



SIMULATION OPTIMIZATION SYSTEMS
Research Laboratory

**FORMATTED DATA FILES FOR
TEST POWER SYSTEMS**

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FORMATTED DATA FILES FOR TEST POWER SYSTEMS

J.W. Bandler, M.A. El-Kady and J. Wojciechowski

Abstract

Formatted data files describing test power systems are presented in this document. These files have a standard form as is required by the TTM1 package and also by the LFNWT, CTTM1 and DECNCM packages for the power system simulation.

Data files for 3-bus, 6-bus, 23-bus, 26-bus and 118-bus power systems have been prepared for use on the CDC 170/730 system with the NOS 1.4 level 552 operating system. The contents of the data files are appended in this document. Associated software, i.e., subroutines for creating standard data files and data reading are also discussed.

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I. INTRODUCTION

The aim of this report is to present formatted data files describing various test power systems. The files discussed here have the form as is required by the TTM1 package [1,2]. The same standard of formatted input data is also used in other programs for the power system simulation [3-5].

In order to separate the input and/or output operations from the user's program, a special set of data handling routines has been prepared. FORTRAN subroutines FORMDTF and RDAT which are in the TTM1 package are designed to create a data file and to read input data. These subroutines, available in the form of a library, are linked with the user's programs by appropriate calling sequences. As a standard data file, we assume here a formatted file which is consistent with subroutine RDAT.

II. AVAILABLE DATA FILES

Standard data files describing the following test power systems have been created:

- 3-bus power system [1],
- 6-bus power system [6,7],
- 23-bus power system [7,8],
- 26-bus power system [7,9],
- 118-bus power system (unoptimized) [10],
- 118-bus power system (optimized) [11].

There exist two different data files for each of those systems; one with bus voltages consistent with a flat voltage profile and the other with bus voltages at the operating point.

It has been assumed that the data file name is an alphanumeric string containing 7 characters. The first character is "B" followed by a 3-digit number to identify the number of buses of the power system. The next two characters are "FV" or "SV" to distinguish the data file with bus voltages under the assumption of flat voltage profile and the data file with bus voltages at the operating point. The last character is to identify different data variations, e.g., "A" for an unoptimized system, "B" for the optimized system, etc.

The list of available standard data files is given in Table 1. The contents of all data files are listed in the Appendix.

III. DATA HANDLING ROUTINES

A set of subroutines to simplify data reading and creating a new data file has been prepared. These subroutines are in the TTM1 package. There are three data handling routines, namely

RDAT which reads data describing the power system from a standard formatted data file,

READDT which reads data describing the power system from an unformatted data file with data identified by descriptors [12,13],

FORMTDF which creates a standard data file after reading unformatted data using subroutine READDT or after processing standard data.

Full description of data handling routines with examples of how data can be read, printed and stored is found in [1].

TABLE 1
AVAILABLE DATA FILES FOR TEST POWER SYSTEMS

Number of buses of system	File name	Listing (from page)
3	B003FVA	11
	B003SVA	12
6	B006FVA	13
	B006SVA	14
23	B023FVA	15
	B023SVA	17
26	B026FVA	19
	B026SVA	21
118 (unoptimized)	B118FVA	23
	B118SVA	30
118 (optimized)	B118FVB	37
	B118SVB	44

IV. ACCESSING DATA FILES AND DATA HANDLING ROUTINES

The data files listed in Table 1 are available as permanent, indirect group files under the charge RJWBAND. Usually, a local data file required by the user's program has a different name. If this name is, for example, DATA then to run a program with 26-bus system data and bus voltages consistent with the flat voltage profile, the following NOS command can be used to fetch (and to rename) the data file:

```
/GET,DATA=B026FVA/GR.
```

Data handling routines are in the package TTM1. This package is available as a permanent indirect group file LIBTTM1 under the charge RJWBAND. It has the form of a library of binary relocatable subroutines. The general sequence of NOS commands to use the TTM1 package may be the following:

```
/GET,LIBTTM1/GR. - fetch the library,
```

```
/LIBRARY,LIBTTM1. - indicate the library to the loader.
```

V. DATA FILE STRUCTURE

The format of a data file is strictly fixed, as is required by subroutine RDAT. Logically, the data file constitutes three sections: data header, line data and bus data.

Data header contains five records and only the 3rd and 5th records are non-empty. The first non-empty record is the data identifier. The length of this record is limited to 120 alphanumeric characters including the carriage control character. In all data files described in this report, the first seven printed characters represent the internal data name, which is identical to the data file name. Characters following the internal data name are application dependent.

The next non-empty record following the data identifier contains on positions 7-9 and 20-23 two integer values: number of buses (NB) and the number of transmission lines (NTL) of the power system. Each of the values is preceded by the string "NB =" or "NTL =", respectively.

The section on line data consists of a line data header followed by a sequence of NTL records containing transmission line data.

The line data header accomodates five records and only the 3rd and 5th are non-empty and contain alphanumeric strings (the length of a string is limited to 120 characters). The first non-empty record is the data title, i.e., "LINE DATA". The next non-empty record contains the names of all physical data appearing in the transmission line data record. The names are the following:

LBINP line input bus index,
LBOUT line output bus index,
LINPG line input shunt conductance,
LINPB line input shunt susceptance,
LR line resistance,
LX line reactance,
LOUTG line output shunt conductance,
LOUTB line output shunt susceptance,
LTAP line transformer tap.

The structure of a record containing transmission line data is explained in Table 2.

The section on bus data contains a bus data header followed by a sequence of NB records containing bus data.

The bus data header accomodates five records and only the 3rd and 5th are non-empty and contain alphanumeric strings (the length of a string is limited to 120 characters). The first non-empty record is the data title, i.e., "BUS DATA".

