U6 S _RvB	5BDCGG	. . DTB	4DT	C	G	GDCCB	GDCCB	9 V U6 S _Rv1	vDB4N	RGD54	BvD	R %D%	
								LV U6 S _RvB	RvDB41	GD5B	BvDT	R %49	
9 V U6 S _Rv1	5BDCGG	. . Dv.	4D	C	G	GDCCB	GDCCB	4. j N0	vBDTNB	RBDBBB	BN. D9	R 4D5	
								9 V U6 S _RNG	RN. DT15	5DNG	55BD5	R 4DB	
								9 V U6 S _RvB	RvDB4G	GDB. T	BvDB	R 4DN	
								LV U6 S _Rv1	RvDB41	GD5B	BvDT	R %49	
9 V U6 S _RvT	5BDCGG	NGGDN%	. DN	C	G	GDCCB	GDCCB	9 V U6 S _Rv%	vDB4N	RGD5%	BvD5	R %D%	
								LV U6 S _RvT	RvDB41	GD55	BvD5	R %49	
9 V U6 S _Rv%	5BDCGG	NGGDB5v	. DN	C	G	GDCCB	GDCCB	9 V U6 S _RvT	RvDB%	GDB. .	BvDN	R 4D6	
								9 V U6 S _Rv4	BDTG	RN05T	4BDB	R %D	
								LV U6 S _Rv%	RvDB41	GD55	BvDB	R %49	
9 V U6 S _Rv4	5BDCGG	NGGD9T.	. DN	C	G	GDCCB	GDCCB	9 V U6 S _Rv5	vBDT. B	RBD%NG	BN. DT	R 4D9	
								9 V U6 S _Rv%	RBD1N	N0GGv	4BD5	R 4D6	
								9 V U6 S _R55	RN%9Tv	5DN%N	v. vD	R 4DB	
								LV U6 S _Rv4	RvDB41	GD5B	BvDB	R %49	
9 V U6 S _Rv.	5BDCGG	NGGDDGT	4D	C	G	GDCCB	GDCCB	9 V U6 S _Rvv	vDB4N	RGD5%	BvD5	R %D%	
								LV U6 S _Rv.	RvDB41	GD55	BvD5	R %49	
9 V U6 S _R5N	5BDCGG	NGGD4%v	. DB	C	G	GDCCB	GDCCB	9 V U6 S _R5v	vDB4N	RGD5T	BvDN	R %D%	
								LV U6 S _R5N	RvDB41	GD5v	BvD9	R %49	
9 V U6 S _R5v	5BDCGG	NGGDDvB	. D5	C	G	GDCCB	GDCCB	9 V U6 S _R5N	RvDB%4	GDBvT	BN04	R 4DT	
								9 V U6 S _R55	BD1T	RGDTv	4BD6	R 4D9	
								LV U6 S _R5v	RvDB41	GD55	BvD5	R %49	
9 V U6 S _R55	5BDCGG	NGGDB. 4	. D5	C	G	GDCCB	GDCCB	9 V U6 S _Rv4	N%45N5	R5D5Tv	v. 5D%	R 4D9	
								9 V U6 S _R5v	RBDB.	GD5T	45D	R 4D5	
								9 V U6 S _R5B	R D445	N9. G	NT%DT	R 4D9	
								LV U6 S _R55	RvDB41	GD55	BvD5	R %49	
9 V U6 S _R5B	5BDCGG	NGGDDBv	. DB	C	G	GDCCB	GDCCB	9 V U6 S _R55	. D. .	RNDv4	NT%D%	R 4D9	
								9 V U6 S _R5T	RBDBBB	GD%T	45D9	R 4DN	
								9 V U6 S _R5.	RvDB%B	GDBNT	BND%	R 4DT	
								LV U6 S _R5B	RvDB41	GD55	BvD5	R %49	

Pro2ect:	F m OH m 7F W	**ETAP**		Page:	1
Location:	Paulding, OH	NTGOOC		Wate:	NGRGTRvGN%
Contract:				SF :	m ES_m OOWP
Engineer:	Josh Venden	Study Case: NGlP6 . 1LE0 W		f ekision:	NGGA MEF
j ilenaI e:	F m - OH			ConpigD	F orI al

Bus		Voltage		Generation		Load		Load Flow					XFMR
7W	8V	A 9 agD	0 ngD	9 m	9 kar	9 m	9 kar	7W	9 m	9 kar	0 I 3	APj	A_a3
9 V U6 S _I5T	5BDCG	NGCD1%	. IB	C	G	GOCB	GOCB	9 V U6 S _I5B	BDTN	RN0B5	4B0i	R %D	
								9 V U6 S _I5%	RvDB4G	GDGI	BvDi	R 4Di	
								LV U6 S _I5T	RvDB41	GD5v	BvDN	R %4	
9 V U6 S _I5%	5BDCG	NGN0N4	. D	C	G	GOCB	GOCB	9 V U6 S _I5T	vDB4N	RGD51	BvDN	R %4	
								LV U6 S _I5%	RvDB41	GD5v	BvDN	R %4	
9 V U6 S _I5.	5BDCG	NGCDN5	. IB	C	G	GOCB	GOCB	9 V U6 S _I5B	vDB4N	RGD5T	BvDN	R %D%	
								LV U6 S _I5.	RvDB41	GD5v	BvDN	R %4	
9 V U6 S _IBG	5BDCG	NGCD4%	. D%	C	G	GOCB	GOCB	4. j B0	vBDT1N	IBDT5N	BNTD	R 4I5	
								9 V U6 S _I3T	RvvDN%G	BI0i 1	5%IBD%	R 4I5	
								LV U6 S _IBG	RvDB41	GD5v	BvD	R %4	
9 V U6 S _IBN	5BDCG	NGN911	NGD	C	G	GOCB	GOCB	JURB/N	vDB4N	RGD51	BvDi	R %4	
								LV U6 S _IBN	RvDB4T	GD5N	BvDi	R %4	
9 V U6 S _IBv	5BDCG	NGNDN v	NGD	C	G	GOCB	GOCB	JURB/N	. I44%	RNDG5	NTTD	R 4ID	
								9 V U6 S _IB.	R%IBGT	N5T4	NvBD	R 4I5	
								LV U6 S _IBv	RvDB41	GD5N	BvDi	R %4	
9 V U6 S _IB5	5BDCG	NGN915	NGD	C	G	GOCB	GOCB	JURB/N	vDB4N	RGD51	BvDi	R %4	
								LV U6 S _IB5	RvDB41	GD5N	BvDi	R %4	
9 V U6 S _IBB	5BDCG	NGN0NN	NGDN	C	G	GOCB	GOCB	JURB/N	RNBB4NB	vI4NN	vB. I4	R 4ID	
								9 V U6 S _IB1	N%9. 1	I5I5B%	v. NI4	R 4ID	
								LV U6 S _IBB	RvDB41	GD5v	BvDN	R %4	
9 V U6 S _IB1	5BDCG	NGCI4. .	NGI0i	C	G	GOCB	GOCB	9 V U6 S _IBB	R%9%G	5D1N	v. ND	R 4I5	
								9 V U6 S _I3T	N D%N	I5D4T	555D	R 4ID	
								LV U6 S _IB1	RvDB41	GD5v	BvD	R %4	
9 V U6 S _IB3T	5BDCG	NGCB%T	. I4	C	G	GOCB	GOCB	9 V U6 S _IBG	vvDN 4	RBD%	5%1DN	R 4I5	
								9 V U6 S _IB1	RN D%N%	5DIB5	555I0i	R 4I5	
								LV U6 S _IB3T	RvDB41	GD5v	BvD	R %4	
9 V U6 S _IB4	5BDCG	NGNDT4T	NGIB	C	G	GOCB	GOCB	9 V U6 S _IB.	vDB4N	RGD5B	BNI4	R %4	
								LV U6 S _IB4	RvDB4T	GD5G	BNI4	R %4	
9 V U6 S _IB.	5BDCG	NGNDTG1	NGI5	C	G	GOCB	GOCB	9 V U6 S _IBv	%IBBG	RND v4	Nv1DN	R 4I0i	
								9 V U6 S _IB4	RvDB%	GIB. %	BNDT	R 4IDN	
								9 V U6 S _I1G	RvDB%	GIB. 4	BND%	R 4I0i	
								LV U6 S _IB.	RvDB4T	GD5G	BND	R %4	
9 V U6 S _I1G	5BDCG	NGNDT45	NGIB	C	G	GOCB	GOCB	9 V U6 S _IB.	vDB4N	RGD5B	BNI4	R %4	
								LV U6 S _I1G	RvDB4T	GD5G	BNI4	R %4	
* PO7	N54I0CG	NGIIOCG	GI0i	RNGvIBT5	55DIBT	C	C	4. _N0	RNGvIBT5	55DIBT	Bv. I%	R 1I0i	
9 P_~5	N5I4CG	. . IBI15	. IN	C	G	C	C	HV U6 S 9 P_ & 4. _NU	GOCG	GOCG	GI0i	GI0i	

* 7ndicates a koltage regulated bus (koltage controlled or swing ty3e I achine connected to it)

7ndicates a bus with a load I isI atch opI ore than GDN9 V0

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Project Name: NW OH Wind Project	
Title	**J.O. or W.O. Number**
Short Circuit Study	0007186.00

Approvals		**Revision Number**	**Date**	**Description**
Preparer(s) Name	**Reviewer(s) Name**			
Josh Venden	Drew Szabo	0	09/25/2017	Original Release
Josh Venden	Drew Szabo	1	09/28/2017	Updated App A
Josh Venden	Drew Szabo	2	10/19/2017	Updated short circuit currents



AC CABLE SIZING STUDY

Northwest Ohio Wind Project

Paulding, Ohio

October 6, 2017

Prepared for:

WHITE an IEA company

Prepared by:

Westwood

Westwood

Project Name: NW OH Wind Project	
Title	**J.O. or W.O. Number**
AC Cable Sizing Study	0007186.00

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Josh Venden	Drew Szabo	0	09/27/2017	Original Release
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Westwood

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INTRODUCTION

NW OH Wind Project is a 100 MW wind generation installation in Paulding, OH consisting 42 of GE 2.5 MW wind turbines. The turbines are grouped into four medium voltage (MV) feeders with 10 turbines on Feeders 1 and 4 and 11 turbines on Feeders 2 and 3. The feeders are connected to a main power transformer that steps the voltage up to 138kV where it interconnects with the AEP transmission system via a short overhead line segment.

OBJECTIVE

The objective of this report is to provide the design basis for determining the ampacity ratings of the medium and low voltage AC cables between the turbines, transformers, and junction boxes.

INPUTS & ASSSUMPTIONS

- The native soil thermal resistivity is 150°C-cm/W as per the assessment of Westwood Professional Services based on the Geotechnical Engineering Report for Northwest Ohio Wind Project; completed by BARR, December 2014.
- Thermal resistivity of the disturbed soil in the cable trench is based on considerations of residual moisture, such that it indicates a worst case rho value of 200°C-cm/W at the specified 85% compaction.
- Thermal resistivity of the concrete ductbank is assumed to be 55 C-cm/W per NEC.
- Appendix D, has the excerpts for the dry out curves of the soil at various test points.
- Soil ambient temperature at various depths is shown in the following table.

Depth [ft]	Depth [m]	T_{max} [C]
3	0.91	22
4	1.22	21
5	1.52	20
6	1.83	19
7	2.13	18
8	2.44	18
9	2.74	17
10	3.05	17

- Cables are analyzed at their maximum allowable continuous operating temperature of 90° C.
- Load factor assumed conservatively at 100% for determining the cable ampacities.
- Direct buried medium voltage AC Cables are evaluated with minimum 48" soil cover.
- Medium voltage AC collector electrical layout is per the Westwood Professional Services Electrical Drawings, MVAC Collection One-Line Diagrams E.200 & E.210 and Trench Details E.600.
- The standard installation is based on a trefoil arrangement of cables, aluminum conductors with copper concentric neutral wires bonded at both ends.
- The nameplate rating of the turbines is 2.5MW with reactive power capability of 0.9 lead/lag. Maximum cable amp loadings are based on maximum total turbine MVA output; approximately 49A at 34.5 kV.

METHODOLOGY

- Thermal analysis of underground cables is conducted with CYME Cymcap software, which uses the Neher-McGrath methodology to determine reduced cable ratings based on project specific thermal constraints.
- CYMCAP analysis is conducted for single and multiple circuit trenches for all of the MV cable sizes and configurations used in the underground collection design.
- CYMCAP analysis is also performed to verify the ampacity of the low voltage cables passing through the turbine foundation.

THERMAL ANALYSIS RESULTS AND CONCLUSION

SINGLE CIRCUIT AMPACITY

- Table 1 shows a summary of the single circuit cable ampacities and maximum number of turbines that can be connected to each cable size without violating its respective ampacity rating.

Cable	Material	Maximum 3PH Fault Current	Phase Conductor SC Withstand	Ampacity & Configuration	
1/0	Al	7814	PASS	142.3	Trefoil
4/0	Al	12637	PASS	212.9	Trefoil
500	Al	8304	PASS	334.7	Trefoil
750	Al	10974	PASS	408.6	Trefoil
1000	Al	9865	PASS	477.1	Trefoil
1250	Al	12101	PASS	540.5	Trefoil
1250*	Al	12101	PASS	570.5	Trefoil

** Increased ampacity based on 90% soil compaction in trenches with 11 turbines on the ckt*

Table 1: Cable Ampacity Summary

- As the final two rows of the above table indicate, for 1250 kCMIL cable with an ampacity rating large enough to accommodate 11 turbines, a soil compaction of at least 90% must be achieved in the trenches, which reduces the soil thermal resistivity closer to the native soil value of 150°C-cm/W. Feeders 2 and 3 require this compaction level for the MV cable trenches from the substation to the first wind turbine on each feeder.

MULTIPLE CIRCUIT TRENCHES

- In several locations, multiple MV circuits will run parallel to one another in the same right of way (ROW). Further thermal analysis was performed on these areas to determine the minimum spacing between circuits required to maintain acceptable operating temperatures.
- The following table summarizes the locations where multiple circuits will occupy the same parallel trench paths. The table indicates the number of turbines and corresponding loading on each cable segment.

TRENCH SEGMENT FROM	TO	FEEDERS IN TRENCH FDR	TURBINES	AMPS	Cable Sizes	Ckt Spacing (center-to-center)
SUB	HWY 114	1	10	516.51	1250	*see options below*
		2	11	568.16	1250	
		3	11	568.16	1250	
		4	10	516.51	1250	
HWY 114	T-25	1	10	516.51	1250	*see options below*
		2	11	568.16	1250	
		3	11	568.16	1250	
		4	10	516.51	1250	
T-25	T-24	1	1	51.65	4/0	four 12" trenches; 25' ROW backfill rho = 0.90 C-m/W 7' FDR1-FDR2, 11' FDR2-FDR3, 3' FDR3-FDR4
		2	11	568.16	1250	
		3	11	568.16	1250	
		4	10	516.51	1250	
T-24	JB-2/1	2	11	568.16	1250	triple 12" trenches; 50' ROW 23.5' FDR1-FDR2 & 23.5' FDR2-FDR3
		3	11	568.16	1250	
		4	10	516.51	1250	
JB-2/1	T-22	2	4	206.60	4/0	triple 12" trenches; 50' ROW 23.5' FDR1-FDR2 & 23.5' FDR2-FDR3
		3	11	568.16	1250	
		4	10	516.51	1250	
T-22	T-23	2	1	51.65	1/0	triple 12" trenches; 12' ROW w/ 1/0 conductor in center trench; 4.5' between all circuits
		3	11	568.16	1250	
		4	11	568.16	1250	
T-23	T-28	3	10	516.51	1250	double 12" trenches; 18' ROW 7.5' FDR1-FDR2
		4	10	516.51	1250	
T-28	T-33	3	7	361.55	750	double 12" trenches; 15' ROW 6' FDR1-FDR2
		4	10	516.51	1250	
T-33	T-34	3	4	206.60	4/0	double 12" trenches; 20' ROW 9' FDR1-FD2
		4	10	516.51	1250	
T-34	T-39	3	1	51.65	1/0	single 18" trench; 3' ROW 1' FDR1-FDR2
		4	10	516.51	1250	

Table 2: Multiple Circuit Trench Summary

T-25 TO SUBSTATION

- The worst case from a thermal standpoint occurs in the ROW from Turbine 25 to the Substation where all four fully loaded feeders run parallel to one another. The cable ROW from turbine 25 to the Hwy 114 crossing can be up to 50' wide. The current ROW that runs along the south side of Hwy 114 is limited to less than 20 feet. At the eastern end of this easement the cables would run on land designated for the O&M building and substation where the ROW could again be expanded.

    - Reduced rho backfill

      From the substation terminals to the highway and from the highway crossing north to turbine 25, the cables can be installed in four separate trenches backfilled with a material that provides a thermal resistivity of 90 C-m/W or less. The following table summarizes the spacing for this option.

TRENCH SEGMENT FROM	TO	FEEDERS IN TRENCH FDR	TURBINES	AMPS	Cable Sizes	Ckt Spacing (center-to-center)
SUB	HWY 114	1	10	516.51	1250	four 12" trenches; 30' ROW backfill rho = 0.90 C-m/W 10' center-center
		2	11	568.16	1250	
HWY 114	T-25	3	11	568.16	1250	
		4	10	516.51	1250	

CONSTRAINED EASEMENT

- Copper Conductors

  This option looks at using copper conductors for the approximately 1,450 feet in the ditch along the south of Hwy 114. Junction boxes would have to be installed on each end of the constrained easement to convert the cables from Al to Cu. This is approximately 4,350 feet of 1250 kCMIL copper cable for each feeder. The feeder spacing is shown in the following table.

TRENCH SEGMENT FROM	TO	FEEDERS IN TRENCH FDR	TURBINES	AMPS	Cable Sizes	Ckt Spacing (center-to-center)
CONSTRAINED EASEMENT		1	10	516.51	1250 CU	four 12" trenches; 13' ROW 3' FDR1-FDR2; 4' FDR2-FDR3; 3' FDR3-FDR4
		2	11	568.16	1250 CU	
		3	11	568.16	1250 CU	
		4	10	516.51	1250 CU	

- Duct Bank

  This option looks at the installation of a 4 circuit duct bank for the approximately 1,450 feet in the ditch along the south of Highway 114. The duct bank would be a minimum of 10’ wide and 18” high with approximately 18” of cover over the duct bank. The following table summarizes the duct spacing for the four circuits.

TRENCH SEGMENT FROM	TO	FEEDERS IN TRENCH FDR	TURBINES	AMPS	Cable Sizes	Ckt Spacing (center-to-center)
CONSTRAINED EASEMENT		1	10	516.51	1250	limited ROW < 20' 1.5' x 10' duct bank rho <= 0.55 C-m/W 2.5' duct spacing
		2	11	568.16	1250	
		3	11	568.16	1250	
		4	10	516.51	1250	

- 3 Turbine Tap

  For this option, the total number of turbines per homerun are reduced by installing a separate “tap” circuit to collect turbines 23, 24 and 29. The reconfiguration reduces the total turbines on circuits 2 and 3 to ten. Additionally, turbine 24 would be connected to this feeder to eliminate the tap connection from turbine 25 to 24. This option also impacts several of the trench segments as the number of circuits and loading on each circuit has changed. The following table summarizes the new trench configurations. This would result in an additional 40,725 feet of 4/0 cable.

Westwood

TRENCH SEGMENT FROM	TO	FEEDERS IN TRENCH FDR	TURBINES	AMPS	Cable Sizes	Ckt Spacing (center-to-center)
SUB	HWY 114	1	9	464.86	1250	85% compaction all trenches 10' center-center 45' ROW
		2	10	516.51	1250	
		3	10	516.51	1250	
HWY 114	T-25	4	10	516.51	1250	
		TAP	3	154.95	4/0	
CONSTRAINED EASEMENT		1	9	464.86	1250	limited ROW < 20' 1.5' x 13' duct bank rho <= 0.55 C-m/W 2.75' duct spacing
		2	10	516.51	1250	
		3	10	516.51	1250	
		4	10	516.51	1250	
		TAP	3	154.95	4/0	
T-25	T-24	2	10	516.51	1250	85% compaction all trenches 8' FDR2-TAP; 10.5' TAP-FDR3; 10.5' FDR3-FDR4 35' ROW
		3	10	516.51	1250	
		4	10	516.51	1250	
		TAP	3	154.95	4/0	
T-24	JB-2/1	2	10	516.51	1250	85% compaction all trenches 4' FDR2-TAP; 8.5' TAP-FDR3; 11.5' FDR3-FDR4 25' ROW
		3	10	516.51	1250	
		4	10	516.51	1250	
		TAP	2	103.30	4/0	
JB-2/1	T-22	2	3	154.95	4/0	85% compaction all trenches 8' FDR2-FDR3; 7' FDR3-TAP; 6' TAP-FDR4 25' ROW
		3	10	516.51	1250	
		4	10	516.51	1250	
		TAP	2	103.30	4/0	
T-22	T-23	3	10	516.51	1250	85% compaction all trenches 5.5' center-center 15' ROW
		4	10	516.51	1250	
		TAP	2	103.30	4/0	

A summary of the additional materials required for each option is shown in the table below.