The next non-empty record contains the names of all physical data appearing in the bus data record. The names are the following:

BNR bus index; it is usually assumed [1-5] that buses are numbered consecutively from 1 to NB and that the slack bus has the highest index,
 BTYPE bus type; the corresponding value is 0 for a load bus, 1 for a generator bus, and 2 for the slack bus,
 BVMOD bus voltage modulus,
 BVARG bus voltage argument (in radians),
 BGP bus generated active power,
 BLP bus consumed active power,
 BLQ bus reactive power,
 BSTL bus static load.

The structure of a record containing bus data is explained in Table 2.

TABLE 2
FORMAT OF RECORDS

Character position	Line data record	Bus data record	Data type
2 - 6	LBINP	BNR	Integer
8 - 12	LBOUT	BTYPE	Integer
17 - 29	LINPG	BVMOD	Real
32 - 44	LINPB	BVARG	Real
47 - 59	LR	BGP	Real
62 - 74	LX	BLP	Real
77 - 89	LOUTG	BLQ	Real
92 - 104	LOUTB	BSTL	Real
107 - 119	LTAP	—	Real

VI. REFERENCES

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- [13] D6, D23, D26, D118-test power systems data, Simulation Optimization Systems Research Laboratory, Faculty of Engineering, McMaster University, Hamilton, Canada, 1982.

APPENDIX
CONTENTS OF STANDARD DATA FILES

The contents of standard formatted data files for test power systems are listed in this section. The page number from which the listing of a specific file begins is found in Table 1.

It should be noted that in all data files with bus voltages at the operating point, the internal data name is followed by the accuracy of bus voltages (parameter EPS). As the accuracy of bus voltages we understand the assumed maximal value of the modulus of corrections of bus voltages which must be attained to terminate an iterative procedure for solving the load flow equations.

R003FVA.

NB = 003 , NTL = 003

LINE DATA

LBINP	LHOUT	LINPG	LINPB	LR	LX	LOUTG	LOUTB	LTAP
1	2	0.	0.	.500000E-01	.200000E+00	0.	0.	.1000000E+01
1	3	0.	0.	.250000E-01	.100000E+00	0.	0.	.1000000E+01
2	3	0.	0.	.100000E+00	.250000E+00	0.	0.	.1000000E+01

BUS DATA

BNR	BTYP	BVMOD	BVARG	BGP	BLP	BLQ	BSNL
1	0	.100000E+01	0.	0.	.2400000E+01	.4000000E+00	0.
2	1	.102000E+01	0.	.1300000E+01	0.	0.	0.
3	2	.104000E+01	0.	0.	0.	0.	0.

B003SVA EPS = 1.E-6
NB = 003, NTL = 003

LINE DATA

LBINP	LBOUT	LINPG	LINPB	LR	LX	LOUTG	LOUTB	LTAPE
1	2	0.	0.	.5000000E-01	.2000000E+00	0.	0.	.1000000E+01
1	3	0.	0.	.2500000E-01	.1000000E+00	0.	0.	.1000000E+01
2	3	0.	0.	.1000000E+00	.2500000E+00	0.	0.	.1000000E+01

BUS DATA

BNR	BTYPE	BVMOD	BVARG	BGP	BLP	BLQ	BSNL
1	0	.9497974E+00	-.1321594E+00	0.	.24000000E+01	.40000000E+00	0.
2	1	.1020000E+01	.7542825E-01	.13000000E+01	0.	0.	0.
3	2	.1040000E+01	0.	0.	0.	0.	0.

B666FVA
NB = 006, NTL = 008

LINE DATA

	LBINP	LBOUT	LINPG	LINPB	LX	LOUTG	LTAP
1	4	0.	0.	0.	.5000000E-01	.2000000E+00	.1000000E+01
1	5	0.	0.	0.	.2500000E-01	.1000000E+00	.1000000E+01
2	3	0.	0.	0.	.1000000E+00	.4000000E+00	.1000000E+01
2	4	0.	0.	0.	.4000000E+00	.4000000E+00	.1000000E+01
2	5	0.	0.	0.	.5000000E-01	.2000000E+00	.1000000E+01
2	6	0.	0.	0.	.1875000E-01	.7500000E-01	.1000000E+01
3	4	0.	0.	0.	.1500000E+00	.6000000E+00	.1000000E+01
3	6	0.	0.	0.	.3750000E-01	.1500000E+00	.1000000E+01

BUS DATA

BNR	BTYPE	BVMOD	BVARG	BGP	BLP	BLQ	BSTL
1	0	.1000000E+01	0.	0.	.2400000E+01	0.	0.
2	0	.1000000E+01	0.	0.	.2400000E+01	0.	0.
3	0	.1000000E+01	0.	0.	.1600000E+01	.4000000E+00	0.
4	1	.1020000E+01	0.	- .3000000E+00	0.	0.	0.
5	1	.1040000E+01	0.	.1250000E+01	0.	0.	0.
6	2	.1040000E+01	0.	0.			

B006SVA

NB = 006 , NTL = 008

LINE DATA

LBINP	LBOUT	LIMP	LNFB	LX	LOUTG	LOUTB	LTAP
1	4	0.	0.	.5000000E-01	.2000000E+00	0.	.1000000E+01
1	5	0.	0.	.2500000E-01	.1000000E+00	0.	.1000000E+01
2	3	0.	0.	.1000000E+00	.4000000E+00	0.	.1000000E+01
2	4	0.	0.	.1000000E+00	.4000000E+00	0.	.1000000E+01
2	5	0.	0.	.5000000E-01	.2000000E+00	0.	.1000000E+01
2	6	0.	0.	.1875000E-01	.7500000E-01	0.	.1000000E+01
3	4	0.	0.	.1500000E+00	.6000000E+00	0.	.1000000E+01
3	6	0.	0.	.3750000E-01	.1500000E+00	0.	.1000000E+01

BUS DATA

BNR	BTYPE	BVMOD	BVARG	BGP	BLQ	BSTL
1	0	.9786592E+00	-.6601992E+00	0.	0.	0.
2	0	.9632523E+00	-.2978056E+00	0.	0.	0.
3	0	.9031892E+00	-.3035574E+00	0.	0.	0.
4	1	.1020000E+01	-.5565773E+00	-.3000000E+00	0.	0.
5	1	.1040000E+01	-.4740483E+00	.1250000E+01	0.	0.
6	2	.1040000E+01	0.	0.	0.	0.

B023FVA
NB = 023, NTL = 030

LINE DATA

	LBINP	LBOUT	LINPG	LINPB	LX	LOUTG	LTAP	LOUTB	BLQ	BLP	BSHL
23	1	0.	0.	.2420000E-01	.5400000E-01	0.	.5900000E+01	.5900000E-02	0.	.4700000E+00	.1200000E+00
23	2	0.	0.	.3090000E-01	.6930000E-01	0.	.7550000E-02	.7550000E-02	0.	.5100000E+00	.1300000E+00
18	3	0.	0.	.4040000E-01	.8880000E-01	0.	.9850000E-02	.9850000E-02	0.	.4100000E+00	.1000000E+00
6	3	0.	0.	.7850000E-02	.3250000E-01	0.	.7850000E-02	.7850000E-02	0.	.4800000E+00	.1100000E+00
18	5	0.	0.	.1710000E-01	.6150000E+00	0.	.1710000E-01	.1620000E+00	0.	.5000000E+00	.1000000E+00
1	4	0.	0.	.1600000E-01	.5760000E+00	0.	.1600000E-01	.1520000E+00	0.	.4900000E+00	.1000000E+00
2	7	0.	0.	.7400000E-02	.2660000E-01	0.	.7400000E-02	.7000000E-01	0.	.7400000E-02	.1000000E+00
7	5	0.	0.	.5600000E-02	.2290000E-01	0.	.5600000E-02	.5040000E-01	0.	.5600000E-02	.1000000E+00
6	4	0.	0.	.1090000E-01	.4460000E-01	0.	.1090000E-01	.1043000E+00	0.	.1090000E-01	.1000000E+00
19	8	0.	0.	.2280000E-01	.2330000E-01	0.	.2280000E-01	.5140000E-01	0.	.2280000E-01	.1000000E+00
6	6	0.	0.	.1455000E-01	.5970000E-01	0.	.1455000E-01	.1315000E+00	0.	.1455000E-01	.1000000E+00
7	8	0.	0.	.1455000E-01	.5970000E+00	0.	.1455000E-01	.1315000E+00	0.	.1455000E-01	.1000000E+00
10	7	0.	0.	.1186500E+00	.4300000E-02	0.	.3510000E-01	.3510000E-01	0.	.1186500E+00	.1000000E+00
20	9	0.	0.	.1186500E+00	.4300000E-02	0.	.3510000E-01	.3510000E-01	0.	.1186500E+00	.1000000E+00
11	9	0.	0.	.1039000E+00	.3800000E-02	0.	.3070000E-01	.3070000E-01	0.	.1039000E+00	.1000000E+00
14	11	0.	0.	.9755000E-01	.3500000E-02	0.	.2830000E-01	.2830000E-01	0.	.9755000E-01	.1000000E+00
22	10	0.	0.	.2435500E+00	.8900000E-02	0.	.7260000E-01	.7260000E-01	0.	.2435500E+00	.1000000E+00
12	13	0.	0.	.2715000E-01	.1000000E-02	0.	.8000000E-02	.8000000E-02	0.	.2715000E-01	.1000000E+00
13	14	0.	0.	.5665000E-01	.2100000E-02	0.	.1670000E-01	.1670000E-01	0.	.5665000E-01	.1000000E+00
15	14	0.	0.	.4310000E-01	.1600000E-02	0.	.1270000E-01	.1270000E-01	0.	.4310000E-01	.1000000E+00
21	15	0.	0.	.1225500E+00	.4500000E-02	0.	.3620000E-01	.3620000E-01	0.	.1225500E+00	.1000000E+00
17	14	0.	0.	.6490000E-01	.2400000E-02	0.	.1920000E-01	.1920000E-01	0.	.6490000E-01	.1000000E+00
21	16	0.	0.	.5230000E-01	.1900000E-02	0.	.1560000E-01	.1560000E-01	0.	.5230000E-01	.1000000E+00
16	17	0.	0.	.3850000E-01	.1400000E-02	0.	.1140000E-01	.1140000E-01	0.	.3850000E-01	.1000000E+00
22	12	0.	0.	.5545500E-01	.2000000E-02	0.	.1640000E-01	.1640000E-01	0.	.5545500E-01	.1000000E+00
9	6	0.	0.	.2300000E-02	.8390000E-01	0.	.8390000E-01	.8390000E-01	0.	.1400000E+01	.1000000E+00
10	6	0.	0.	.2300000E-02	.8390000E-01	0.	.1900000E-02	.1300000E+00	0.	.1900000E+01	.1000000E+00
9	7	0.	0.	.2300000E-02	.8390000E-01	0.	.2300000E-02	.8390000E-01	0.	.1900000E+01	.1000000E+00
10	7	0.	0.	.2500000E-02	.2000000E+00	0.	.2500000E-02	.2000000E+00	0.	.1000000E+01	.1000000E+00
23	16	0.	0.								

HUS DATA

BNR	BTYP	BVMOD	BVARG	BGP	BLP	BLQ	BSHL
1	0	1000000E+01	0.	0.	.4700000E+00	0.	.1200000E+00
2	0	1000000E+01	0.	0.	.5100000E+00	0.	.1300000E+00
3	0	1000000E+01	0.	0.	.4100000E+00	0.	.1000000E+00
4	0	1000000E+01	0.	0.	.4800000E+00	0.	.1200000E+00
5	0	1000000E+01	0.	0.			