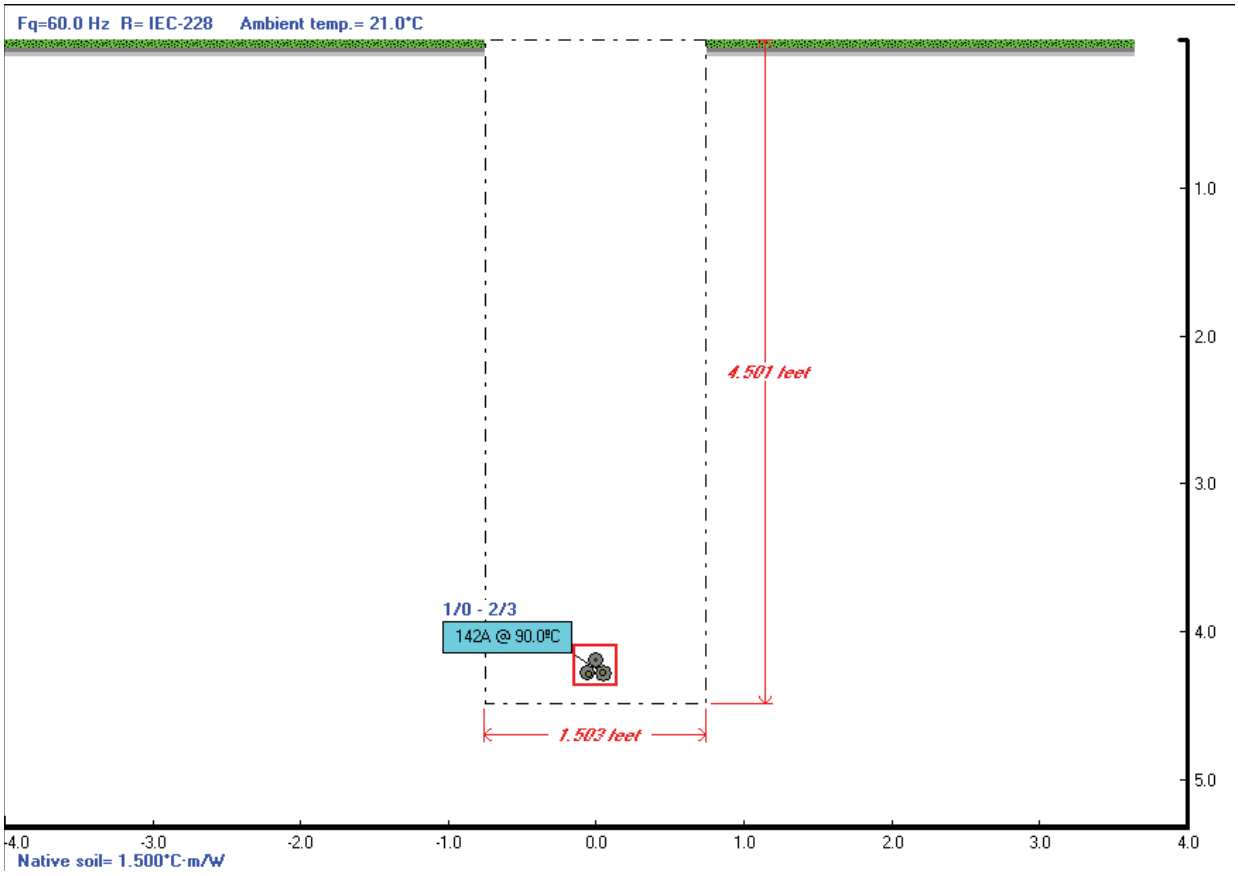
OPTION	DESCRIPTION	BOM CHANGES	QTY
1	Copper Conductor Cable	Junction boxes	8
		Remove 1250 kCMIL Aluminum	17,400'
		Add 1250 kCMIL Copper	17,400'
2	Slurry Backfill and Duct Bank	Add flowable fill	1,928 cu yd
		(trench feet 4 ckts)	19,280'
		Add 10x1.5' duct bank	1,450'
3	Additional Circuit and Duct Bank	Add 4/0 AWG AL 1/2CN	40,725'
		Add 7#8 trench ground	13,575'
		Add 13x1.5' duct bank	1,450'
		Additional trenching	8,040'

WETLANDS, ROAD AND PIPELINE CROSSINGS

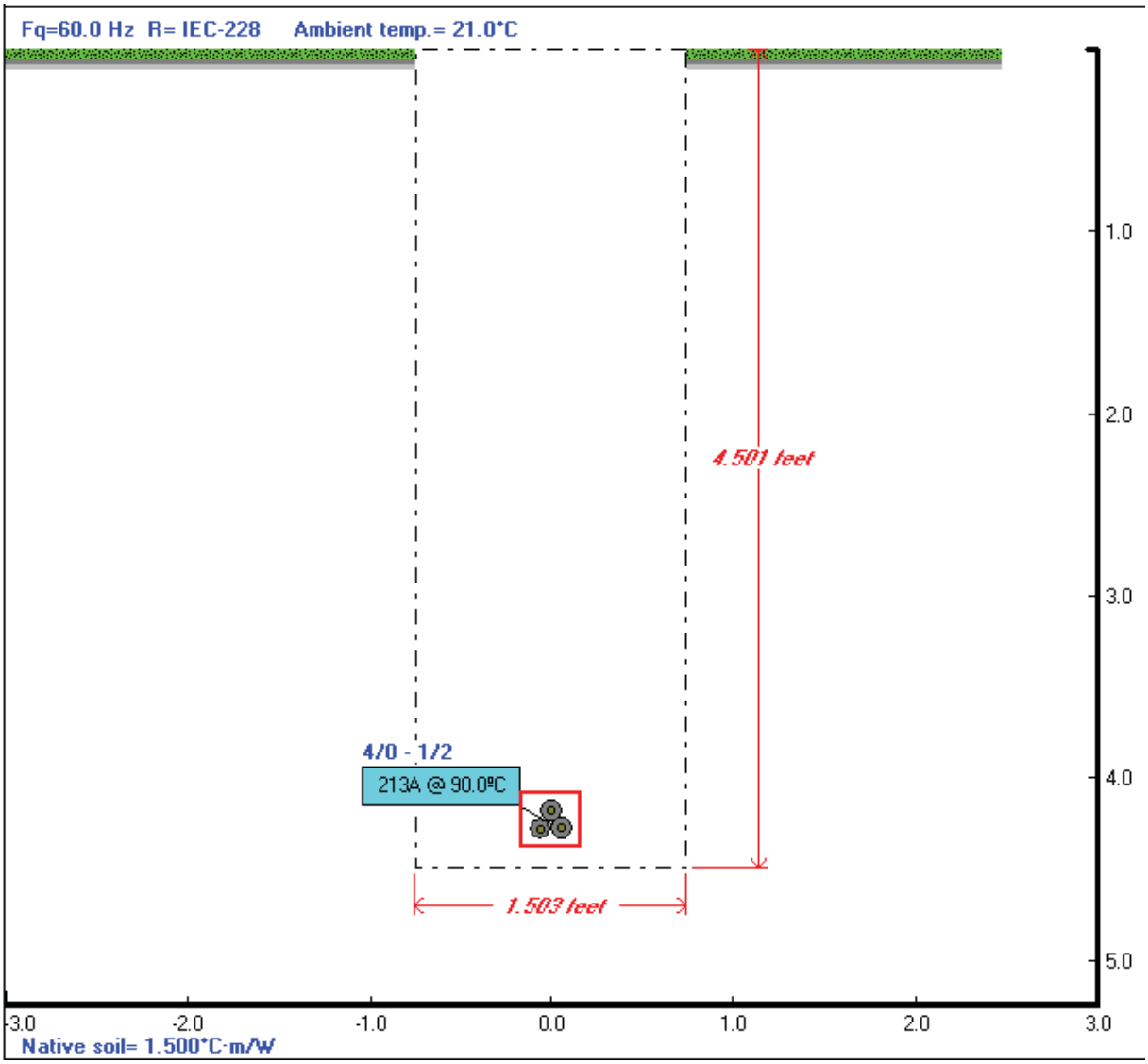
- There are several designated wetland areas, road and gas pipeline crossings throughout the site that require directional drill boring installation. The depth of the borings vary by crossing but are assumed a minimum of 10' depth at the time of this study.

Westwood

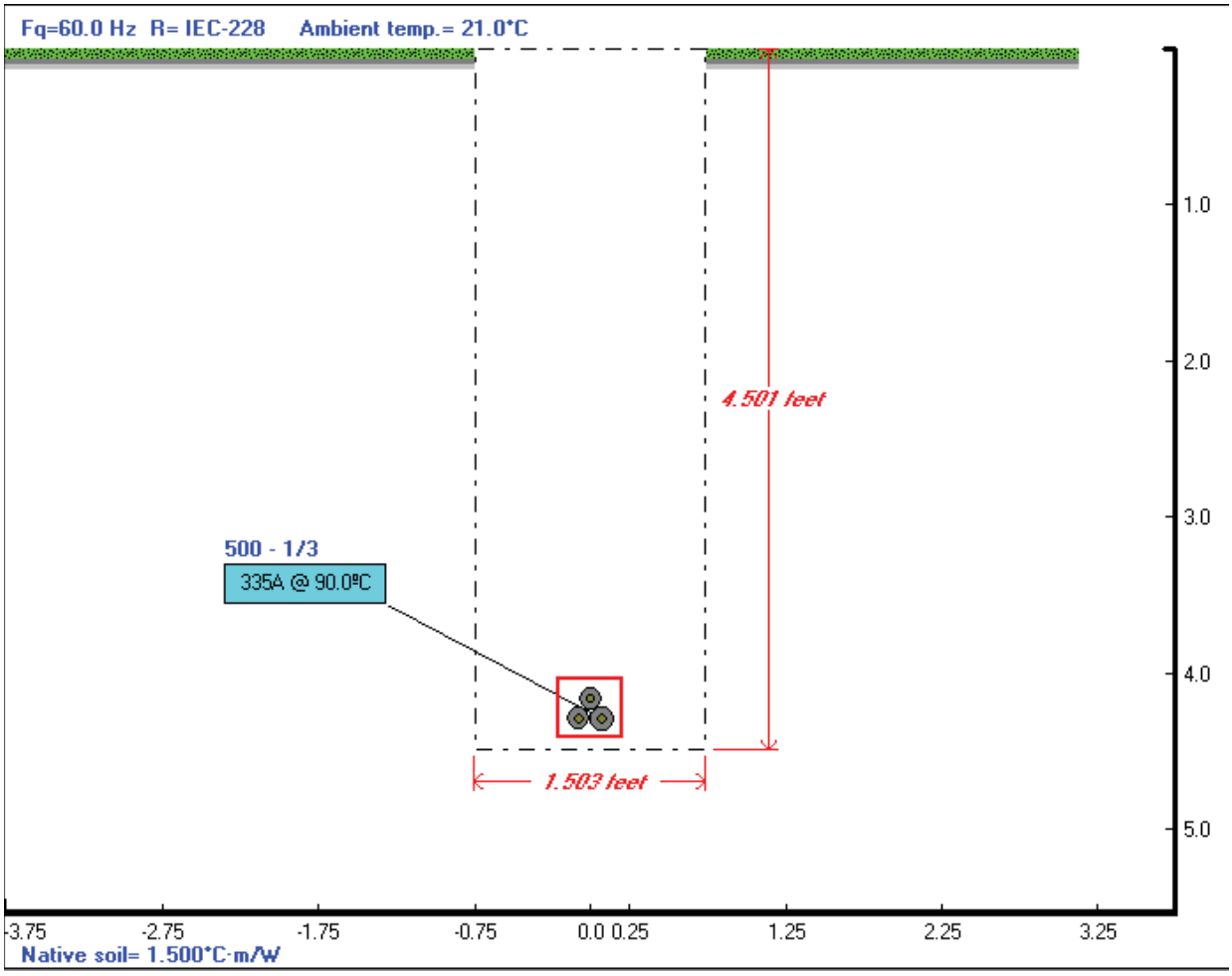
APPENDIX A: **SINGLE CIRCUIT CYMCAP REPORTS**



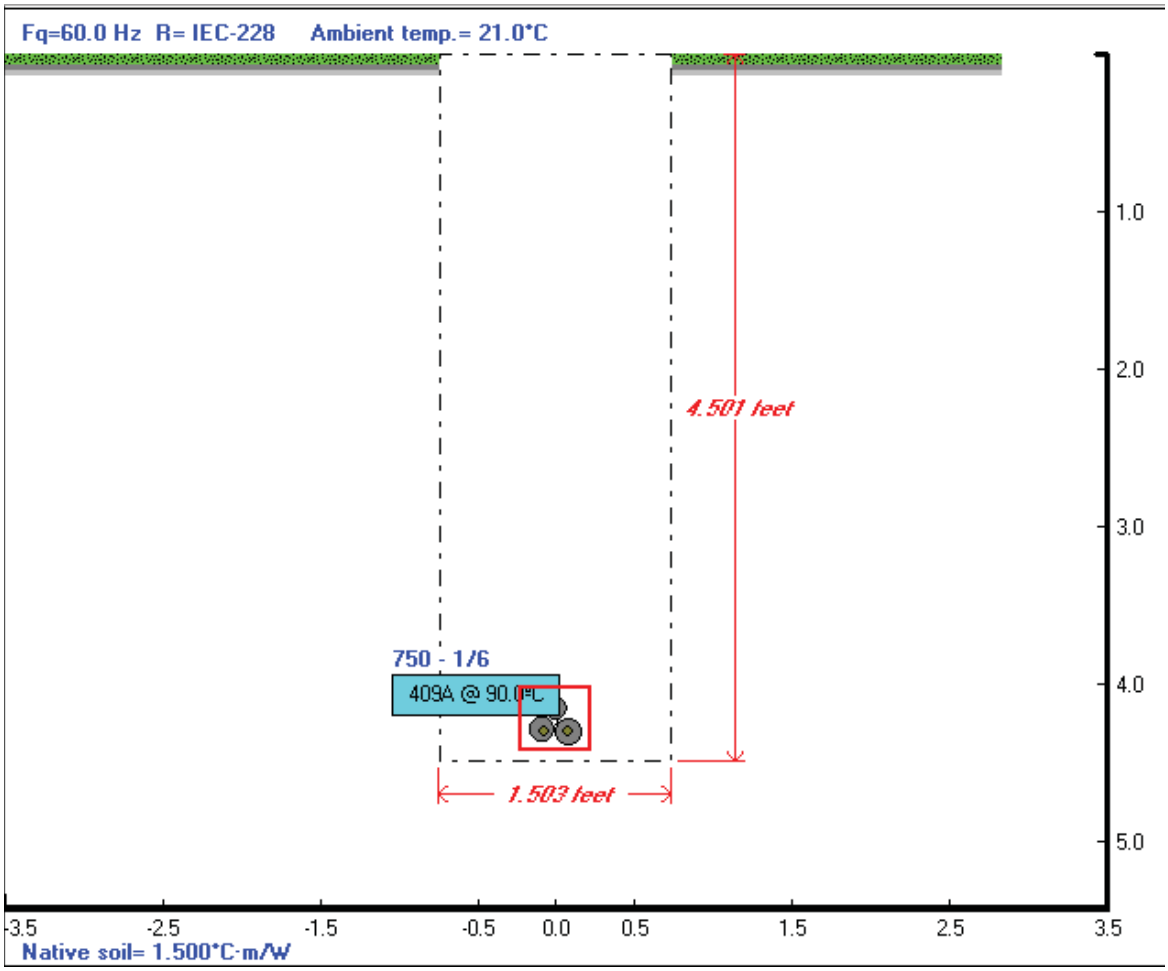
Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
4.501 feet
1.503 feet
4/0 - 1/2
213A @ 90.0ºC
1.0
2.0
3.0
4.0
5.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
Native soil= 1.500°C-m/W

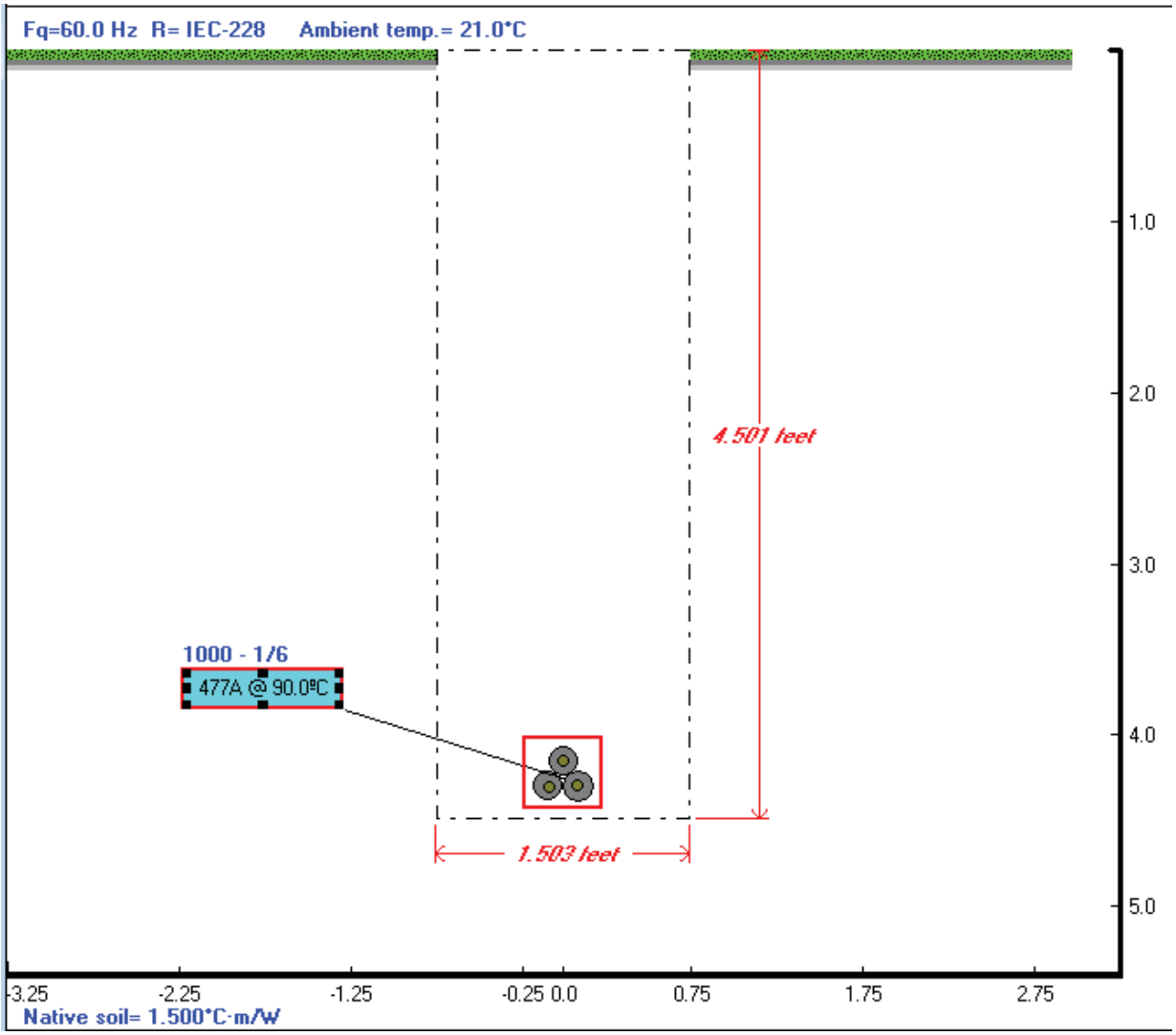
Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
4.501 feet
500 - 1/3
335A @ 90.0ºC
1.503 feet
1.0
2.0
3.0
4.0
5.0
-3.75
-2.75
-1.75
-0.75
0.0 0.25
1.25
2.25
3.25
Native soil= 1.500°C-m/W

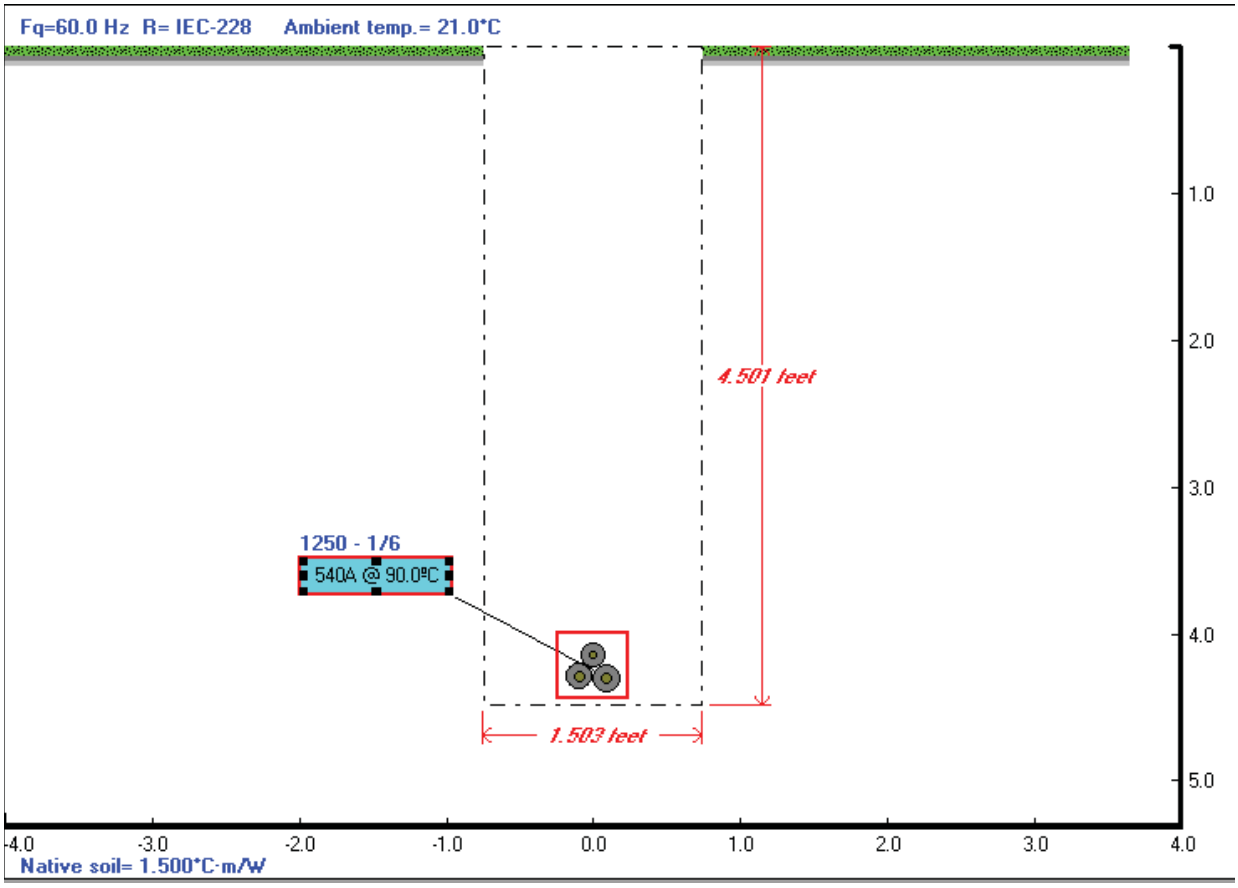
Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
4.501 feet
1.503 feet
750 - 1/6
409A @ 90.0°C
1.0
2.0
3.0
4.0
5.0
-3.5
-2.5
-1.5
-0.5
0.0
0.5
1.5
2.5
3.5
Native soil= 1.500°C-m/W