B023SVA (EPS = 1.E-6)
NB = 023, NTL = 030

LINE DATA

LBINP	LBOUT	LINPG	LINPB	LR	LX	LOUTG	LOUTB	LTAP
23	1	0.	.5900000E-02	.2420000E-01	.5400000E-01	.5900000E-02	.1000000E+01	
23	2	0.	.7550000E-02	.3090000E-01	.6930000E-01	.7550000E-02	.1000000E+01	
18	3	0.	.9850000E-02	.4040000E-01	.8830000E-01	.9850000E-02	.1000000E+01	
6	3	0.	.7850000E-02	.3250000E-01	.7020000E-01	.7850000E-02	.1000000E+01	
18	5	0.	.1710000E-01	.6150000E-01	.1620000E+00	.1710000E-01	.1000000E+01	
1	4	0.	.1600000E-01	.5760000E-01	.1520000E+00	.1600000E-01	.1000000E+01	
2	7	0.	.7400000E-02	.2660000E-01	.7000000E-01	.7400000E-02	.1000000E+01	
7	5	0.	.5600000E-02	.2290000E-01	.6040000E-01	.5600000E-02	.1000000E+01	
6	4	0.	.1690000E-01	.4460000E-01	.1003000E+00	.1690000E-01	.1000000E+01	
19	8	0.	.2280000E-01	.2330000E-01	.5140000E-01	.2280000E-01	.1000000E+01	
6	3	0.	.1455000E-01	.5970000E-01	.1315000E+00	.1455000E-01	.1000000E+01	
7	8	0.	.1455000E-01	.5970000E-01	.1315000E+00	.1455000E-01	.1000000E+01	
10	20	0.	.1186500E+00	.4300000E-02	.3510000E-01	.1186500E+00	.1000000E+01	
20	9	0.	.1186500E+00	.4300000E-02	.3510000E-01	.1186500E+00	.1000000E+01	
11	9	0.	.1039000E+00	.3800000E-02	.3070000E-01	.1039000E+00	.1000000E+01	
14	11	0.	.9755000E-01	.3500000E-02	.2830000E-01	.9755000E-01	.1000000E+01	
22	19	0.	.2435500E+00	.8900000E-02	.7260000E-01	.2435500E+00	.1000000E+01	
12	13	0.	.2715000E-01	.1000000E-02	.8000000E-02	.2715000E-01	.1000000E+01	
13	14	0.	.5665000E-01	.2100000E-02	.1670000E-01	.5665000E-01	.1000000E+01	
15	14	0.	.4310000E-01	.1600000E-02	.1270000E-01	.4310000E-01	.1000000E+01	
21	15	0.	.1225500E+00	.4500000E-02	.3620000E-01	.1225500E+00	.1000000E+01	
17	14	0.	.6490000E-01	.2400000E-02	.1920000E-01	.6490000E-01	.1000000E+01	
21	16	0.	.5280000E-01	.1900000E-02	.1560000E-01	.5280000E-01	.1000000E+01	
16	17	0.	.3850000E-01	.1400000E-02	.1140000E-01	.3850000E-01	.1000000E+01	
22	12	0.	.5545000E-01	.2000000E-02	.1640000E-01	.5545000E-01	.1000000E+01	
9	6	0.	0.	.2300000E-02	.8390000E-01	0.	.1030000E+01	
10	6	0.	0.	.2300000E-02	.8390000E-01	0.	.1050000E+01	
9	7	0.	0.	.1900000E-02	.1300000E+00	0.	.1060000E+01	
10	7	0.	0.	.2300000E-02	.8390000E-01	0.	.1060000E+01	
23	18	0.	0.	.2500000E-02	.2000000E+00	0.	.1000000E+01	

BUS DATA

BNR	BTYPE	BVMOD	BVARG	BGP	BLP	BLQ	BSRL
1	0	.1031574E+01	.1739643E-01	0.	.4700000E+00	.1200000E+00	0.
2	0	.1006234E+01	.2612171E-01	0.	.5100000E+00	.1300000E+00	0.
3	0	.1007671E+01	.8534361E-01	0.	.4100000E+00	.1000000E+00	0.
4	0	.1003757E+01	.6679976E-01	0.	.4800000E+00	-.1200000E+00	0.
5	0	.9989981E+00	.5472221E-01	0.			

B026FVA
NB = 026,
NTL = 032

LINE DATA

LHINP	LBOUT	LINPG	LINPB	LR	LX	LOUTG	LOUTB	LTAP
13	26	0.	0.	0.	.1310000E-01	0.	0.	.1030000E+01
26	16	0.	0.	0.	.3920000E-01	0.	0.	.9600000E+00
16	23	0.	0.	0.	.4320000E+00	0.	0.	.1000000E+01
23	26	0.	0.	0.	.3140000E+00	0.	0.	.1000000E+01
2	10	0.	0.	0.	.1500000E-01	0.	0.	.1030000E+01
9	19	0.	0.	0.	.4120000E+00	0.	0.	.4120000E+00
9	12	0.	0.	0.	.6580000E-01	0.	0.	.1000000E+01
12	26	0.	0.	0.	.1470000E-01	0.	0.	.1820000E-01
9	14	0.	0.	0.	.5330000E-01	0.	0.	.1470000E-01
11	14	0.	0.	0.	.6180000E-01	0.	0.	.3190000E-01
19	26	0.	0.	0.	.3490000E-01	0.	0.	.3490000E-01
6	26	0.	0.	0.	.6760000E-01	0.	0.	.1000000E+01
6	26	0.	0.	0.	.2950000E-01	0.	0.	.2950000E-01
11	22	0.	0.	0.	.6100000E-01	0.	0.	.1000000E+01
3	11	0.	0.	0.	.2650000E-01	0.	0.	.2650000E-01
6	19	0.	0.	0.	.5130000E-01	0.	0.	.1000000E+01
6	19	0.	0.	0.	.7400000E-02	0.	0.	.7400000E-02
7	19	0.	0.	0.	.4370000E-01	0.	0.	.4370000E-01
6	7	0.	0.	0.	.4750000E-01	0.	0.	.4750000E-01
11	22	0.	0.	0.	.2480000E-01	0.	0.	.2480000E-01
3	11	0.	0.	0.	.4470000E-01	0.	0.	.4470000E-01
17	22	0.	0.	0.	.2370000E-01	0.	0.	.2370000E-01
8	21	0.	0.	0.	.3790000E-01	0.	0.	.3790000E-01
17	21	0.	0.	0.	.3870000E-01	0.	0.	.3870000E-01
1	4	0.	0.	0.	.3190000E-01	0.	0.	.3190000E-01
4	21	0.	0.	0.	.3150000E-01	0.	0.	.3150000E-01
20	21	0.	0.	0.	.0.	0.	0.	.0.
15	1	0.	0.	0.	.3017000E+00	0.	0.	.8900000E+00
2	13	0.	0.	0.	.8600000E-02	0.	0.	.1000000E+01
1	7	0.	0.	0.	.4040000E-01	0.	0.	.4040000E-01
15	20	0.	0.	0.	.4471000E+00	0.	0.	.4471000E+00
2	18	0.	0.	0.	.2593000E+00	0.	0.	.2593000E+00
1	3	0.	0.	0.	.0.	0.	0.	.0.
24	3	0.	0.	0.	.0.	0.	0.	.9800000E+00
5	21	0.	0.	0.	.0.	0.	0.	.9900000E+00
5	5	0.	0.	0.	.0.	0.	0.	.1030000E+01