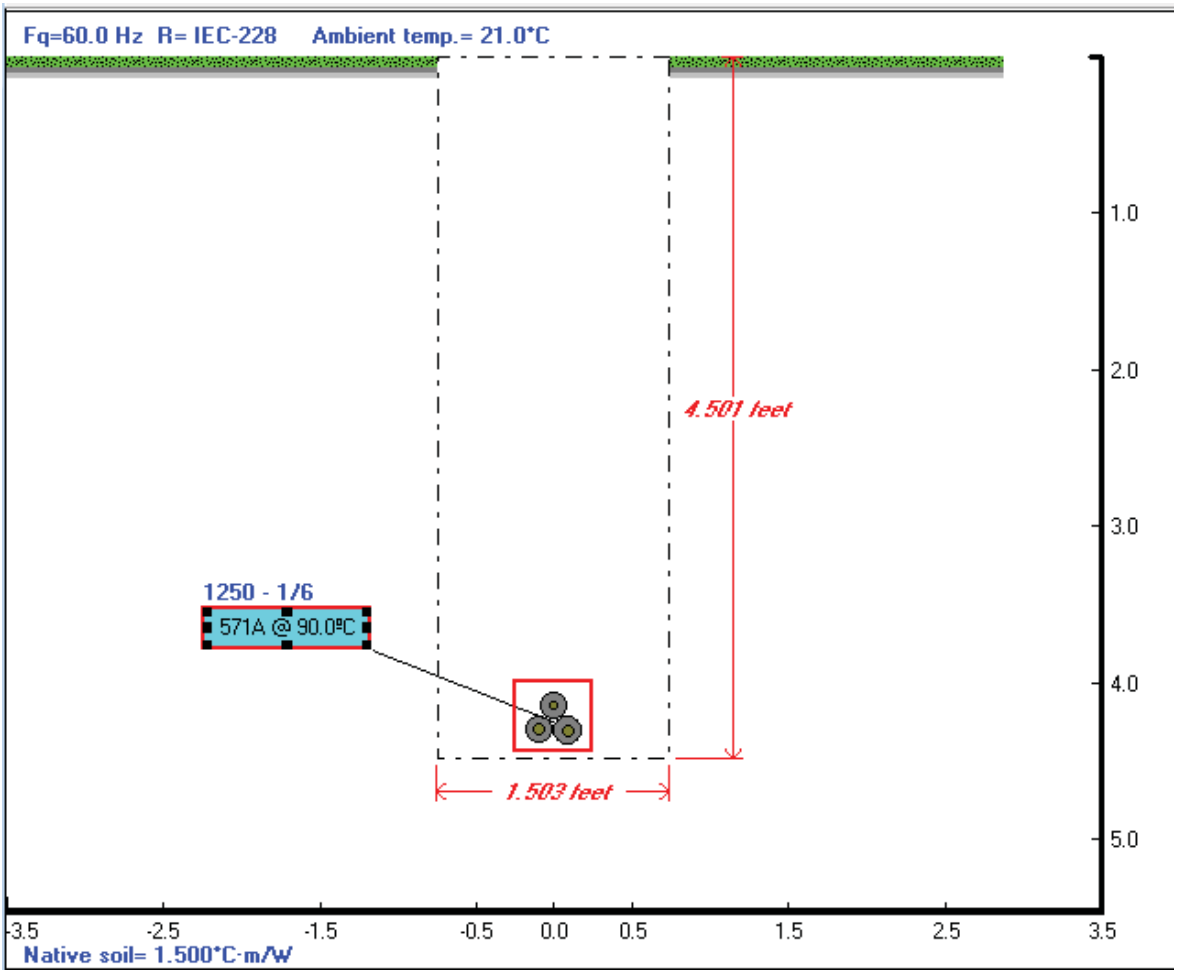
Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
4.501 feet
1.503 feet
1000 - 1/6
477A @ 90.0ºC
1.0
2.0
3.0
4.0
5.0
-3.25
-2.25
-1.25
-0.25 0.0
0.75
1.75
2.75
Native soil= 1.500°C-m/W

Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
4.501 feet
1250 - 1/6
540A @ 90.0ºC
1.503 feet
1.0
2.0
3.0
4.0
5.0
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
Native soil= 1.500°C-m/W

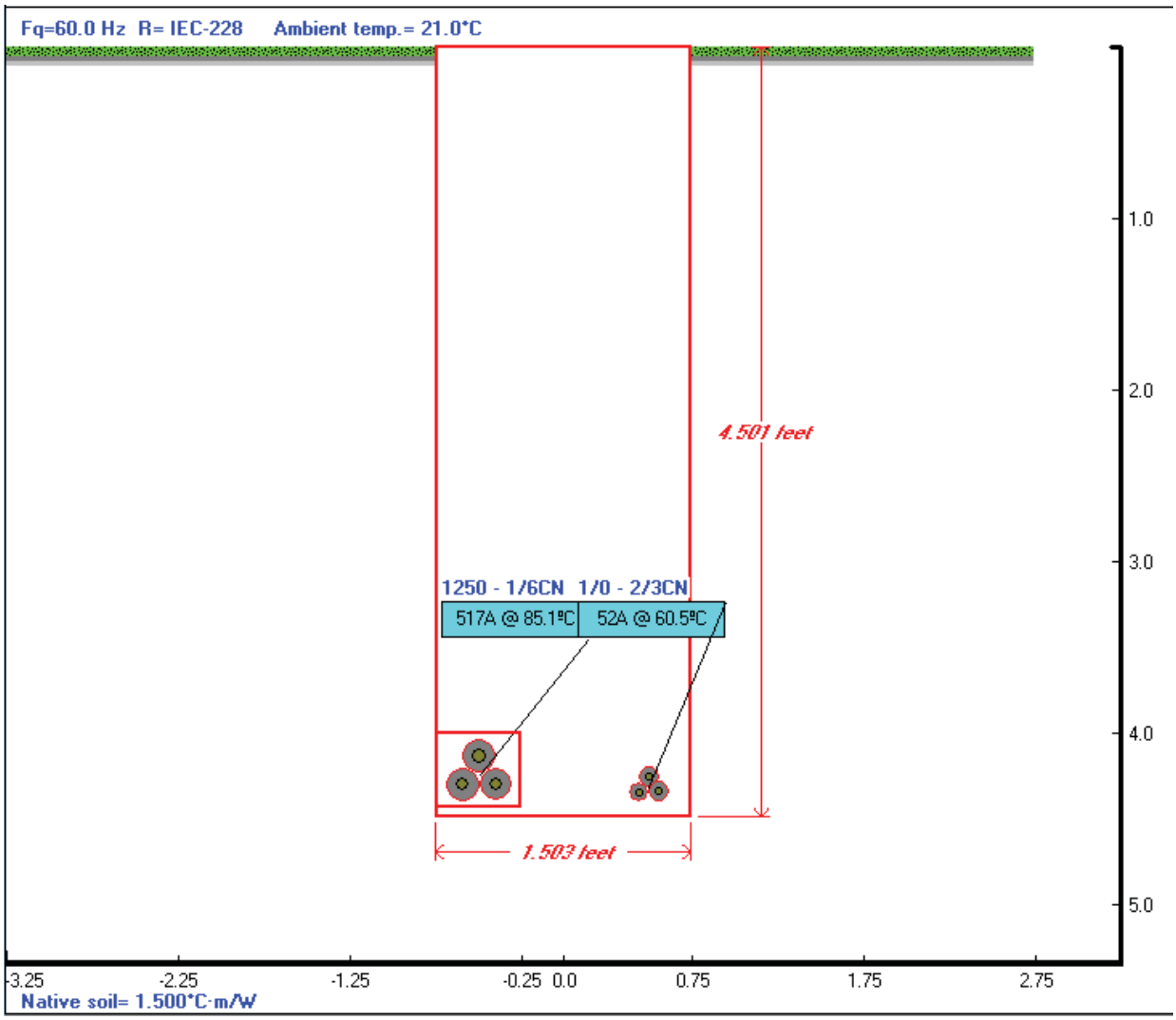
Westwood


Fq=60.0 Hz R= IEC-228 Ambient temp.= 21.0°C
1250 - 1/6
571A @ 90.0ºC
4.501 feet
1.503 feet
1.0
2.0
3.0
4.0
5.0
-3.5
-2.5
-1.5
-0.5
0.0
0.5
1.5
2.5
3.5
Native soil= 1.500°C-m/W

Westwood

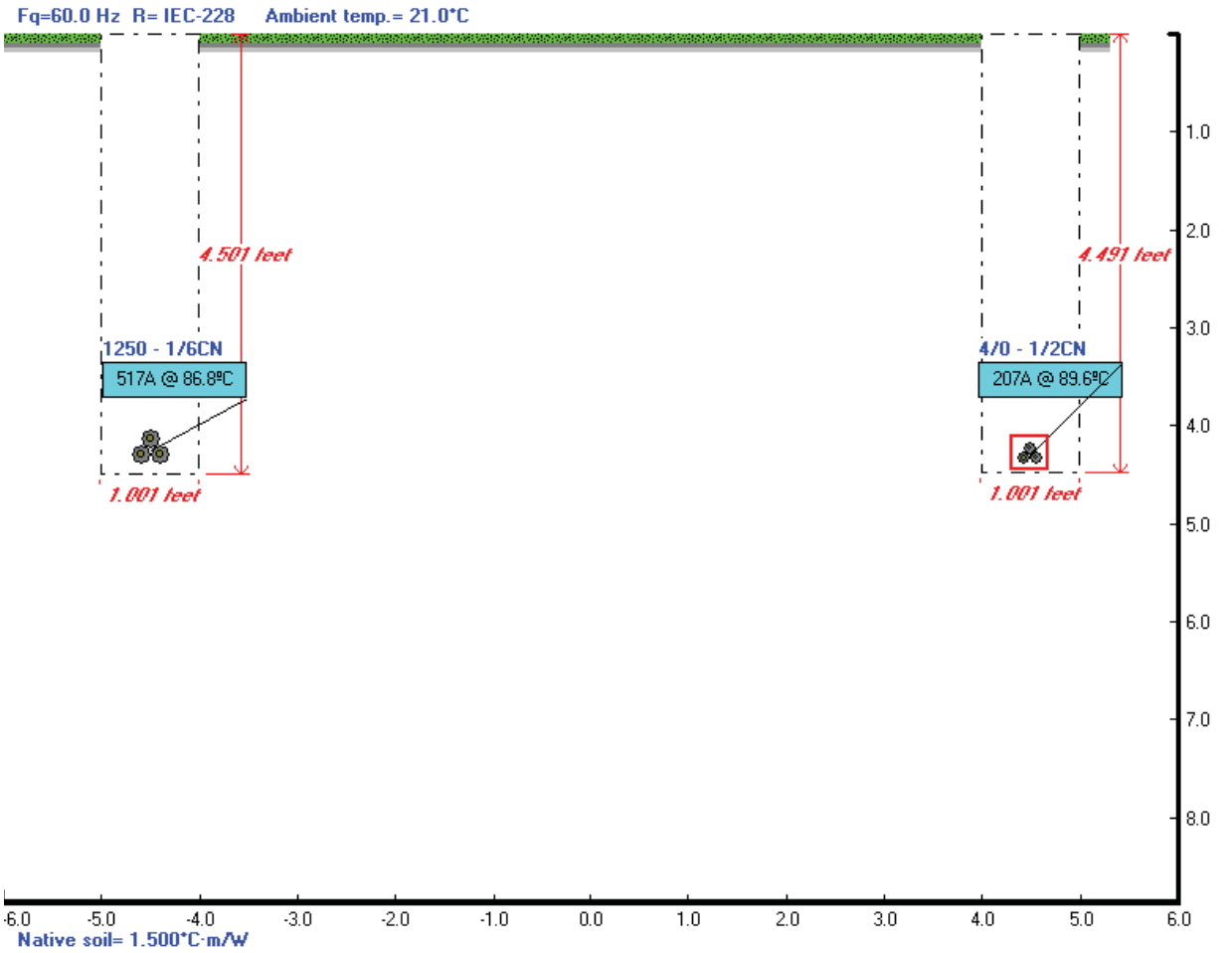
APPENDIX B: PARALLEL CIRCUIT CYMCAP REPORTS

ROW: T-34 to T39



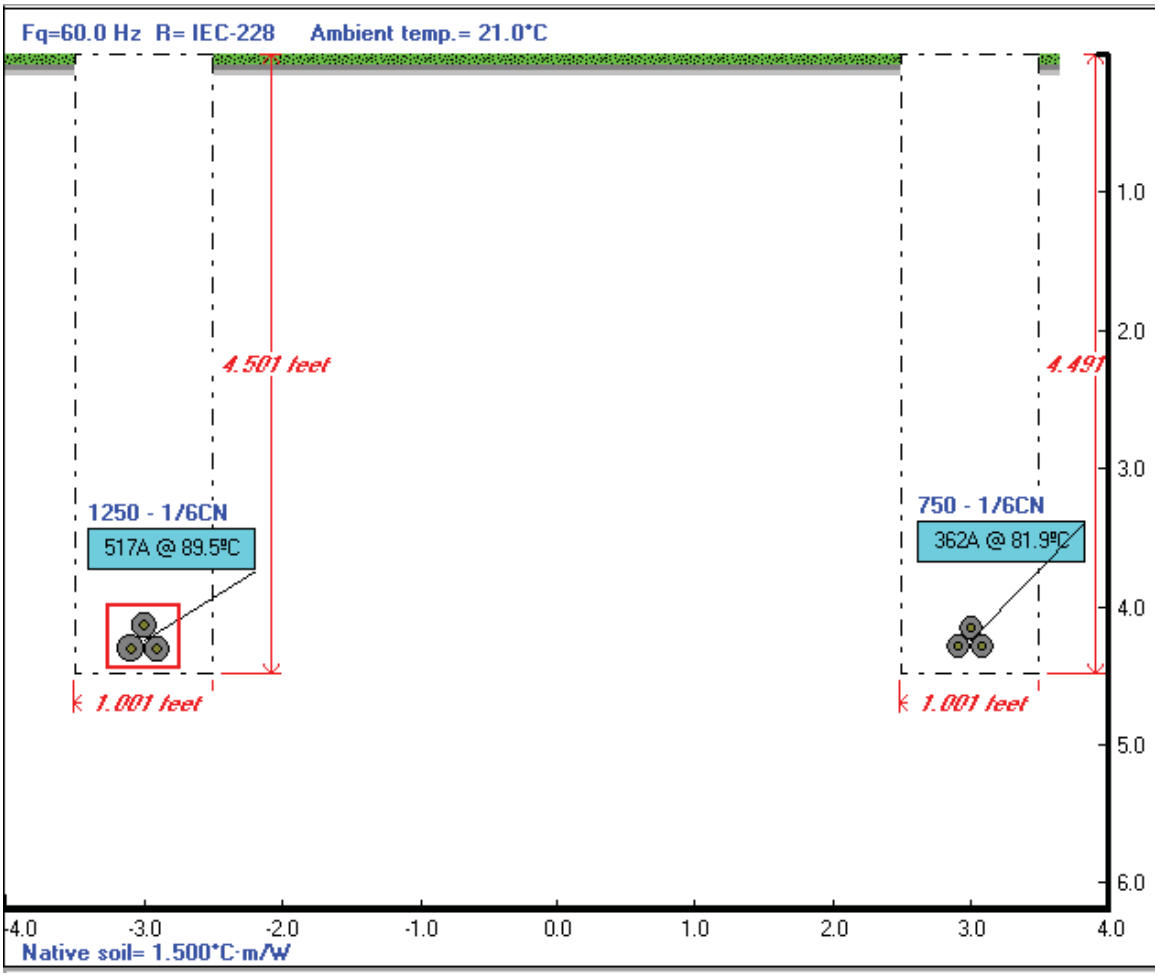
Westwood

ROW: T-33 to T-34



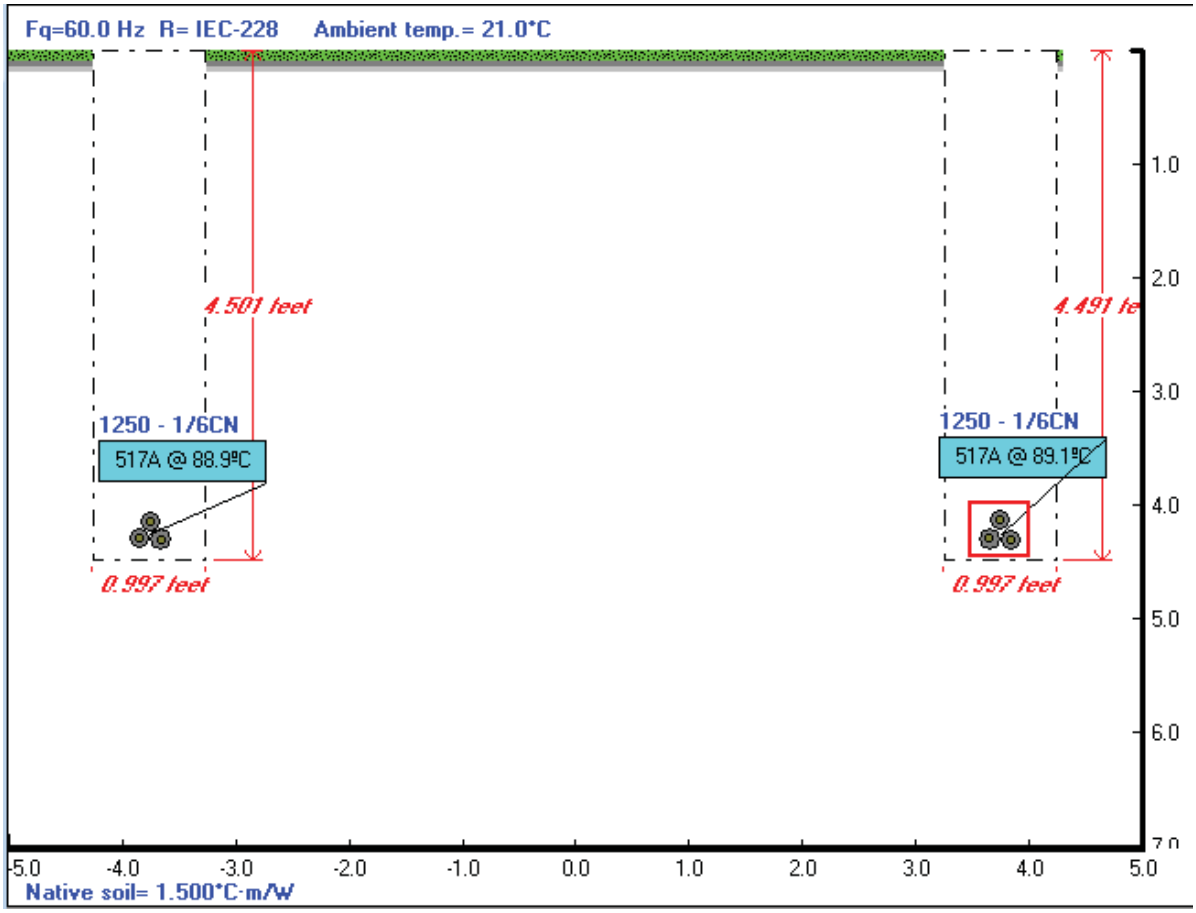
Westwood

ROW: T-28 to T-33



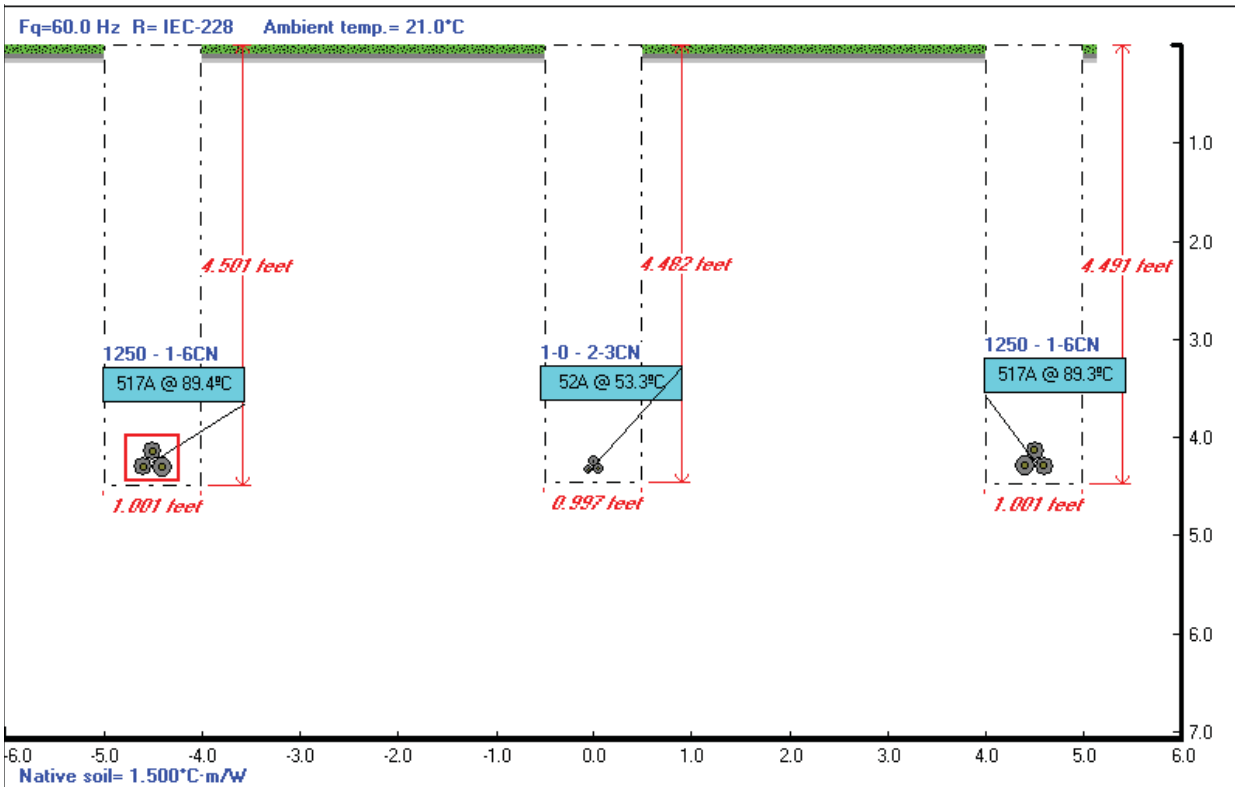
Westwood

ROW: T-23 to T-28



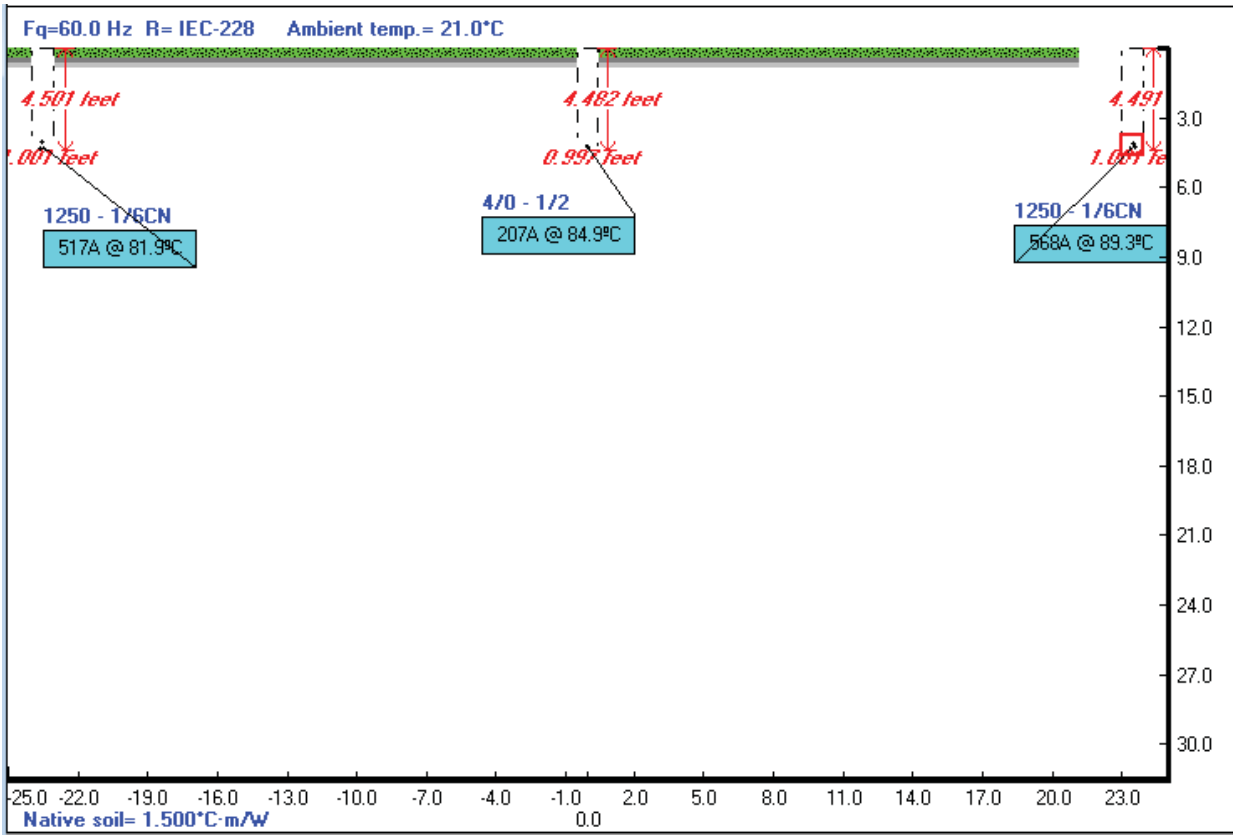
Westwood

ROW: T-22 to T-23



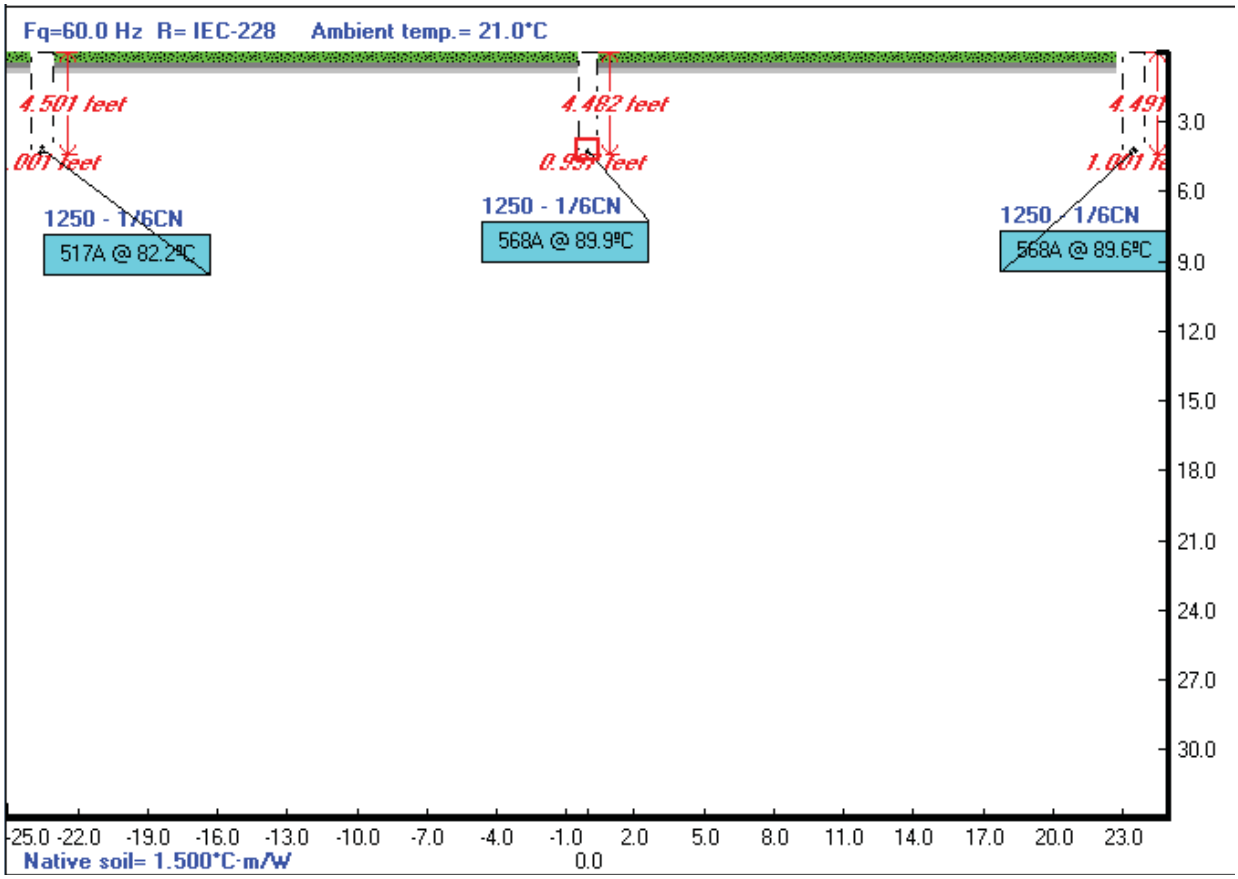
Westwood

ROW: JB-2/1 – T-22



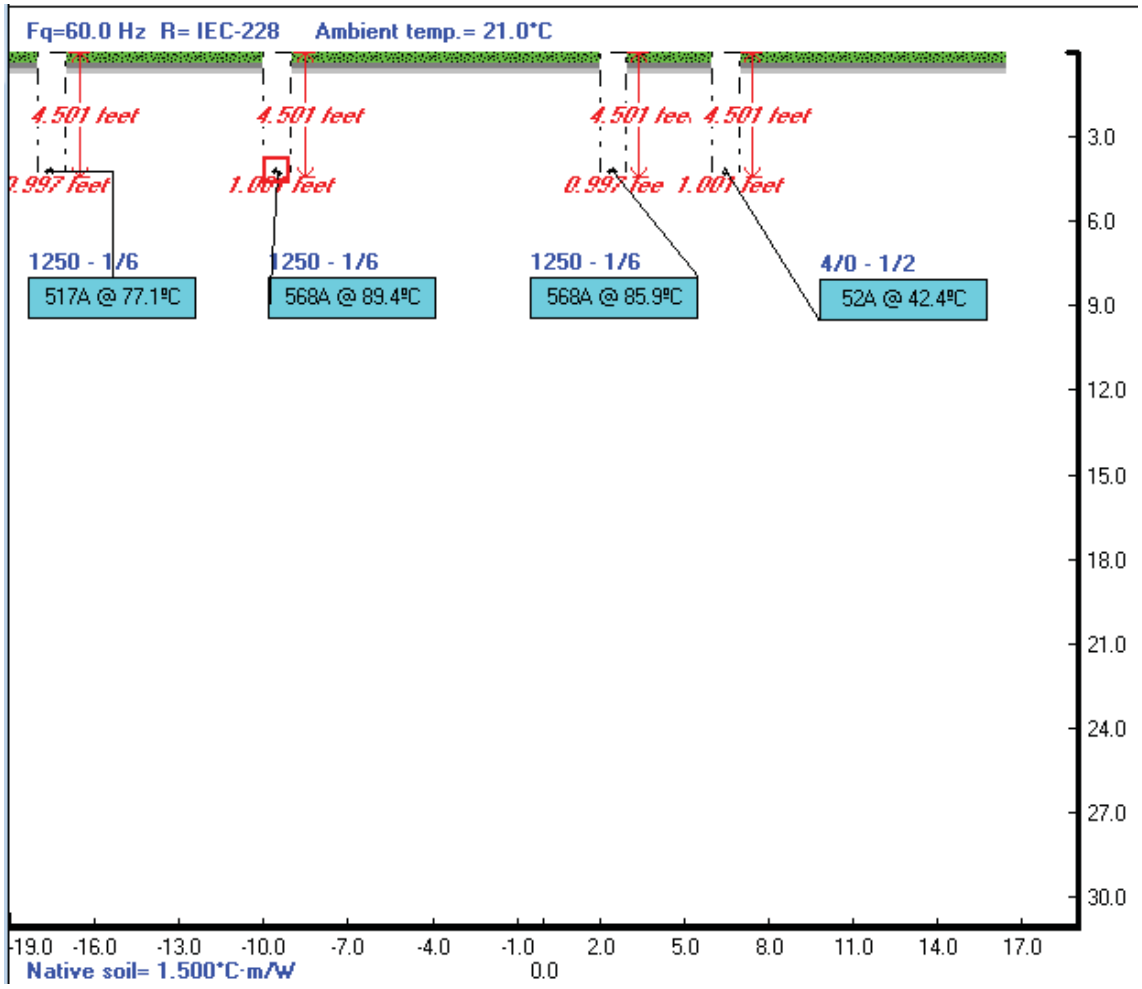
Westwood

ROW: T-24 to JB-2/1



Westwood

ROW: T-24 to T-25

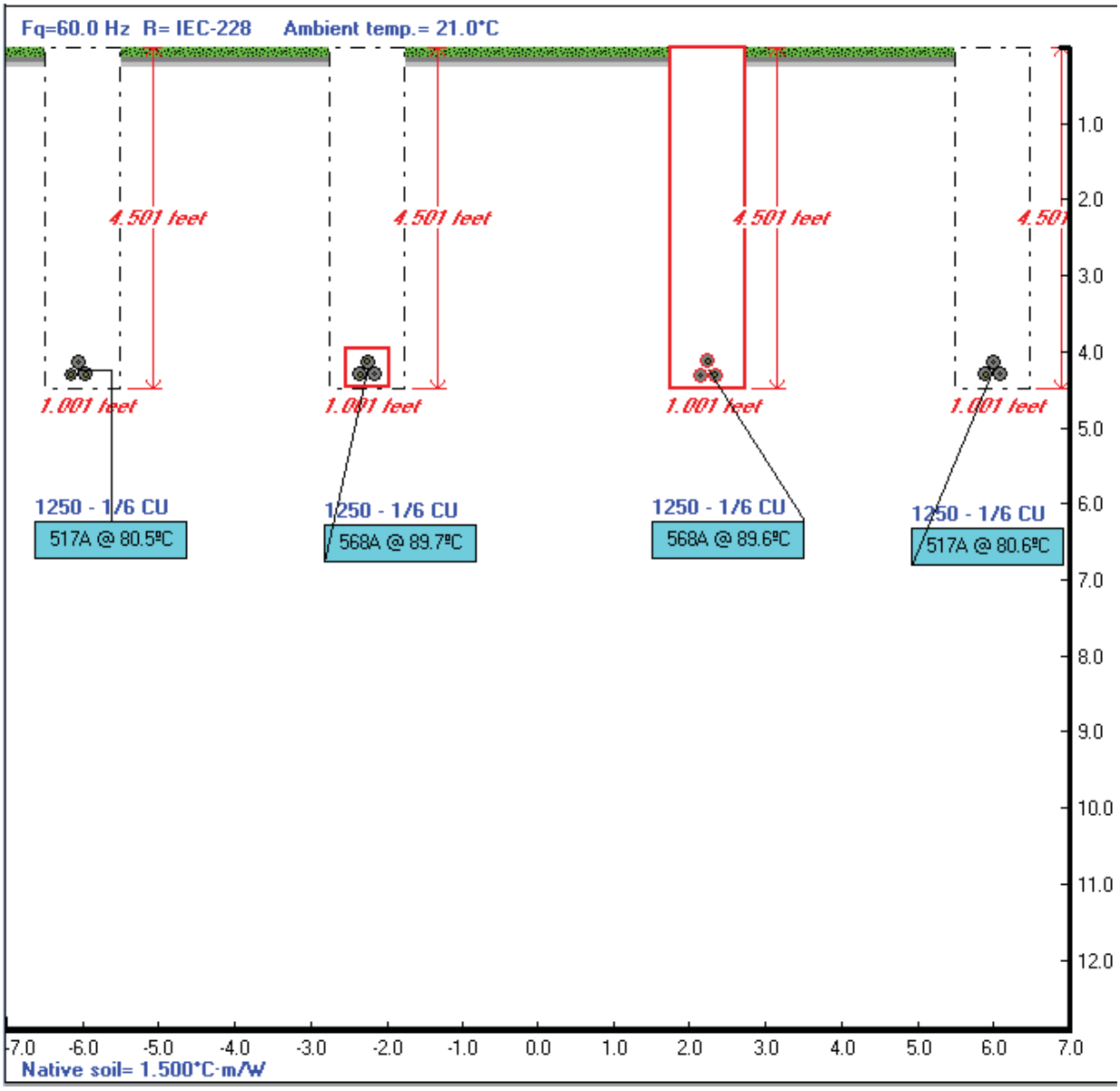


Westwood

ROW: T-25 to SUB OPTIONS

COPPER CABLES

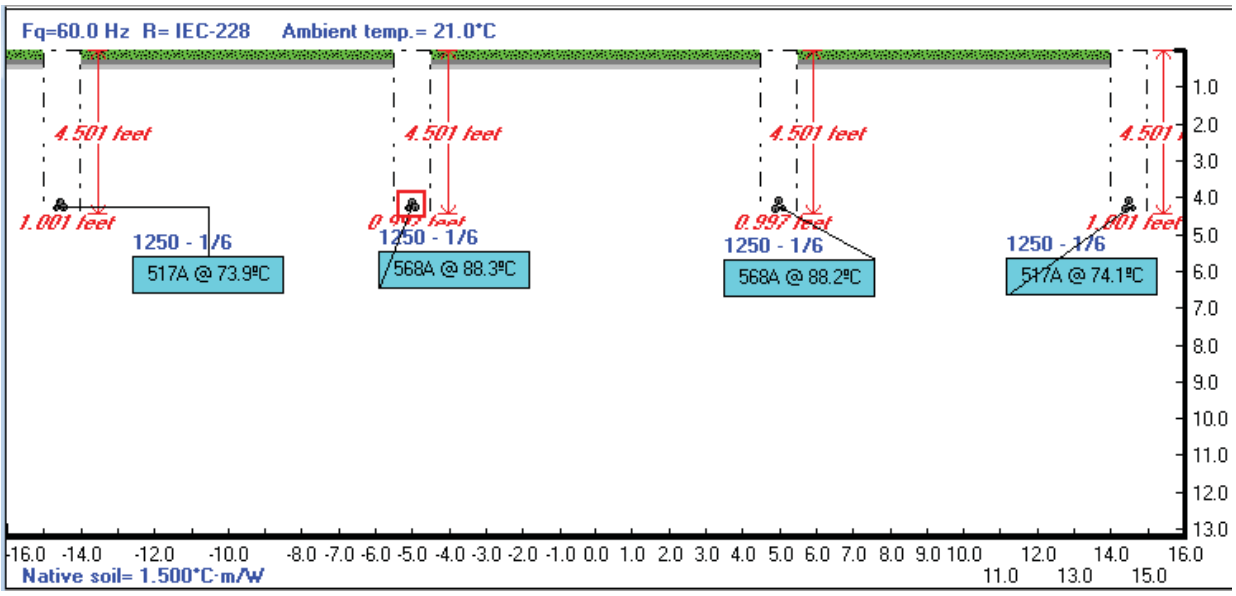
ROW :: T-25 to SUB



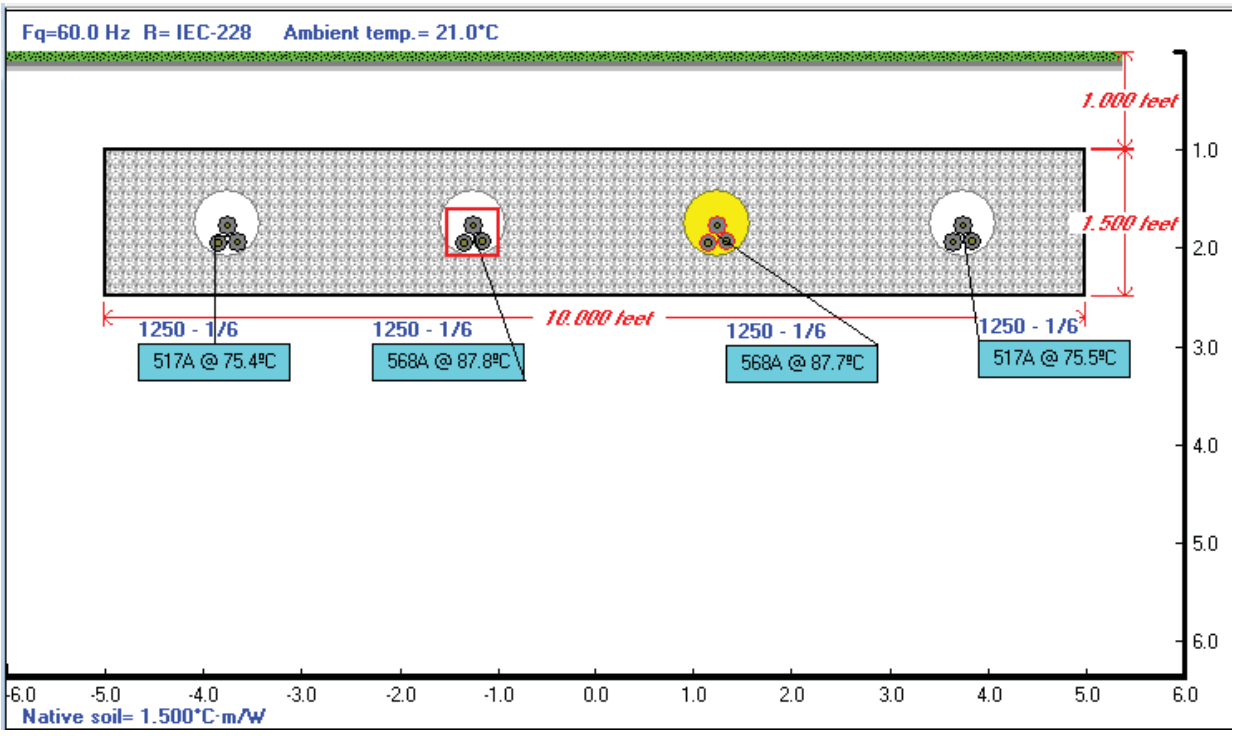
Westwood

SLURRY & DUCT BANK

ROW :: T-25 to SUB



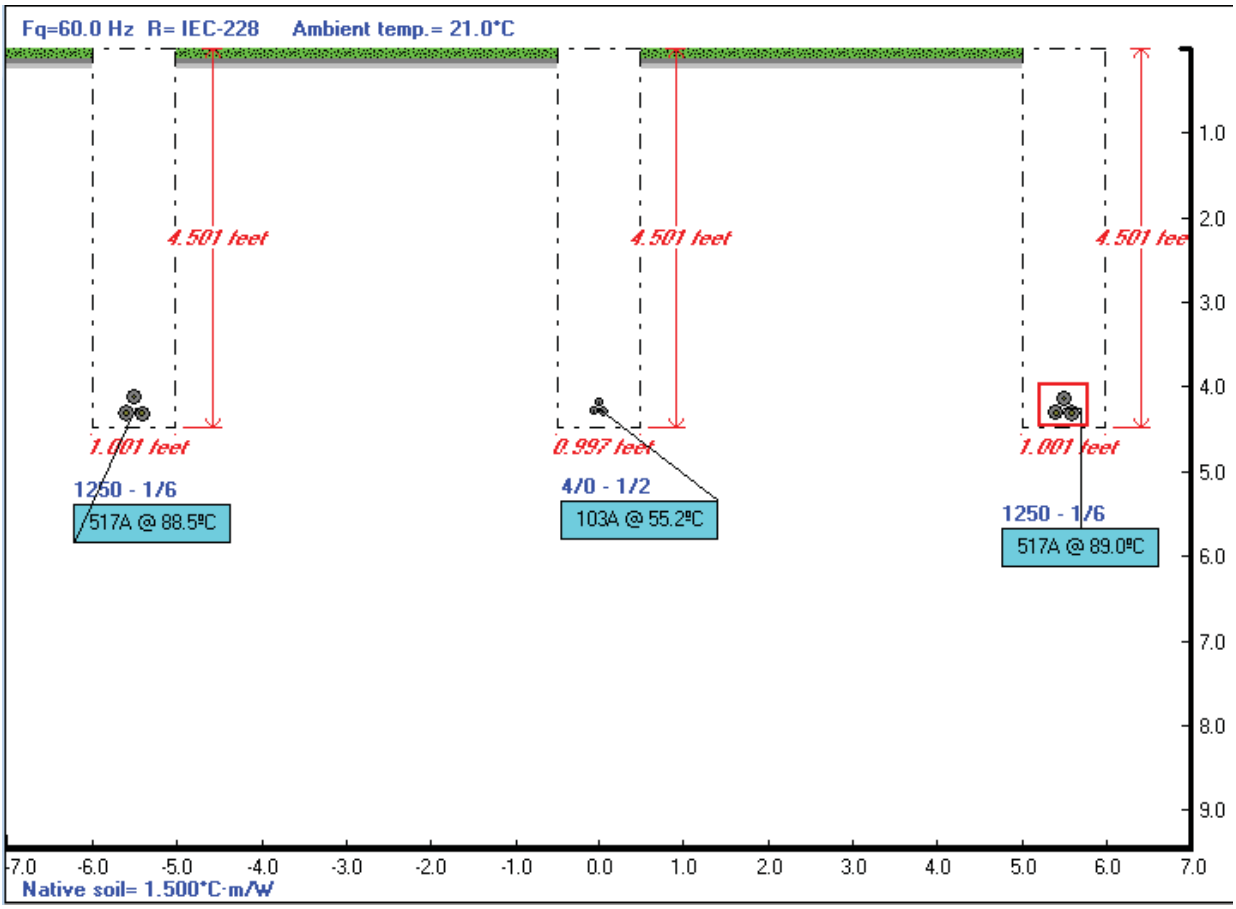
CONSTRAINED EASEMENT



Westwood

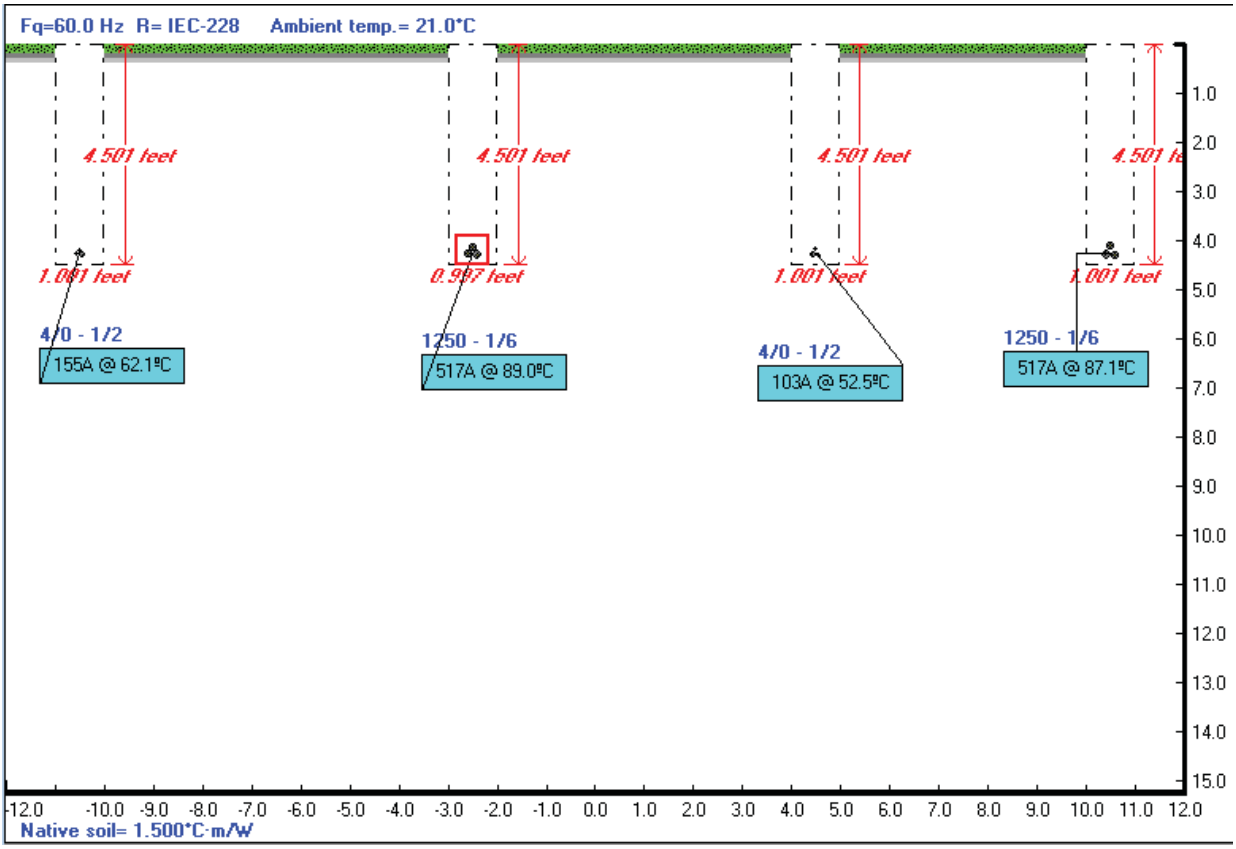
EXTRA TAP & DUCT BANK

ROW :: T-23 to T-22



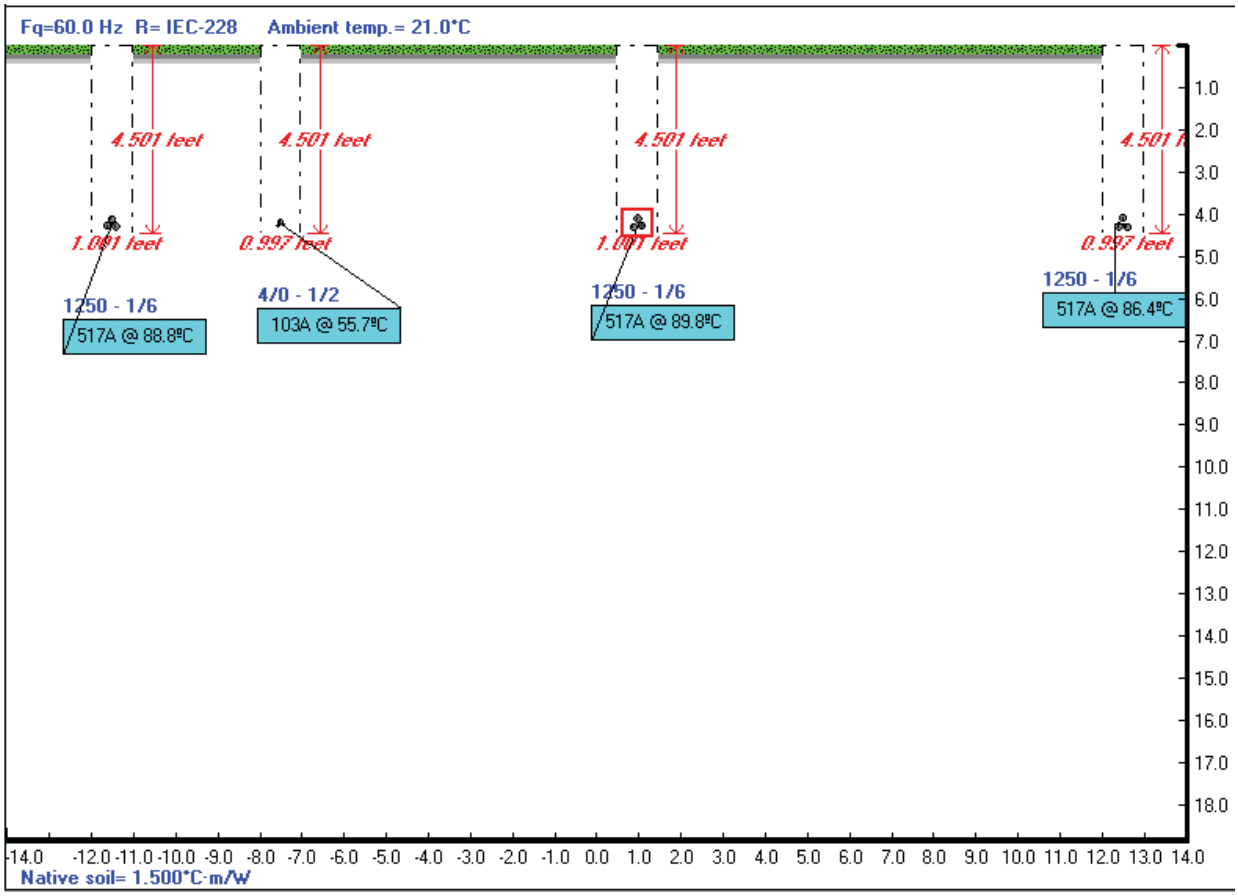
Westwood

ROW :: T-22 to JB-2/1



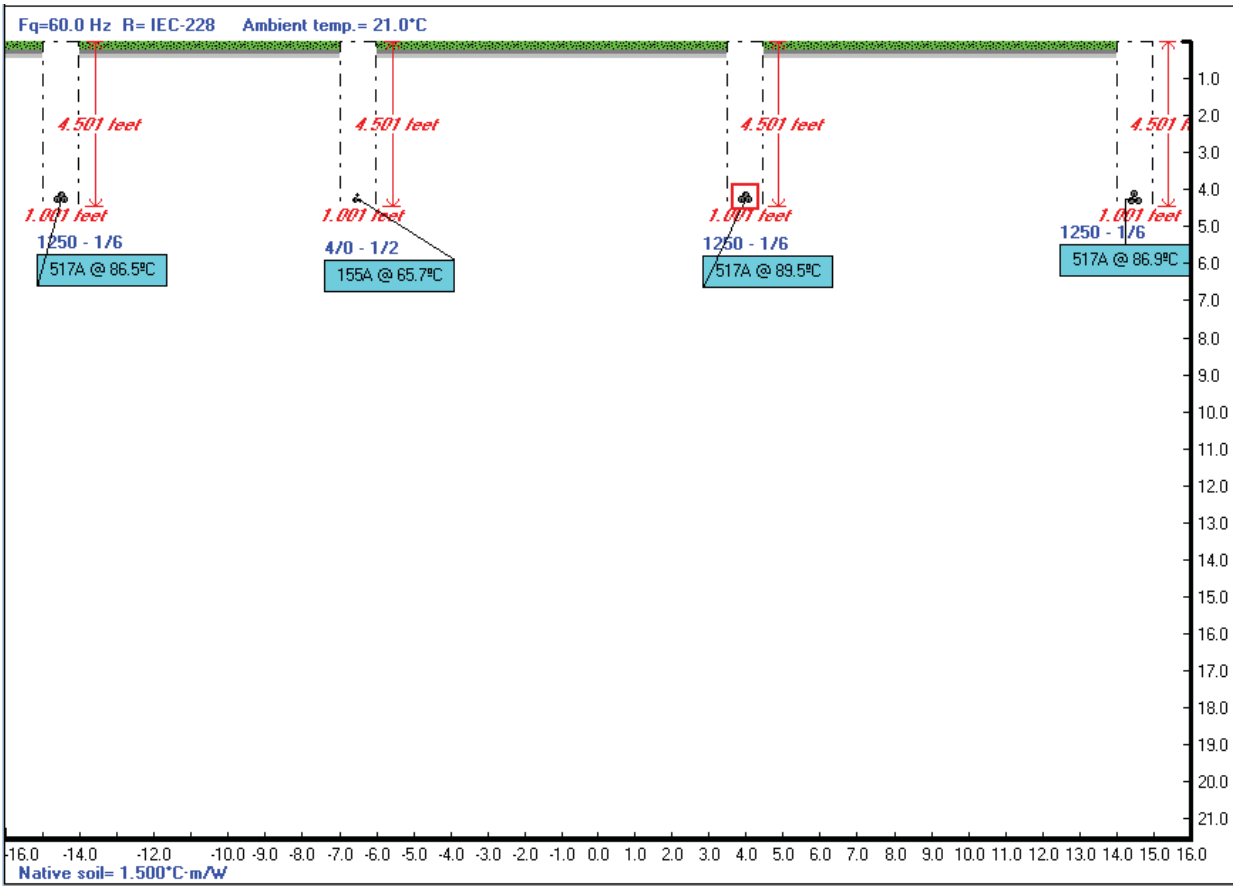
Westwood

ROW :: JB-2/1 to T-24



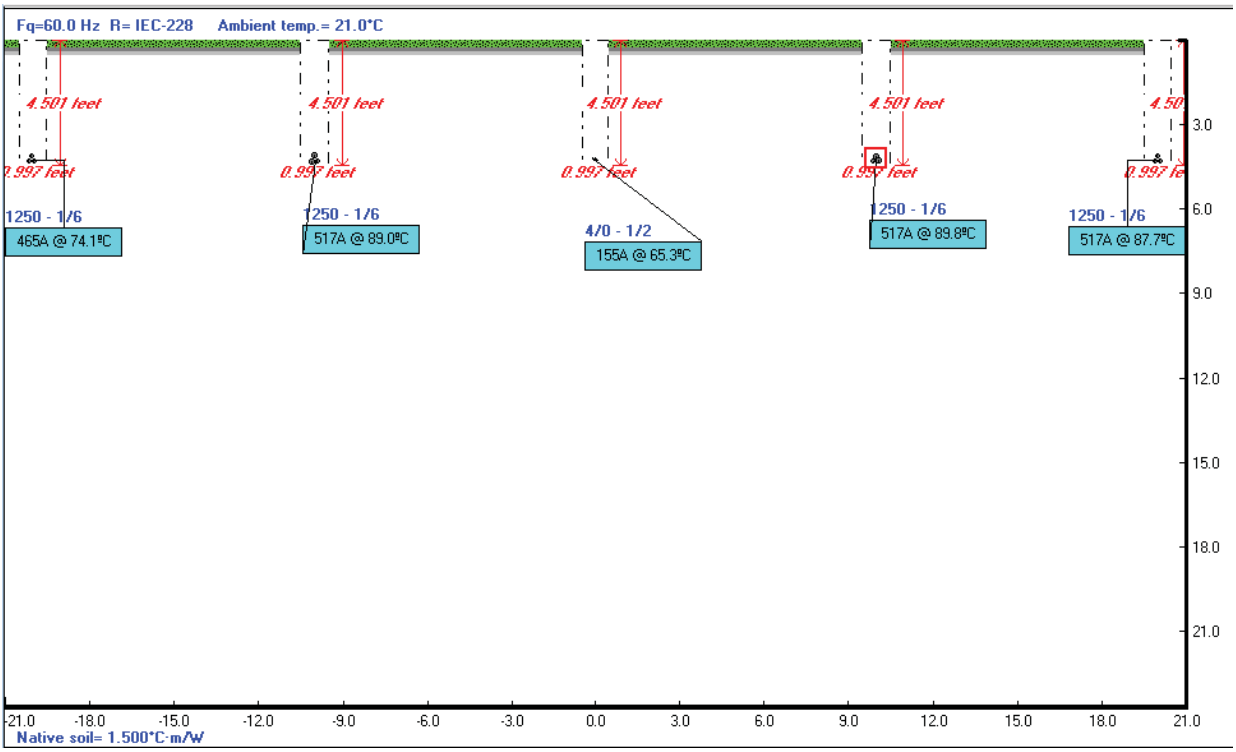
Westwood

ROW :: T-24 to T-25



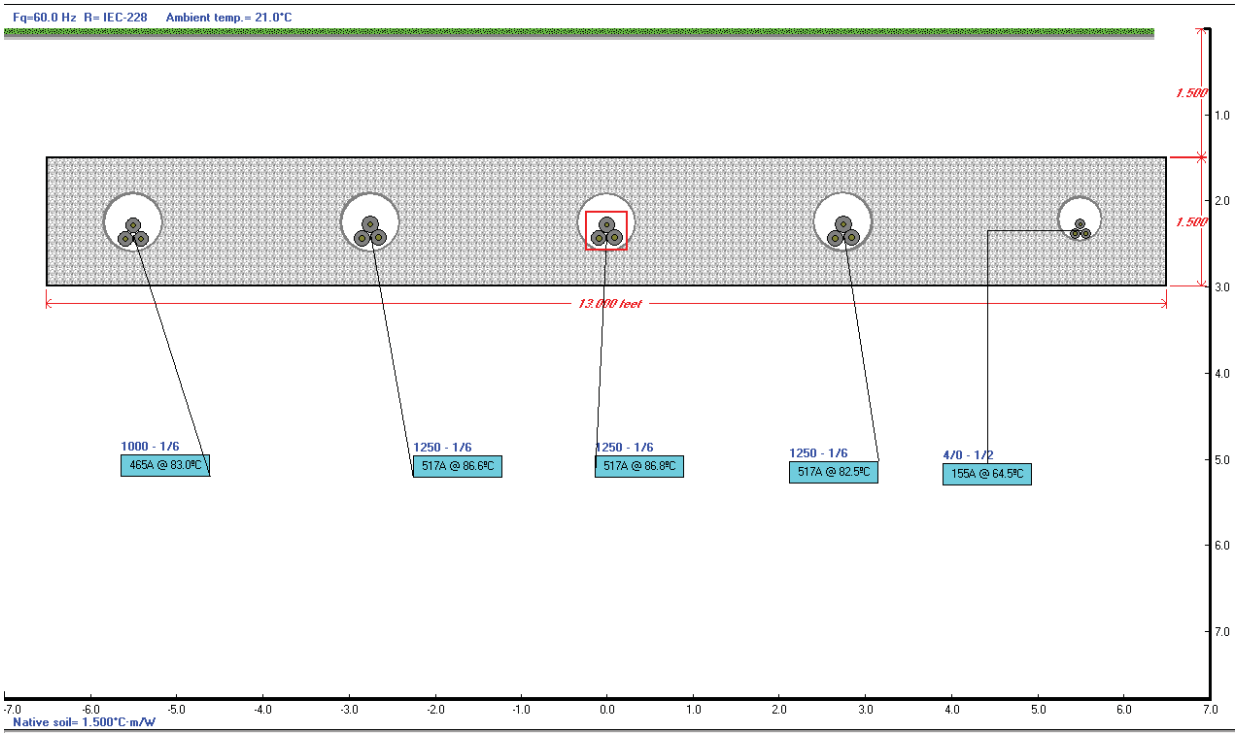
Westwood

ROW :: T-25 to SUB



Westwood

CONSTRAINED ROW



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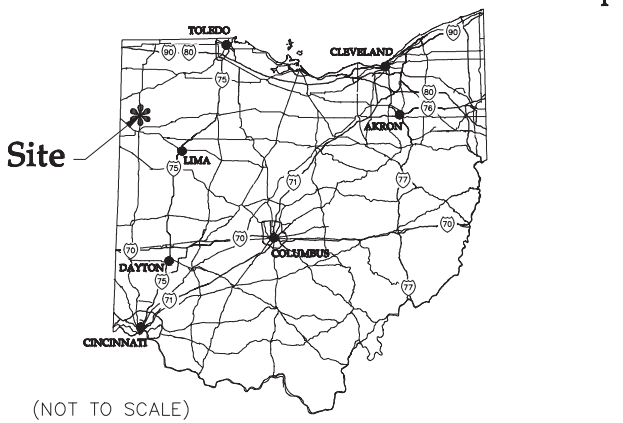
60% Electrical Collection Plans

for

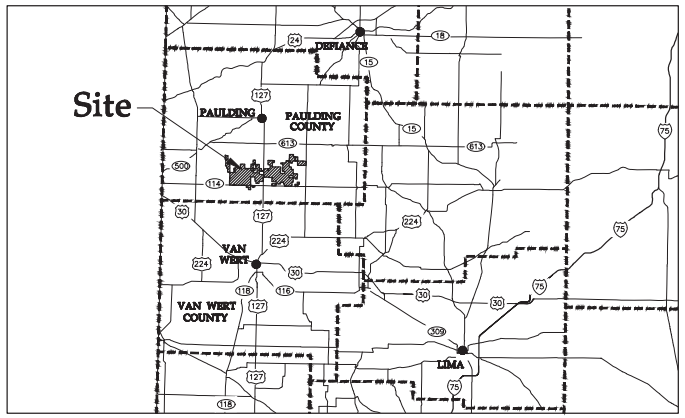
Northwest Ohio Wind Project

Paulding County, Ohio

State Map



Vicinity Map



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Westwood Professional Services, Inc.

Designed: JEV
Checked: AMS
Drawn: BMC, JEG
As-Built Drawing:

Revisions:

#	DATE	DESCRIPTION
A	09/27/17	30% plans
B	10/03/17	Issued for Procurement – Revised
C	10/19/17	60% plans

Prepared for:

WHITE an MEA company

3900 E. White Ave
Clinton, IN 47842

Trishe Wind Ohio, LLC
c/o Starwood Energy Group, LLC
5 Greenwich Office Park, 2nd Floor
Greenwich, CT 06831

Northwest Ohio Wind Project
Paulding County, Ohio

Cover Sheet

Not For Construction
Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.100

0007186_E100 COVER.dwg

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Sheet Number	**Sheet Title**
E.100	Cover Sheet
E.101	Index Sheet
E.105	General Symbology & Abbreviations
E.200	MVAC Oneline Diagram Circuits 1 and 2
E.201	MVAC Oneline Diagram Circuits 3 and 4
E.210	Fiber Optic Oneline Diagram
E.211	Fiber Optic Oneline Diagram (2)
E.300	Overall Electrical Site Plan
E.310	Electrical Site Plan
E.311	Electrical Site Plan