BUS DATA

BNR	BTTYPE	BVMOD	BVARG	BGP	BLQ	BLP	BSLT
1	0	.1000000E+01	0.	0.	.8200000E+00	0.	0.
2	0	.1000000E+01	0.	0.	.5700000E+00	0.	0.
3	0	.1000000E+01	0.	0.	.1700000E+00	0.	0.

B026SVA

NB = 026, NTL = 032

LINE DATA

	LBINP	LBOUT	LINPG	LINPB	LR	LX	LOUTG	LOUTB	LTAP
13	2	0.	0.	0.	0.	.1310000E-01	0.	0.	.1030000E+01
26	16	0.	0.	0.	0.	.3920000E-01	0.	0.	.9600000E+00
1	23	0.	0.	0.	0.	.4320000E+00	0.	0.	.1000000E+01
2	26	0.	0.	0.	0.	.3140000E+00	0.	0.	.1000000E+01
9	10	0.	0.	0.	0.	.1500000E-01	0.	0.	.1030000E+01
9	12	0.	0.	0.	0.	.1494000E+00	0.	0.	.4120000E+00
12	26	0.	0.	0.	0.	.3392000E+00	0.	0.	.1820000E-01
9	14	0.	0.	0.	0.	.1210000E+00	0.	0.	.1470000E-01
9	14	0.	0.	0.	0.	.1494000E+00	0.	0.	.1900000E+01
11	14	0.	0.	0.	0.	.2397000E+00	0.	0.	.3190000E-01
11	26	0.	0.	0.	0.	.2620000E+00	0.	0.	.3490000E-01
19	26	0.	0.	0.	0.	.2521000E+00	0.	0.	.2950000E-01
6	26	0.	0.	0.	0.	.1986000E+00	0.	0.	.2650000E-01
6	19	0.	0.	0.	0.	.5320000E-01	0.	0.	.1000000E+01
7	19	0.	0.	0.	0.	.3742000E+00	0.	0.	.1000000E+01
6	7	0.	0.	0.	0.	.3569000E+00	0.	0.	.4370000E-01
11	22	0.	0.	0.	0.	.2118000E+00	0.	0.	.4750000E-01
8	11	0.	0.	0.	0.	.3355000E+00	0.	0.	.2480000E-01
17	22	0.	0.	0.	0.	.1869000E+00	0.	0.	.4470000E-01
8	21	0.	0.	0.	0.	.2847000E+00	0.	0.	.2370000E-01
17	21	0.	0.	0.	0.	.3035500E+00	0.	0.	.3790000E-01
1	4	0.	0.	0.	0.	.2401000E+00	0.	0.	.3870000E-01
4	21	0.	0.	0.	0.	.2365000E+00	0.	0.	.3190000E-01
20	21	0.	0.	0.	0.	.3050000E-01	0.	0.	.3150000E-01
15	1	0.	0.	0.	0.	.1470000E-01	0.	0.	.9700000E+00
2	13	0.	0.	0.	0.	.7070000E-01	0.	0.	.8900000E+00
1	7	0.	0.	0.	0.	.7850000E-01	0.	0.	.3017000E+00
15	20	0.	0.	0.	0.	.6170000E-01	0.	0.	.4040000E-01
2	18	0.	0.	0.	0.	.6080000E-01	0.	0.	.4471000E+00
1	3	0.	0.	0.	0.	.3920000E-01	0.	0.	.2593000E+00
24	3	0.	0.	0.	0.	.1450000E+00	0.	0.	.9800000E+00
5	21	0.	0.	0.	0.	.1750000E+00	0.	0.	.9900000E+00
5	25	0.	0.	0.	0.	.1540000E+00	0.	0.	.1030000E+01

BUS DATA

BNR	BTTYPE	BVMOD	BVARC	BGP	BLP	BLQ	BSTL
1	0	.1035646E+01	.7469839E-01	0.	.8200000E+00	.2100000E+00	0.
2	0	.1068539E+01	.8840321E-01	0.	.5700000E+00	.1700000E+00	0.
3	0	.1043809E+01	.5266371E-01	0.			