E.312	Electrical Site Plan
E.313	Electrical Site Plan
E.314	Electrical Site Plan
E.315	Electrical Site Plan
E.316	Electrical Site Plan
E.317	Electrical Site Plan
E.318	Electrical Site Plan
E.319	Electrical Site Plan
E.320	Electrical Site Plan
E.321	Electrical Site Plan
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E.323	Electrical Site Plan

Sheet List Table	
Sheet Number	**Sheet Title**
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E.325	Electrical Site Plan
E.326	Electrical Site Plan
E.327	Electrical Site Plan
E.328	Electrical Site Plan
E.329	Electrical Site Plan
E.330	Electrical Site Plan
E.331	Electrical Site Plan
E.400	Medium Voltage Trench Details
E.401	Medium Voltage Underground Cable Splice
E.402	Medium Voltage & FO Crossing Details
E.403	Medium Voltage & FO Crossing Details (2)
E.404	Fiber Splice Box
E.410	Below Grade Work GE 2.5-116 Turbines
E.411	Turbine Grounding - Spread Foundation GE 2.5-116
E.420	Padmount Transformer Feedthrough
E.421	Padmount TransformerTerminal
E.422	Sectionalizing Cabinet, 3 Way
E.423	Sectionalizing Cabinet, 4 Way
E.440	Marker Poles and Bollards
E.800	MVAC Wiring Schedule
E.801	Boring Schedule

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Checked: ANS
Drawn: BMC, BEG
As-Built Drawing:

Revisions

#	DATE	DESCRIPTION
A	09/27/17	30% plans
B	10/03/17	Issued for Procurement - Revised
C	10/19/17	60% plans

Prepared for:

WHITE an MEA company

3900 E. White Ave
Clinton, IN 47842

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5 Greenwich Office Park, 2nd Floor
Greenwich, CT 06831

Northwest Ohio Wind Project

Paulding County, Ohio

Index Sheet

Not For Construction
Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.101

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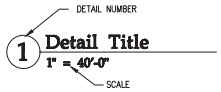
GENERAL SYMBOLOGY

NORTH ARROW

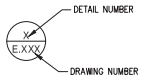
KEYNOTE

B OR MV01 CONDUCTOR ID

DETAIL TITLE



DETAIL CALLOUT



MATERIALS IN PLAN/SECTION

RIPRAP (PLAN AND/OR SECTION)

CONCRETE (PLAN AND/OR SECTION)

GRANULAR FILL (SECTION)

UNDISTURBED EARTH (SECTION)

COMPACTED EARTH (SECTION)

SAND (SECTION)

NOTES

1. THIS IS A STANDARD SYMBOLOGY AND ABBREVIATION SHEET. ALL SYMBOLS AND ABBREVIATIONS ARE NOT NECESSARILY USED ON THIS PROJECT.
2. THESE SYMBOLS AND ABBREVIATIONS APPLY TO THIS ENTIRE SET OF ELECTRICAL (E.XXX) DRAWINGS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

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Westwood Professional Services, Inc.