4	9907496E+00	.9894175E-01	0.	
5	.100B138E+01	.2606568E+00	0.	.4800000E+00
6	.1033931E+01	.5362455E-01	0.	.4300000E+00
7	.1013345E+01	.1782041E-01	0.	.4000000E+00
8	.9449775E+00	.4262190E-01	0.	.1100000E+00
9	.9675075E+00	-.1126607E+00	0.	.1000000E+00
10	.1039280E+01	.6667683E-01	0.	.2700000E+00
11	.9036827E+00	-.1100157E+00	0.	.1100000E+00
12	.9698760E+00	-.7643969E-01	0.	.2100000E+00
13	.1046447E+01	.1502292E-01	0.	.2100000E+00
14	.9449124E+00	-.11136199E+00	0.	.1100000E+00
15	.9323969E+00	.1042294E+00	0.	.1000000E+00
16	.1036334E+01	-.4548182E-01	0.	.1310000E+01
17	.9321764E+00	-.2983161E-01	0.	.3000000E+01
18	.1070000E+01	.2385343E+00	0.	.3000000E+01
19	.1050000E+01	.9210955E-01	0.	.1000000E+01
20	.1000000E+01	.2431736E+00	0.	.1450000E+01
21	.1020000E+01	.2269540E+00	0.	.2800000E+01
22	.8900000E+00	-.9958874E-01	0.	.1100000E+01
23	.1000000E+01	-.2655420E-01	0.	.5600000E+00
24	.1000000E+01	.4585686E-01	0.	-.4000000E-01
25	.1000000E+01	.3599438E+00	0.	-.5000000E-01
	.10100000E+01	0.	0.	.6300000E+00

B118FVA

NB = 118, NTL = 179

LINE DATA

LBINP	LBOUT	LINPB	LR	LX	LOUTG	LTAP
1	2	.1270000E-01	.9900000E-01	.1270000E-01	.1000000E+01	.1000000E+01
1	3	.5150000E-02	.1290000E-01	.4240000E-01	.6150000E-02	.1000000E+01
4	5	.1050000E-02	.2180000E-01	.5800000E-01	.1650000E-02	.1000000E+01
3	5	.1420000E-01	.2410000E-01	.1080000E+00	.1420000E-01	.1000000E+01
5	6	.7150000E-02	.1190000E-01	.5400000E-01	.7150000E-02	.1000000E+01
6	7	.2750000E-02	.4600000E-02	.2030000E-01	.2750000E-02	.1000000E+01
8	9	.5810000E+00	.2400000E-02	.3050000E-01	.5810000E+00	.1000000E+01
8	8	0.	0.	0.	0.	0.
9	10	0.	0.	0.	0.	0.
11	11	0.	0.	0.	0.	0.
11	12	0.	0.	0.	0.	0.
11	12	0.	0.	0.	0.	0.
12	12	0.	0.	0.	0.	0.
3	12	0.	0.	0.	0.	0.
7	12	0.	0.	0.	0.	0.
11	13	0.	0.	0.	0.	0.
11	12	0.	0.	0.	0.	0.
13	14	0.	0.	0.	0.	0.
13	15	0.	0.	0.	0.	0.
14	15	0.	0.	0.	0.	0.
12	16	0.	0.	0.	0.	0.
15	17	0.	0.	0.	0.	0.
16	17	0.	0.	0.	0.	0.
17	18	0.	0.	0.	0.	0.
18	19	0.	0.	0.	0.	0.
19	20	0.	0.	0.	0.	0.
15	19	0.	0.	0.	0.	0.
20	21	0.	0.	0.	0.	0.
21	22	0.	0.	0.	0.	0.
22	23	0.	0.	0.	0.	0.
23	24	0.	0.	0.	0.	0.
23	25	0.	0.	0.	0.	0.
25	25	0.	0.	0.	0.	0.
26	27	0.	0.	0.	0.	0.
27	28	0.	0.	0.	0.	0.
28	29	0.	0.	0.	0.	0.
30	17	0.	0.	0.	0.	0.
30	39	0.	0.	0.	0.	0.
26	39	0.	0.	0.	0.	0.
27	31	0.	0.	0.	0.	0.
29	31	0.	0.	0.	0.	0.

60	62	.7350000E-02	.1230000E-01	.5600000E-01	.-1000000E+01
61	62	.4900000E-02	.8200000E-02	.3760000E-01	.-1000000E+01
63	59	0.	0.	.3860000E-01	.-1040000E+01
63	64	0.	.1080000E+00	.-1080000E+00	0.
64	61	0.	0.	.2680000E-01	.-1020000E+01
64	65	38	.5230000E+00	.9860000E+00	.5230000E+00
64	65	64	.1900000E+00	.2700000E-02	.3020000E-01
64	65	66	.2480000E-01	.9000000E-02	.4590000E-01
49	66	68	.1240000E-01	.2030000E-01	.5410000E-01
49	66	116	.2890000E-01	.4820000E-01	.2180000E+00
62	66	62	.1550000E-01	.2580000E-01	.1170000E+00
62	67	65	0.	.3700000E-01	0.
66	67	66	.1340000E-01	.2240000E-01	.1015000E+00
65	68	65	.3190000E+00	.2140000E-01	.5600000E-01
47	118	47	.3545000E-01	.8440000E-01	.2778000E+00
49	118	118	.4140000E-01	.9850000E-01	.3240000E+00
118	68	118	0.	.3700000E-01	0.
66	67	70	.6100000E-01	.3000000E-01	.1270000E+00
24	70	70	.5100000E-01	.1022000E+00	.4115000E+00
70	71	70	.4400000E-02	.8800000E-02	.3550000E-01
24	72	24	.2440000E-01	.4880000E-01	.1960000E+00
71	72	22	.2220000E-01	.4460000E-01	.1800000E+00
71	73	71	.5900000E-02	.8600000E-02	.4540000E-01
70	74	70	.1685000E-01	.4010000E-01	.1323000E+00
70	75	70	.1800000E-01	.4280000E-01	.1410000E+00
118	75	118	.6200000E-01	.4050000E-01	.1220000E+00
74	75	74	.5150000E-02	.1230000E-01	.4050000E-01
76	77	76	.1840000E-01	.4440000E-01	.1480000E+00
118	77	118	.5190000E-01	.3090000E-01	.1010000E+00
75	77	75	.2490000E-01	.6010000E-01	.1990000E+00
77	78	77	.6300000E-02	.2380000E-01	.5240000E-01
78	79	78	.3250000E-02	.5500000E-02	.2440000E-01
77	80	77	.3500000E-01	.1090000E-01	.3320000E-01
114	115	114	.1140000E-01	.2300000E-02	.1040000E+00
79	80	79	.9350000E-02	.1560000E-02	.7040000E-01
68	81	68	.4040000E+00	.1800000E-02	.2020000E+00
81	80	81	0.	.3700000E-01	0.
77	82	77	.4870000E-01	.2980000E-01	.8530000E-01
82	83	82	.1900000E-01	.1120000E-01	.3660000E-01
83	84	83	.1290000E-01	.6250000E-01	.1320000E+00
83	85	83	.1740000E-01	.4300000E-01	.1480000E+00
84	85	84	.6150000E-02	.3020000E-01	.6410000E-01
85	86	85	.1380000E-01	.3500000E-01	.1230000E+00
86	87	86	.2225000E-01	.2830000E-01	.2074000E+00
85	88	85	.1380000E-01	.2000000E-01	.1020000E+00
85	89	85	.2350000E-01	.2390000E-01	.1730000E+00
88	89	88	.9650000E-02	.1390000E-01	.7120000E-01
89	90	89	.7940000E-01	.1640000E-01	.6520000E-01
27	115	27	.5300000E-01	.1640000E-01	.7410000E-01
90	91	90	.1070000E-01	.2540000E-01	.8360000E-01