Designed: RV
Checked: AMS
Drawn: BSC, BIG
As-Built Drawing:

Revisions:

#	DATE	DESCRIPTION
A	09/27/17	30% plans
B	10/03/17	Issued for Procurement – Revised
C	10/19/17	60% plans

Prepared for:

WHITE an MEA company

3900 E. White Ave
Clinton, IN 47842

Trishe Wind Ohio, LLC
c/o Starwood Energy Group, LLC
5 Greenwich Office Park, 2nd Floor
Greenwich, CT 06831

Northwest Ohio Wind Project

Paulding County, Ohio

General Symbology & Abbreviations

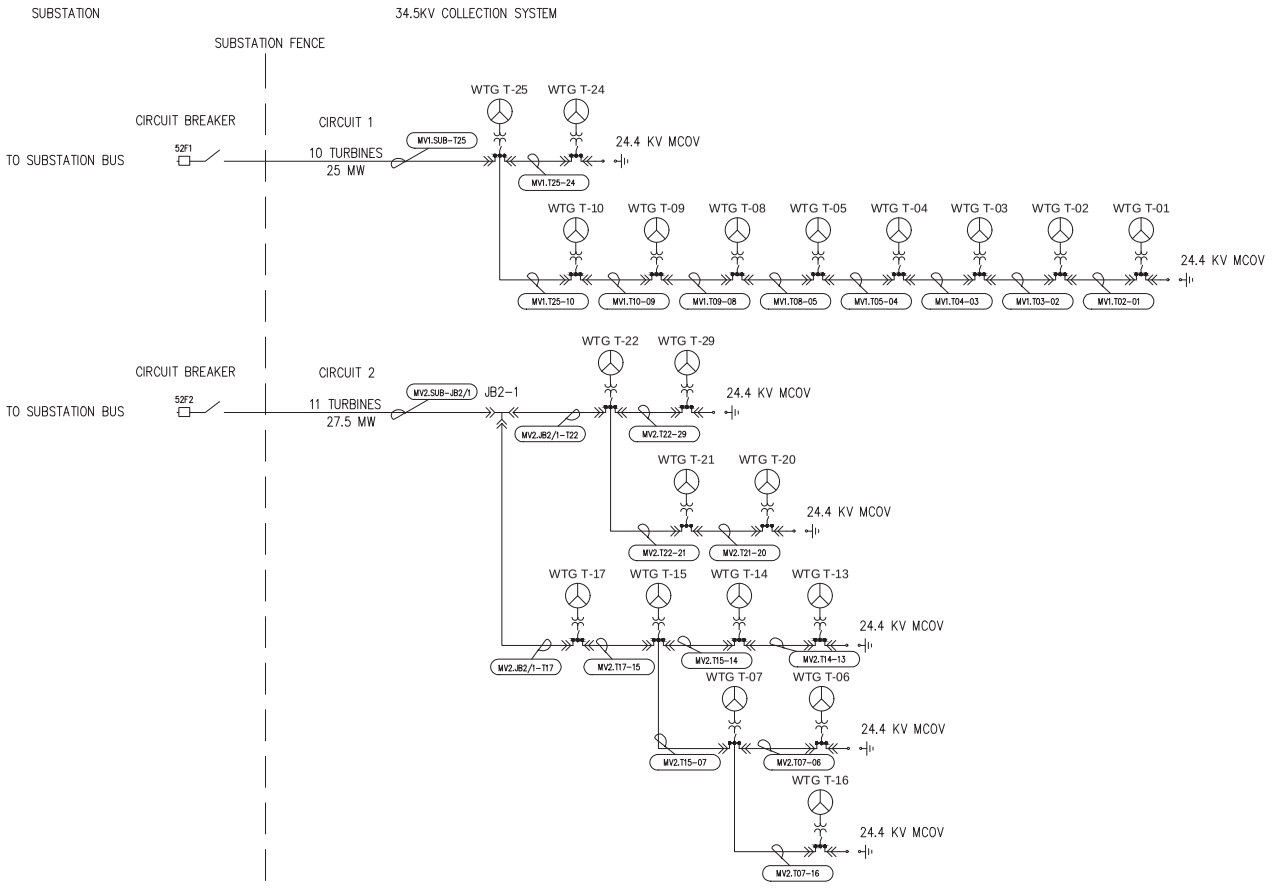
Not For Construction
Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.105

0007186_E100_Project Information.dwg

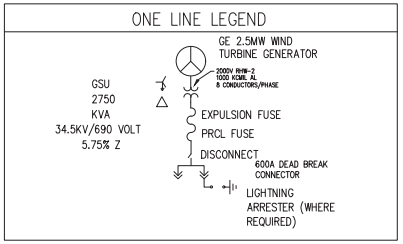
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GENERAL NOTES

1. SEE SUBSTATION DRAWING NWO-OLI-001 FOR SUBSTATION SINGLE LINE DRAWING.
2. ALL SURGE ARRESTERS 24.4KV MCOV.
3. SEE E.800 FOR MVAC WIRE SCHEDULE.



ONE LINE LEGEND



35 kV CABLE AND CONCENTRIC NEUTRAL SIZES

PHASE CONDUCTOR		CONCENTRIC NEUTRAL			
SIZE	MAT'L	DESIGNATION	MAT'L	WIRE SIZE	WIRE QTY
1/0 AWG	Al	2/3	Cu	14 AWG	11
4/0 AWG	Al	1/2	Cu	14 AWG	16
500 kCMIL	Al	1/3	Cu	14 AWG	16
750 kCMIL	Al	1/6	Cu	14 AWG	19
1000 kCMIL	Al	1/6	Cu	16 AWG	16
1250 kCMIL	Al	1/6	Cu	12 AWG	20

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Designed: RV
Checked: AMS
Drawn: BSC, BIG
As-Built Drawing:

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5 Greenwich Office Park, 2nd Floor
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Northwest Ohio Wind Project

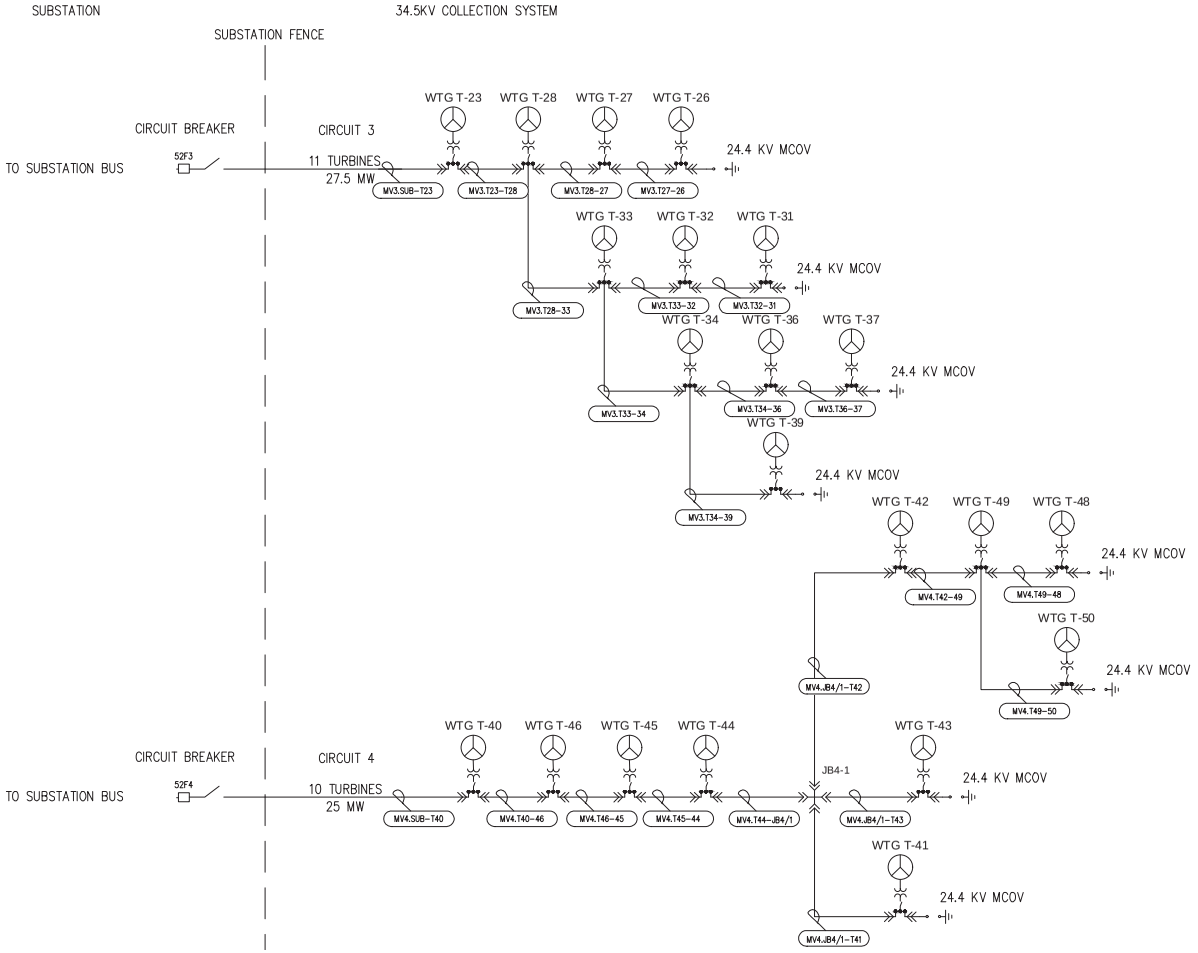
Paulding County, Ohio

MVAC Oneline Diagram Circuits 1 and 2

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Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.200

0007186_E200_ONELINES.dwg

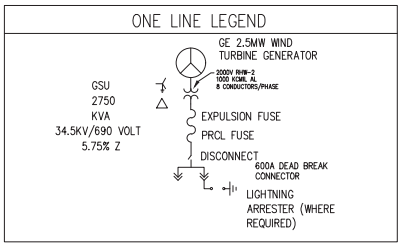
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GENERAL NOTES

1. SEE SUBSTATION DRAWING NWO-OLI-001 FOR SUBSTATION SINGLE LINE DRAWING.
2. ALL SURGE ARRESTERS 24.4KV MCOV.
3. SEE E.800 FOR MVAC WIRE SCHEDULE.

ONE LINE LEGEND



35 kV CABLE AND CONCENTRIC NEUTRAL SIZES

PHASE CONDUCTOR		CONCENTRIC NEUTRAL			
SIZE	MAT'L	DESIGNATION	MAT'L	WIRE SIZE	WIRE QTY
1/0 AWG	Al	2/3	Cu	14 AWG	11
4/0 AWG	Al	1/2	Cu	14 AWG	16
500 kCMIL	Al	1/3	Cu	14 AWG	16
750 kCMIL	Al	1/6	Cu	14 AWG	19
1000 kCMIL	Al	1/6	Cu	16 AWG	16
1250 kCMIL	Al	1/6	Cu	12 AWG	20

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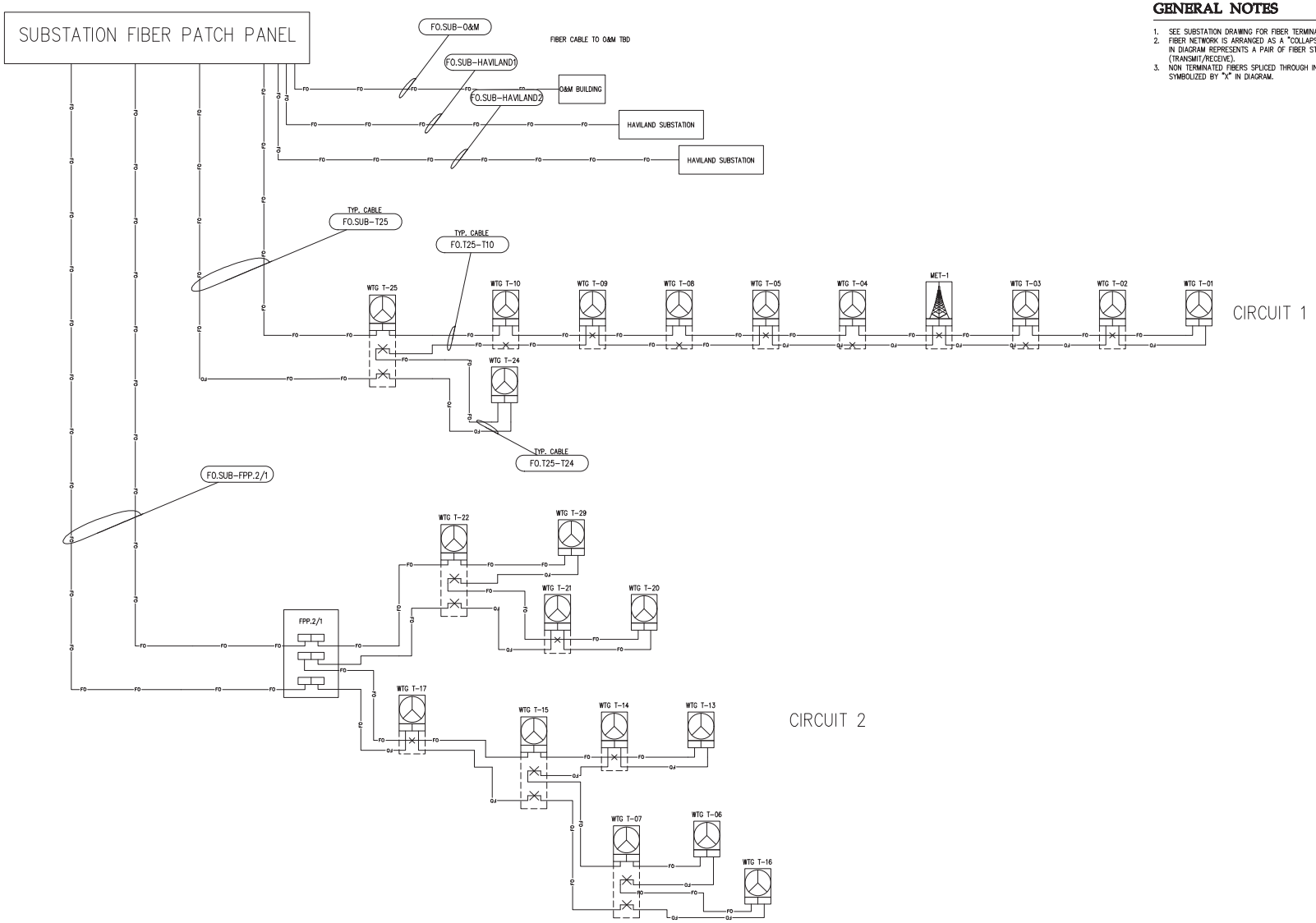
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MVAC Oneline Diagram
Circuits 3 and 4

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GENERAL NOTES

1. SEE SUBSTATION DRAWING FOR FIBER TERMINATION DIAGRAMS.
2. FIBER NETWORK IS ARRANGED AS A "COLLAPSED RING". EACH LINE IN DIAGRAM REPRESENTS A PAIR OF FIBER STRANDS (TRANSMIT/RECEIVE).
3. NON TERMINATED FIBERS SPLICED THROUGH IN EACH LOCATION, SYMBOLIZED BY "X" IN DIAGRAM.

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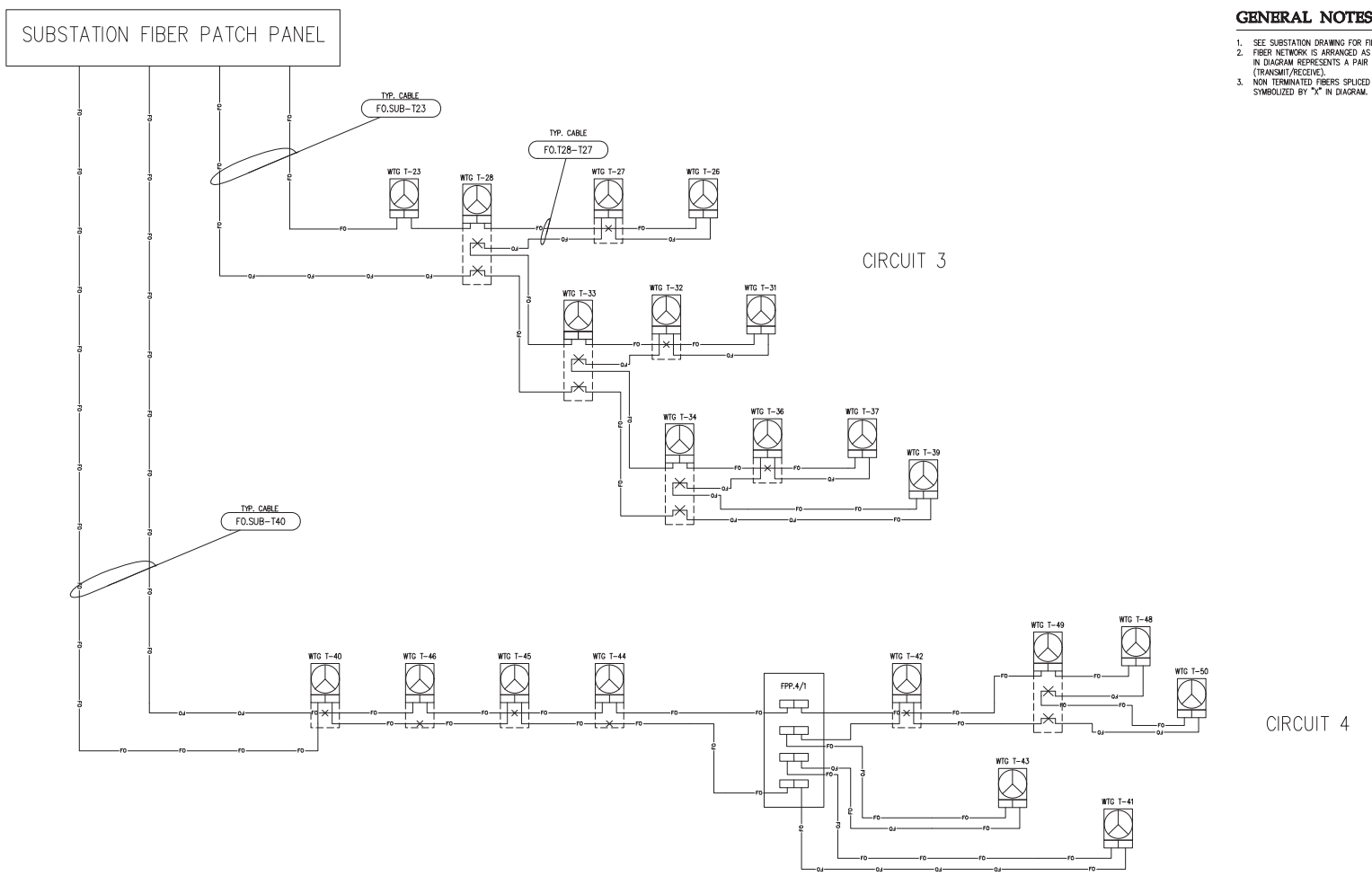
Paulding County, Ohio

Fiber Optic Oneline Diagram

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Date: 10/19/17
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GENERAL NOTES

1. SEE SUBSTATION DRAWING FOR FIBER TERMINATION DIAGRAMS.
2. FIBER NETWORK IS ARRANGED AS A "COLLAPSED RING". EACH LINE IN DIAGRAM REPRESENTS A PAIR OF FIBER STRANDS (TRANSMIT/RECEIVE).
3. NON TERMINATED FIBERS SPLICED THROUGH IN EACH LOCATION, SYMBOLIZED BY "X" IN DIAGRAM.

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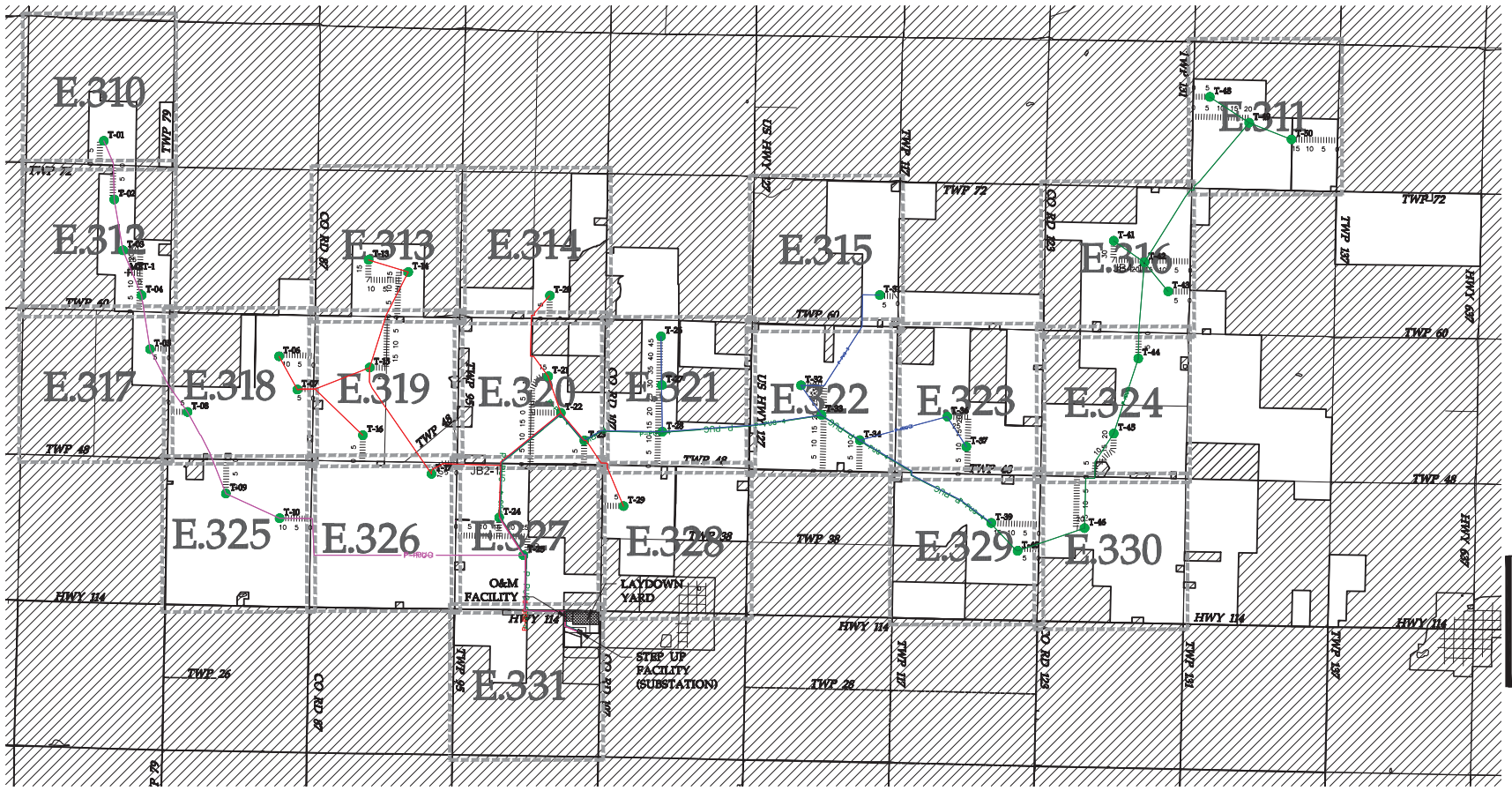
Paulding County, Ohio

Fiber Optic Oneline Diagram (2)

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0' 2000' 4000' 6000'

Northwest Ohio Wind Project

Paulding County, Ohio

Overall Electrical Site Plan

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Date: 10/19/17
Sheet: E.300

0007186_E300_Overall Electrical Site Plan.dwg

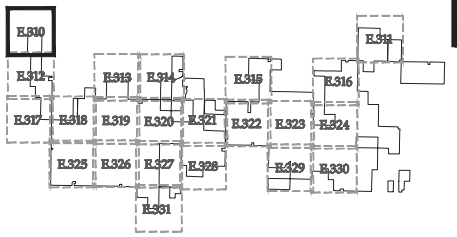
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SEE SHEET E.312

LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
- P-PUG-1 — PROPOSED CIRCUIT 1
- P-PUG-2 — PROPOSED CIRCUIT 2
- P-PUG-3 — PROPOSED CIRCUIT 3
- P-PUG-4 — PROPOSED CIRCUIT 4
- DELINEATED WETLAND
- NON–PARTICIPATING PROPERTY



KEY MAP

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0' 300' 600' 900'

Northwest Ohio Wind Project

Paulding County, Ohio

Electrical Site Plan

Not For Construction

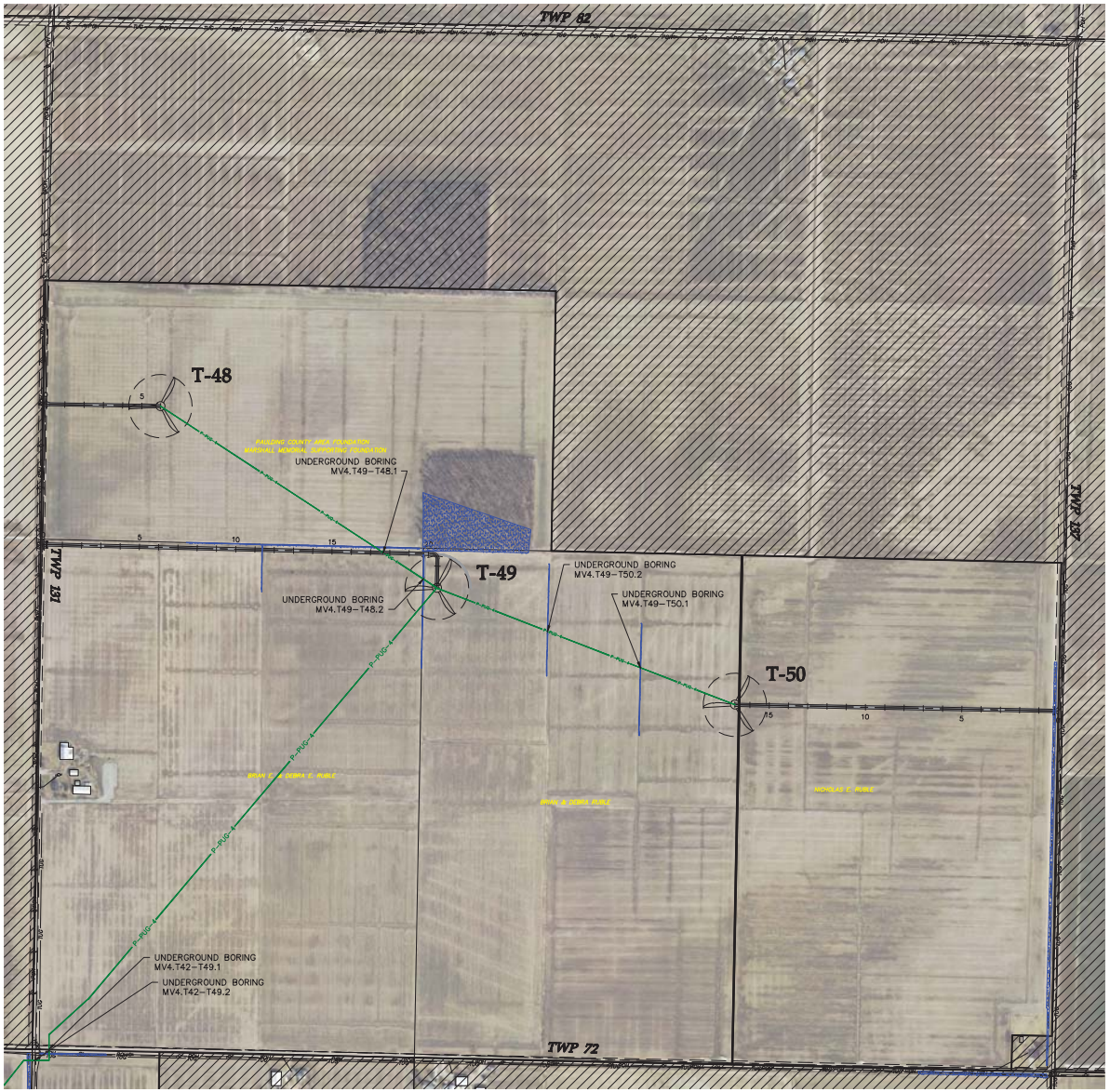
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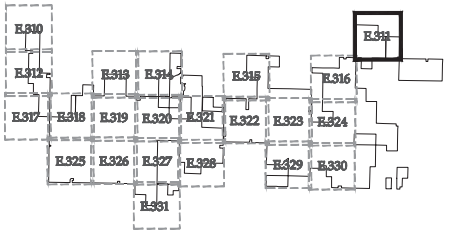
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SEE SHEET E.316

LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
- P–PUG–1 — PROPOSED CIRCUIT 1
- P–PUG–2 — PROPOSED CIRCUIT 2
- P–PUG–3 — PROPOSED CIRCUIT 3
- P–PUG–4 — PROPOSED CIRCUIT 4
- DELINEATED WETLAND
- NON–PARTICIPATING PROPERTY



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N

0' 300' 600' 900'

Northwest Ohio Wind Project

Paulding County, Ohio

Electrical Site Plan

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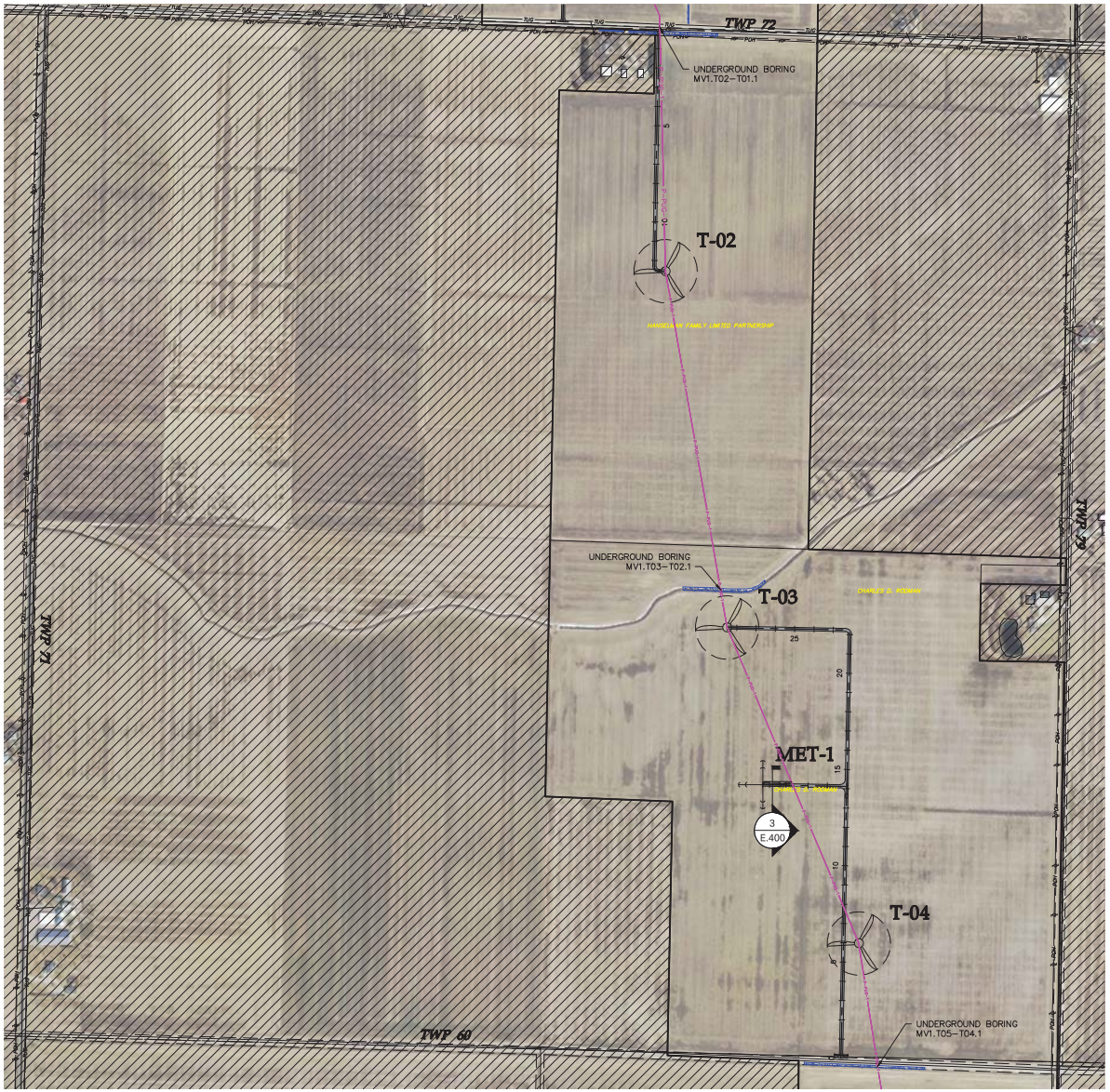
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SEE SHEET E.310



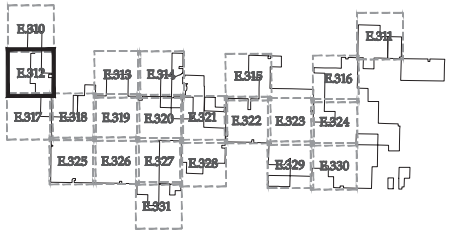
SEE SHEET E.317

LEGEND

	TURBINE LOCATION
T-XX	TURBINE NUMBER
P-PUG-1	PROPOSED CIRCUIT 1
P-PUG-2	PROPOSED CIRCUIT 2
P-PUG-3	PROPOSED CIRCUIT 3
P-PUG-4	PROPOSED CIRCUIT 4
	DELINEATED WETLAND
	NON–PARTICIPATING PROPERTY

GENERAL NOTES

1. LV POWER FOR MET–1 FED FROM WTG T–04. LV POWER CABLE INSTALLED IN COMMON MV TRENCH FROM T–04.
2. FIBER OPTIC CABLE BETWEEN T–03 AND T–04 RUNS THROUGH MET–1 PATCH PANEL (SEE E.210).



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Paulding County, Ohio

Electrical Site Plan

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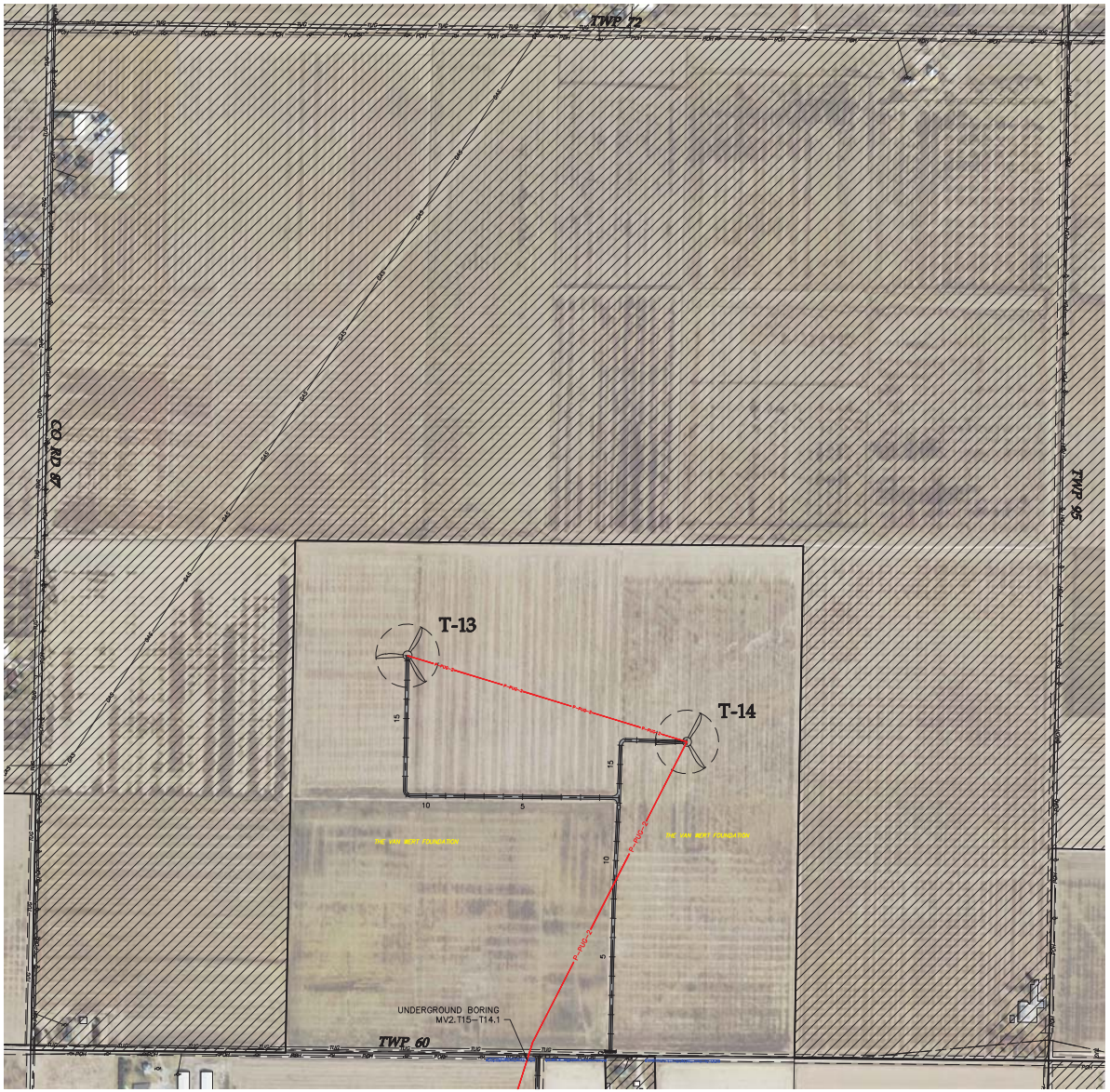
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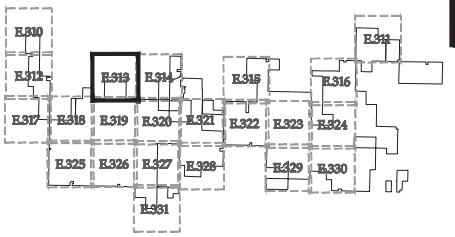


SEE SHEET E.319

SEE SHEET E.314

LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
- P-PUG-1 — PROPOSED CIRCUIT 1
- P-PUG-2 — PROPOSED CIRCUIT 2
- P-PUG-3 — PROPOSED CIRCUIT 3
- P-PUG-4 — PROPOSED CIRCUIT 4
- DELINEATED WETLAND
- NON–PARTICIPATING PROPERTY



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0' 300' 600' 900'

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Paulding County, Ohio

Electrical Site Plan

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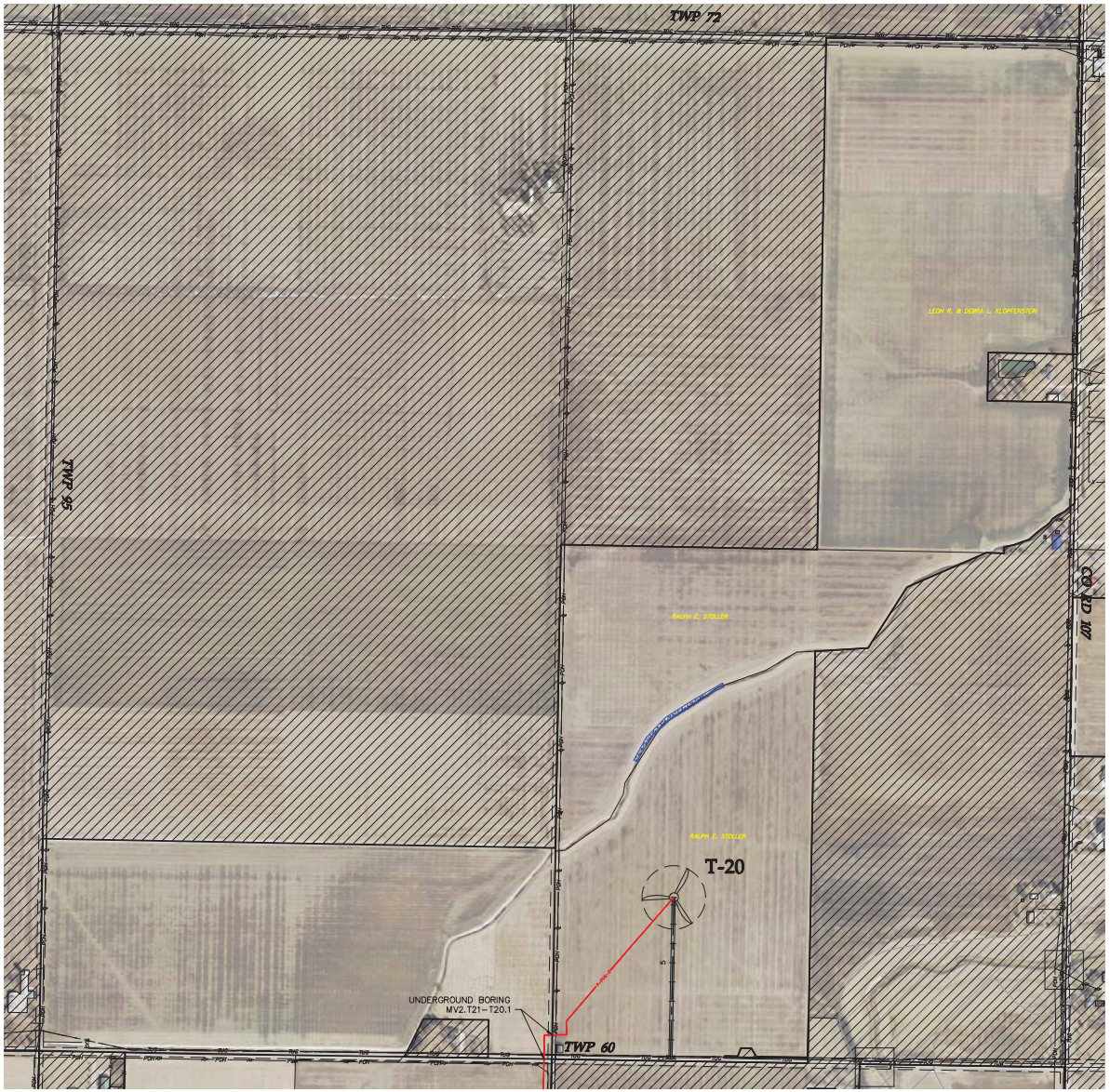
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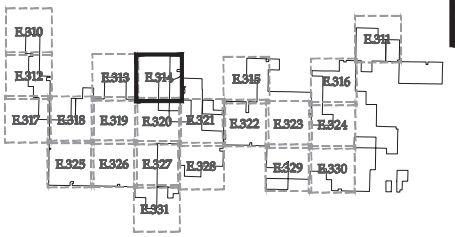
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LEGEND

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- T-XX — TURBINE NUMBER
- P-PUG-1 — PROPOSED CIRCUIT 1
- P-PUG-2 — PROPOSED CIRCUIT 2
- P-PUG-3 — PROPOSED CIRCUIT 3
- P-PUG-4 — PROPOSED CIRCUIT 4
- DELINEATED WETLAND
- NON–PARTICIPATING PROPERTY