BUS DATA		BVARG	BGP	BLP	BLQ	BSTL
BNR	BTYPE	BVMOD	0.	.5100000E+00	.2700000E+00	0.
1	1	.1150000E+01	0.	.2000000E+00	.9000000E-01	0.
2	0	.1000000E+01	0.	.3900000E+00	.1000000E+00	0.
3	0	.1000000E+01	0.	.9000000E+00	.1200000E+00	0.
4	1	.1100000E+01	0.	0.	0.	- .4000000E+00
5	0	.1000000E+01	0.	.5200000E+00	.2200000E+00	0.
		.0000000E+00	0.			

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7 . 1000000E+01 0 . 1000000E+00 0 . 1900000E+00 0 . 2000000E+00 0 .
8 . 1000000E+01 0 . 1000000E+00 0 . 5000000E+00 0 . 0 . 0 .
9 . 1000000E+01 0 . 1000000E+00 0 . 0 . 0 . 0 .
10 . 1000000E+00 0 . 1000000E+01 0 . 4500000E+01 0 . 8500000E+00 0 .
11 . 1000000E+01 0 . 9100000E+00 0 . 7000000E+00 0 . 2300000E+00 0 .
12 . 1000000E+00 0 . 1000000E+01 0 . 3700000E+00 0 . 1000000E+00 0 .
13 . 1000000E+01 0 . 1000000E+00 0 . 3400000E+00 0 . 1600000E+00 0 .
14 . 1000000E+01 0 . 9700000E+00 0 . 1400000E+00 0 . 1000000E-01 0 .
15 . 1000000E+01 0 . 1000000E+01 0 . 9000000E+00 0 . 3000000E+00 0 .
16 . 1000000E+01 0 . 1000000E+00 0 . 2500000E+00 0 . 1000000E+00 0 .
17 . 1000000E+01 0 . 9700000E+00 0 . 1100000E+00 0 . 3000000E-01 0 .
18 . 9700000E+00 0 . 9600000E+00 0 . 6000000E+00 0 . 3400000E+00 0 .
19 . 9600000E+00 0 . 1000000E+01 0 . 4500000E+00 0 . 2500000E+00 0 .
20 . 1000000E+01 0 . 1000000E+01 0 . 1800000E+00 0 . 3000000E-01 0 .
21 . 1000000E+01 0 . 1000000E+00 0 . 1400000E+00 0 . 8000000E-01 0 .
22 . 1000000E+01 0 . 1000000E+01 0 . 1000000E+00 0 . 5000000E-01 0 .
23 . 1000000E+01 0 . 9100000E+00 0 . 7000000E-01 0 . 3000000E-01 0 .
24 . 1000000E+01 0 . 1100000E+01 0 . 3000000E+00 0 . 2000000E+01 0 .
25 . 1000000E+01 0 . 1010000E+01 0 . 2200000E+01 0 . 2600000E+01 0 .
26 . 1000000E+01 0 . 9700000E+00 0 . 8200000E+00 0 . 1300000E+00 0 .
27 . 1000000E+01 0 . 1000000E+01 0 . 1700000E+00 0 . 1660000E+01 0 .
28 . 1000000E+01 0 . 1000000E+01 0 . 2400000E+00 0 . 9900000E+00 0 .
29 . 1000000E+01 0 . 1000000E+00 0 . 7000000E-01 0 . 4300000E+00 0 .
30 . 1000000E+01 0 . 9200000E+00 0 . 5900000E+00 0 . 9900000E+00 0 .
31 . 9600000E+00 0 . 1000000E+01 0 . 2300000E+00 0 . 2300000E+00 0 .
32 . 1000000E+01 0 . 9400000E+00 0 . 9000000E-01 0 . 1400000E+00 0 .
33 . 9400000E+00 0 . 1000000E+01 0 . 5900000E+00 0 . 2600000E+00 0 .
34 . 1000000E+01 0 . 9800000E+00 0 . 3300000E+00 0 . 9000000E-01 0 .
35 . 9800000E+00 0 . 1000000E+01 0 . 3100000E+00 0 . 1700000E+00 0 .
36 . 1000000E+01 0 . 1000000E+01 0 . 0 . 0 . - 2500000E+00 0 .
37 . 1000000E+01 0 . 1000000E+00 0 . 0 . 0 . 0 .
38 . 1000000E+01 0 . 1000000E+01 0 . 0 . 0 . 0 .
39 . 1000000E+01 0 . 9700000E+00 0 . 7600000E+00 0 . 1100000E+00 0 .
40 . 1000000E+01 0 . 1000000E+01 0 . 3700000E+00 0 . 2300000E+00 0 .
41 . 1000000E+01 0 . 1000000E+01 0 . 1100000E+01 0 . 1000000E+00 0 .
42 . 1000000E+01 0 . 1000000E+01 0 . 1800000E+00 0 . 7000000E-01 0 .
43 . 1000000E+01 0 . 1000000E+01 0 . 1600000E+00 0 . 8000000E-01 0 . 1000000E+00 0 .
44 . 1000000E+01 0 . 1000000E+01 0 . 5300000E+00 0 . 2200000E+00 0 .
45 . 1000000E+01 0 . 1000000E+01 0 . 2800000E+00 0 . 1000000E+00 0 .
46 . 1000000E+01 0 . 1000000E+01 0 . 3400000E+00 0 . 0 . 0 .
47 . 1000000E+01 0 . 1000000E+01 0 . 2000000E+00 0 . 1100000E+00 0 .
48 . 1000000E+01 0 . 1020000E+01 0 . 8700000E+00 0 . 3000000E+00 0 .
49 . 1000000E+01 0 . 1000000E+01 0 . 1700000E+00 0 . 4000000E-01 0 .
50 . 1000000E+01 0 . 1000000E+01 0 . 1700000E+00 0 . 8000000E-01 0 .
51 . 1000000E+01 0 . 1000000E+01 0 . 1800000E+00 0 . 5000000E-01 0 .
52 . 1000000E+01 0 . 1000000E+01 0 . 2300000E+00 0 . 1100000E+00 0 .
53 . 1000000E+01 0 . 9500000E+00 0 . 2300000E+00 0 . 3200000E+00 0 .
54 . 9500000E+00 0 . 9500000E+00 0 . 6300000E+00 0 . 1800000E+00 0 .
55 . 9500000E+00 0 . 9500000E+00 0 . 8400000E+00 0 . 0 . 0 .