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Paulding County, Ohio

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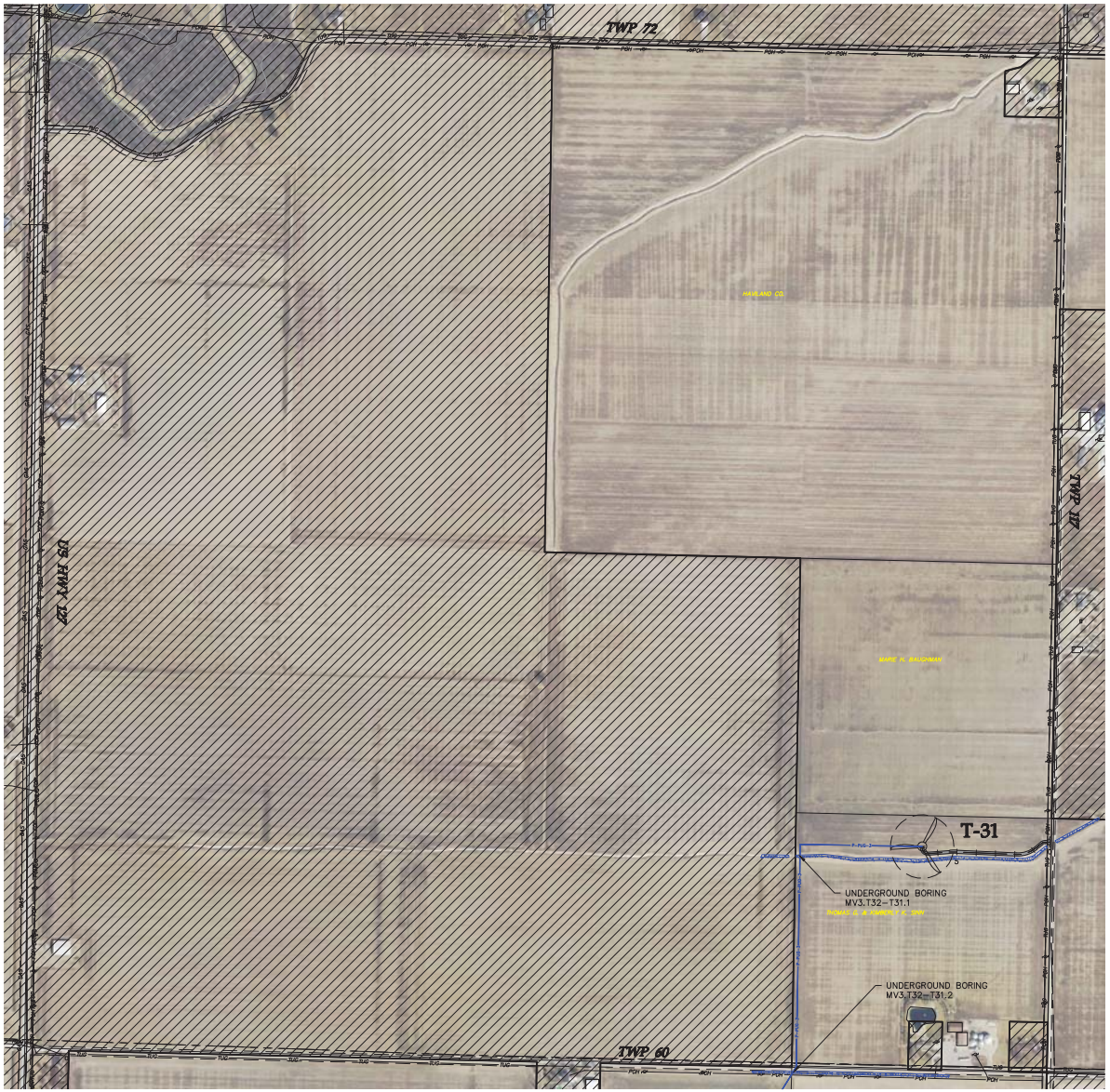
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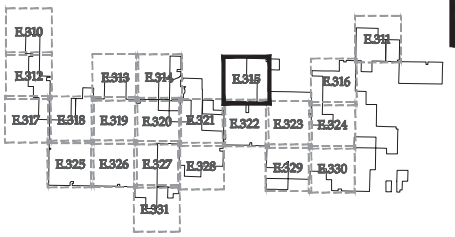
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SEE SHEET E.322

LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
- P-PUG-1 — PROPOSED CIRCUIT 1
- P-PUG-2 — PROPOSED CIRCUIT 2
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- P-PUG-4 — PROPOSED CIRCUIT 4
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- NON-PARTICIPATING PROPERTY



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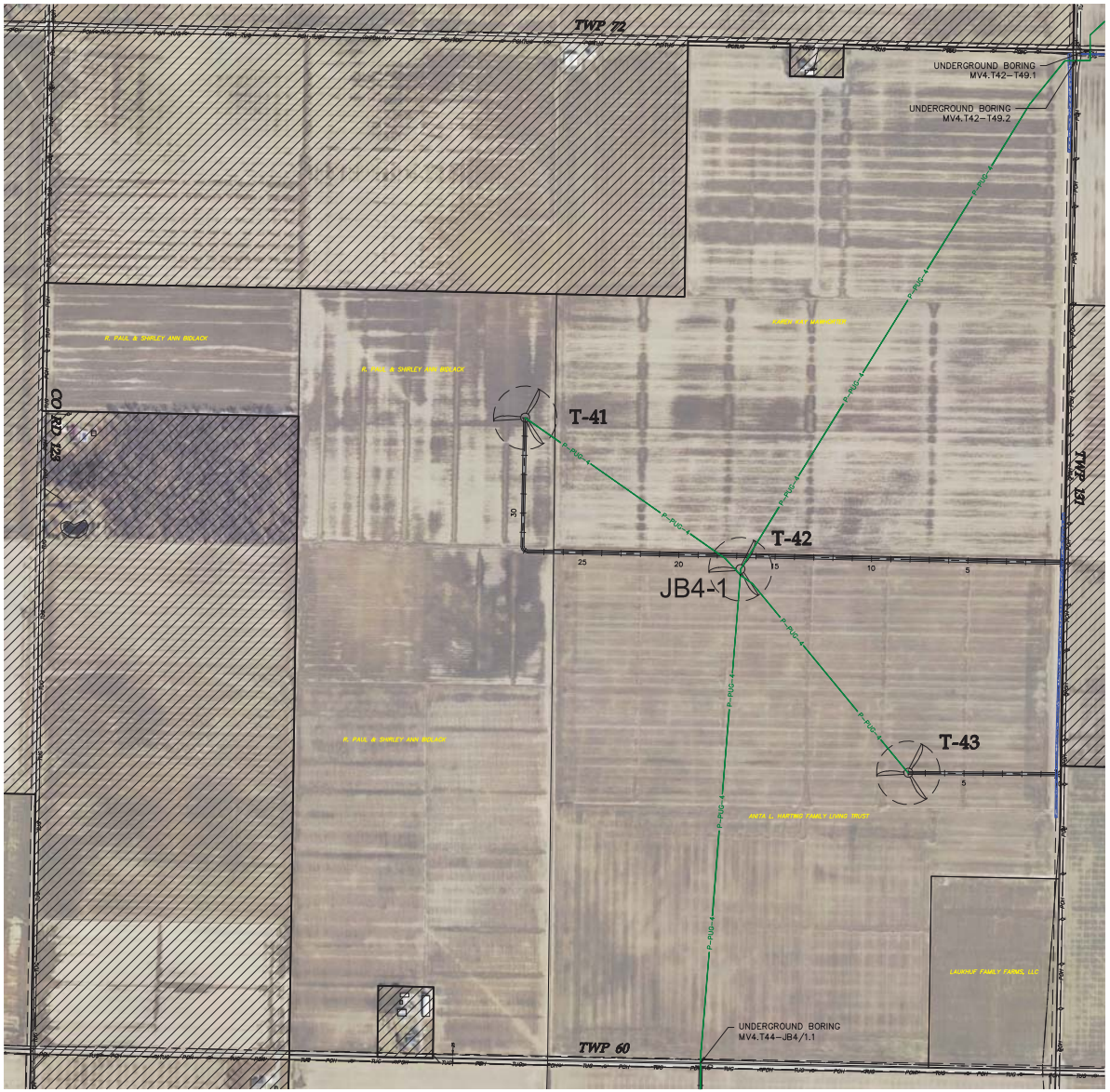
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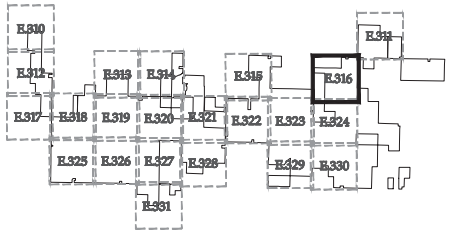
SEE SHEET E.324

LEGEND

	TURBINE LOCATION
T-XX	TURBINE NUMBER
P-PUG-1	PROPOSED CIRCUIT 1
P-PUG-2	PROPOSED CIRCUIT 2
P-PUG-3	PROPOSED CIRCUIT 3
P-PUG-4	PROPOSED CIRCUIT 4
	DELINEATED WETLAND
	NON–PARTICIPATING PROPERTY

GENERAL NOTES

1. EXACT POSITION OF JB4–1 IS TO BE DETERMINED.



KEY MAP

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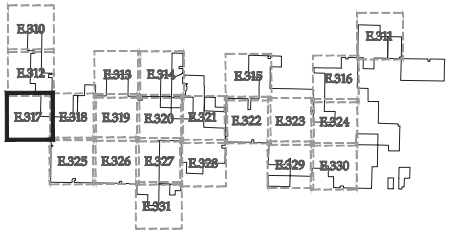
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- NON–PARTICIPATING PROPERTY



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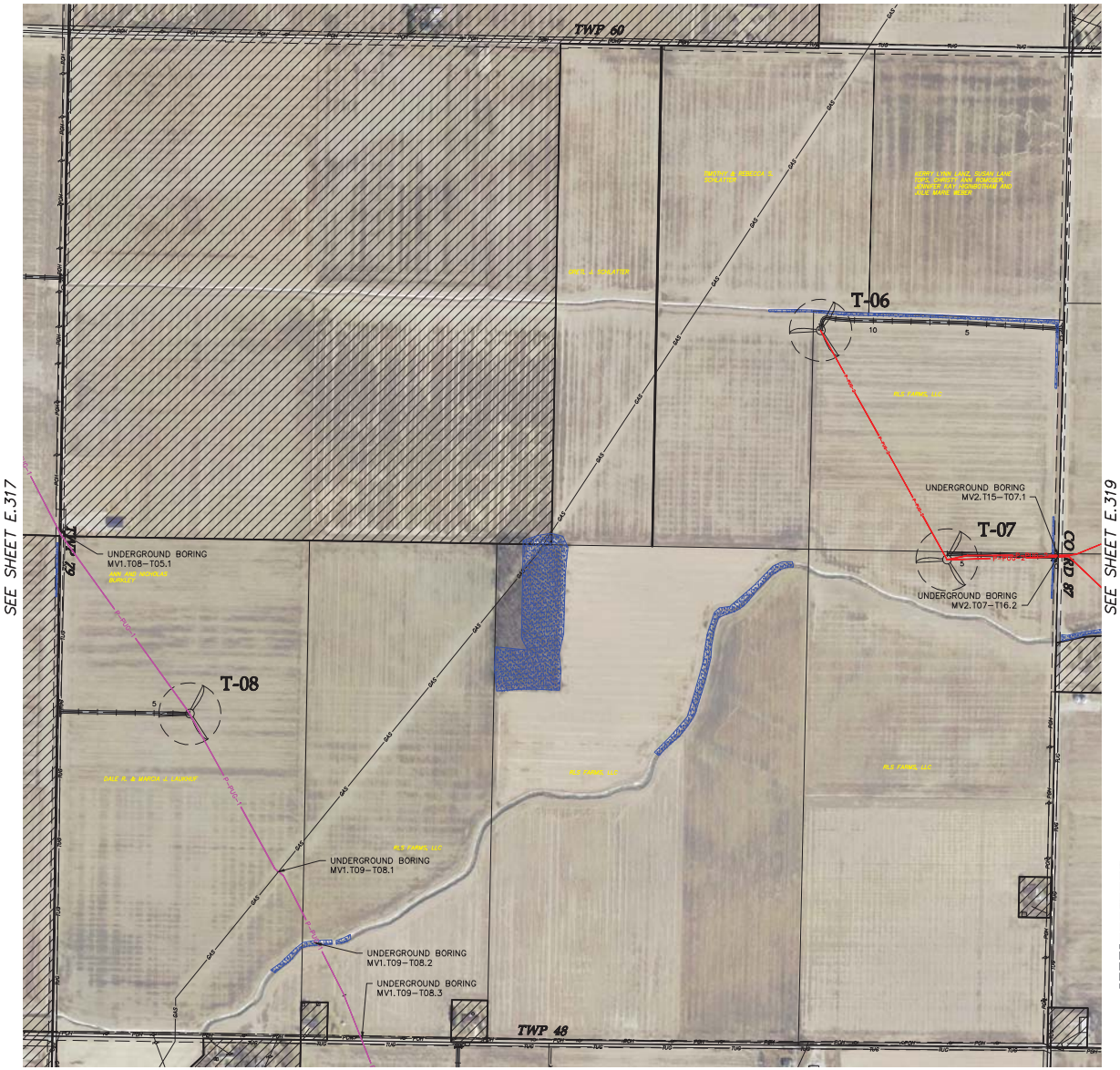
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Sheet: E.317

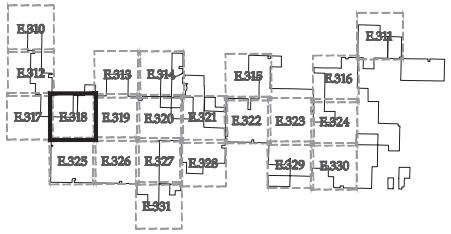
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LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
- P-PUG-1 — PROPOSED CIRCUIT 1
- P-PUG-2 — PROPOSED CIRCUIT 2
- P-PUG-3 — PROPOSED CIRCUIT 3
- P-PUG-4 — PROPOSED CIRCUIT 4
- DELINEATED WETLAND
- NON–PARTICIPATING PROPERTY



KEY MAP

Westwood

Phone (952) 937-5150 7699 Anagram Drive
Fax (952) 937-5822 Eden Prairie, MN 55344
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Designed:	KV
Checked:	ANS
Drawn:	BSC, JEG
As-Built Drawing:	

Revisions

#	DATE	DESCRIPTION
A	09/27/17	30% plans
B	10/03/17	Issued for Procurement – Revised
C	10/19/17	60% plans

Prepared for:

WHITE an @EA company

3900 E. White Ave
Clinton, IN 47842

Trishe Wind Ohio, LLC
c/o Starwood Energy Group, LLC
5 Greenwich Office Park, 2nd Floor
Greenwich, CT 06831

0' 300' 600' 900'

Northwest Ohio Wind Project

Paulding County, Ohio

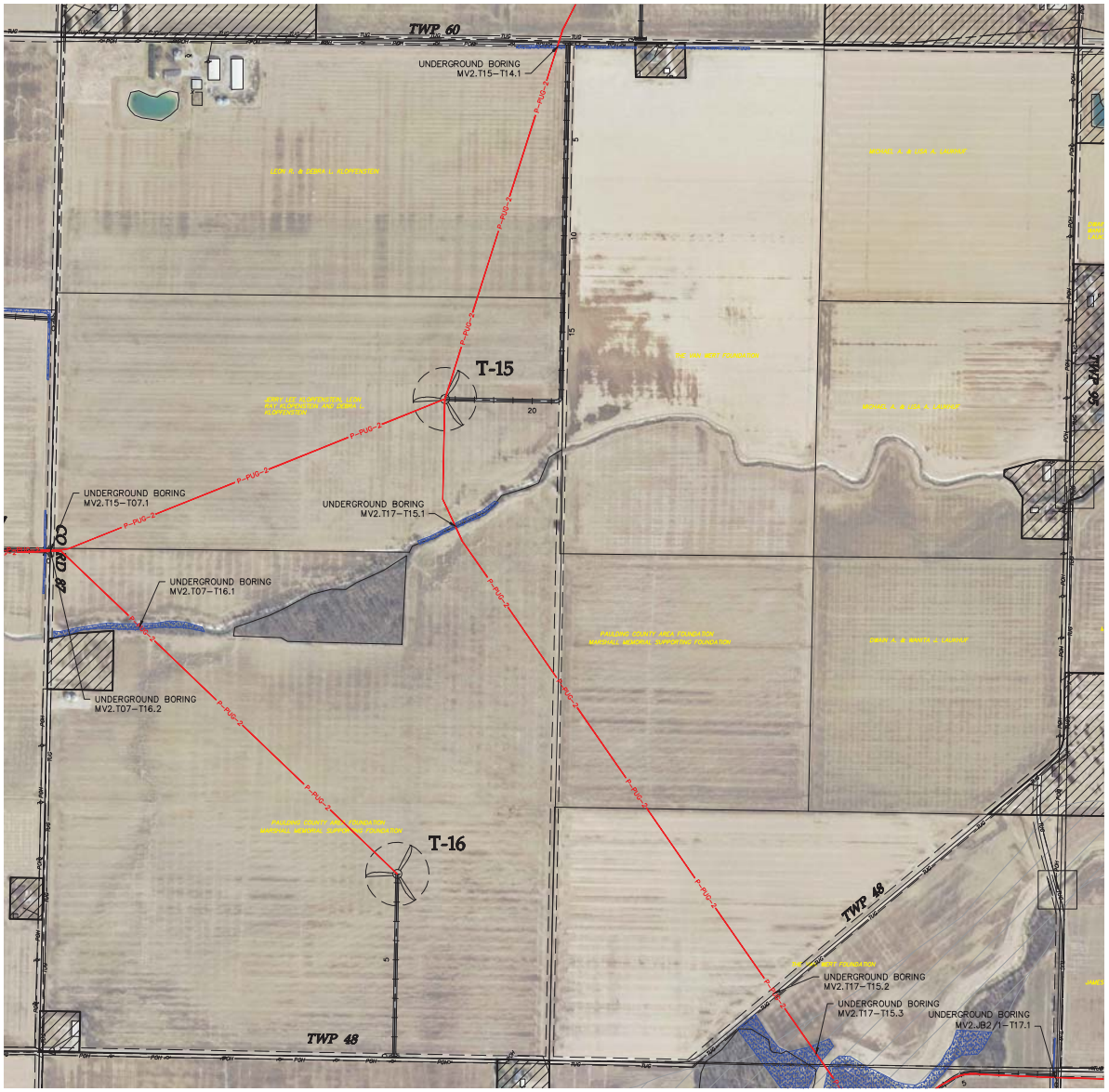
Electrical Site Plan

Not For Construction

Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.318

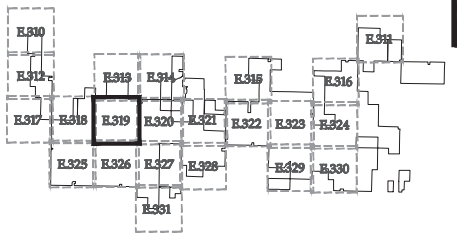
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Westwood Professional Services, Inc.

Designed:	KV
Checked:	AMS
Drawn:	BC, BG
As-Built Drawing:	

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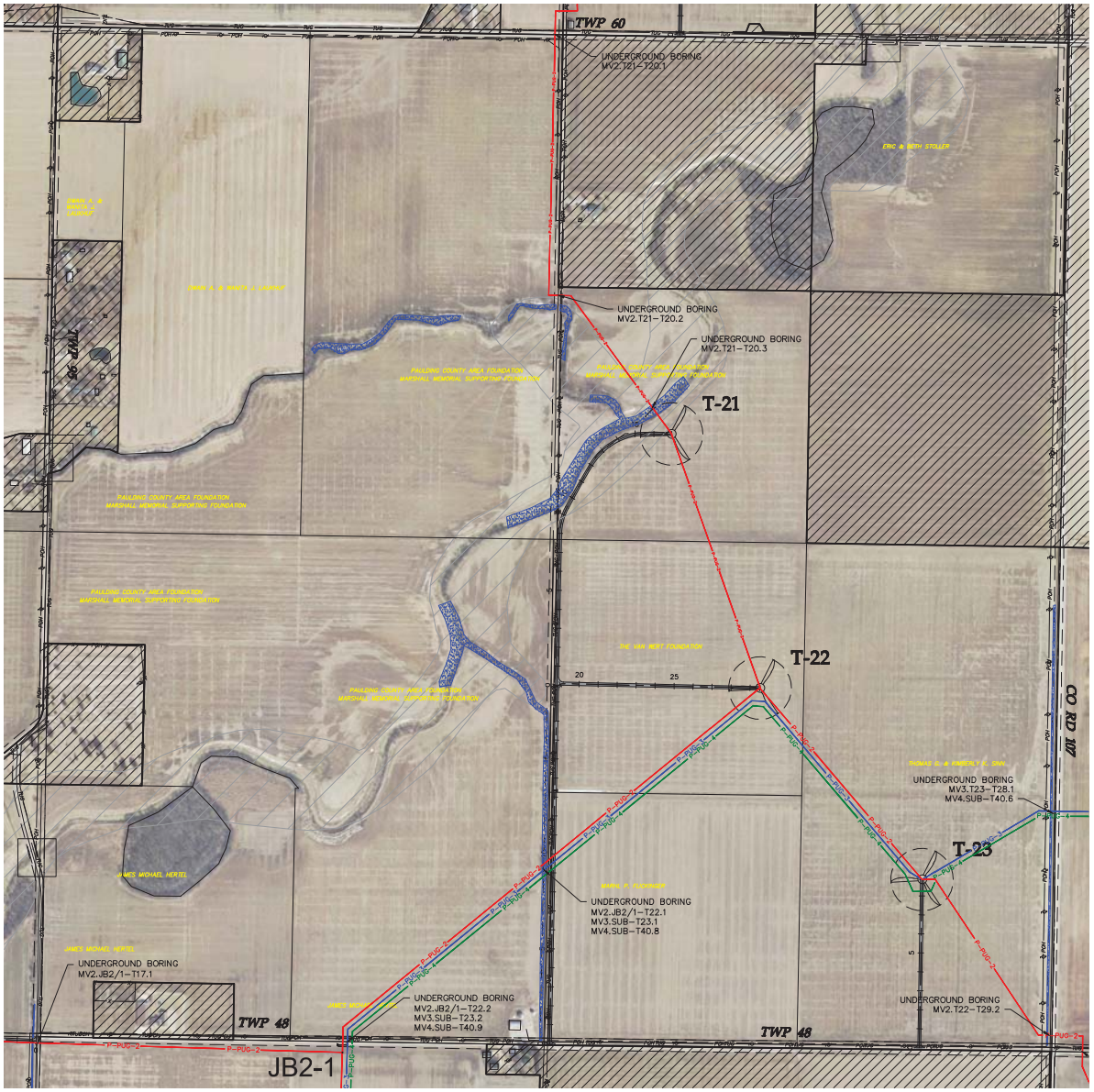
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Array Date: 09/14/2017
Date: 10/19/17
Sheet: E.319

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SEE SHEET E.314



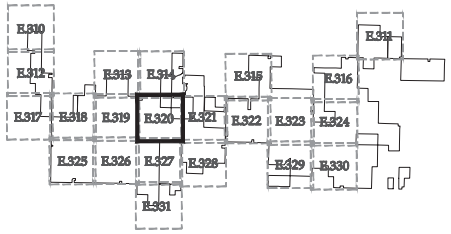
SEE SHEET E.319

SEE SHEET E.321

SEE SHEET E.327

LEGEND

- TURBINE LOCATION
- T-XX — TURBINE NUMBER
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Designed:	KV
Checked:	AMS
Drawn:	BMC, BG
As-Built Drawing:	

Revisions:

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an MEA company
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Northwest Ohio Wind Project

Paulding County, Ohio

Electrical Site Plan

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Array Date: 09/14/2017

Date: 10/19/17

Sheet: E.320

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This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/25/2017 2:52:28 PM

in

Case No(s). 13-0197-EL-BGN, 16-1687-EL-BGA, 17-1099-EL-BGA

Summary: Notice of Update to September 1, 2017 Filing Regarding Compliance with Condition 6 – Drawings for Final Design Plan (Part 1 of 5) electronically filed by Mr. William V Vorys on behalf of Trishe Wind Ohio, LLC