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57	0.	.1000000E+01	.1200000E+00	.3000000E-01	0.
58	0.	.1000000E+01	.1200000E+00	.3000000E-01	0.
59	1	.990000E+00	.2770000E+01	.1300000E+01	0.
60	0	.1000000E+01	.7800000E+00	.3000000E-01	0.
61	1	.1000000E+01	0.	.3000000E+00	0.
62	-1	.1000000E+01	0.	.1400000E+00	0.
63	0	.1000000E+01	0.	0.	0.
64	0	.1000000E+01	0.	0.	0.
65	1	.1000000E+01	.3910000E+01	0.	0.
66	0	.1050000E+01	.3920000E+01	.3900000E+00	.1800000E+00
67	0	.1000000E+01	0.	.2800000E+00	.7000000E-01
68	0	.1000000E+01	0.	0.	0.
69	0	.1000000E+01	0.	.3300000E+00	.1500000E+00
70	1	.9800000E+00	0.	.6600000E+00	.2000000E+00
71	1	.1000000E+01	0.	0.	0.
72	1	.9800000E+00	.2000000E+00	.3200000E+00	0.
73	1	.9900000E+00	.1500000E+00	.2100000E+00	.0.
74	1	.9600000E+00	0.	.6800000E+00	.2700000E+00
75	0	.1000000E+01	0.	.4700000E+00	.1100000E+00
76	1	.9400000E+00	0.	.6800000E+00	.3600000E+00
77	1	.1010000E+01	0.	.6100000E+00	.2800000E+00
78	0	.1000000E+01	0.	.7100000E+00	.2600000E+00
79	0	.1000000E+01	0.	.3900000E+00	.3200000E+00
80	1	.1040000E+01	0.	.1300000E+01	.2600000E+00
81	0	.1000000E+01	0.	0.	0.
82	0	.1000000E+01	0.	.5400000E+00	.2700000E+00
83	0	.1000000E+01	0.	.2000000E+00	.1000000E+00
84	0	.1000000E+01	0.	.1100000E+00	.7000000E-01
85	1	.9900000E+00	0.	.2400000E+00	.1500000E+00
86	0	.1000000E+01	0.	.2100000E+00	.1000000E+00
87	1	.1010000E+01	0.	0.	0.
88	0	.1000000E+01	0.	.4800000E+00	.1000000E+00
89	1	.1000000E+01	0.	.1730000E+01	.4200000E+00
90	1	.9900000E+00	.1000000E+00	.2200000E+00	0.
91	1	.9800000E+00	.1200000E+00	.6500000E+00	.1000000E+00
92	1	.9900000E+00	0.	.1200000E+00	.7000000E-01
93	0	.1000000E+01	0.	.3000000E+00	.1600000E+00
94	0	.1000000E+01	0.	.4200000E+00	.3100000E+00
95	0	.1000000E+01	0.	.3800000E+00	.1500000E+00
96	0	.1000000E+01	0.	.1500000E+00	.9000000E-01
97	0	.1000000E+01	0.	.3400000E+00	.8000000E-01
98	0	.1000000E+01	0.	.6200000E+00	.1800000E+00
99	1	.1010000E+01	0.	.3700000E+00	.1500000E+00
100	1	.1020000E+01	0.	.2200000E+00	.1800000E+00
101	0	.1000000E+01	0.	.5000000E-01	.3000000E-01
102	0	.1000000E+01	0.	.2300000E+00	.1600000E+00
103	1	.1010000E+01	0.	.3800000E+00	.2500000E+00
104	1	.9700000E+00	0.	.3100000E+00	.2600000E+00
105	1	.9600000E+00	0.	.4300000E+00	.1600000E+00
		.1000000E+01	0.		0.

107	1	.950000E+00	0.	1200000E+00	.620000E+00	.1200000E+00	.600000E-01
108	0	.100000E+01	0.	0.	.200000E-01	.100000E-01	0.
109	0	.100000E+01	0.	0.	.800000E-01	.300000E-01	0.
110	-1	.970000E+00	0.	0.	.390000E+00	.390000E+00	.600000E-01
111	-1	.980000E+00	0.	0.	.360000E+00	0.	0.
112	-1	.980000E+00	0.	0.	.120000E+00	.800000E+00	.130000E+00
113	-1	.990000E+00	0.	0.	.120000E+00	.120000E+00	0.
114	-1	.100000E+01	0.	0.	.120000E+00	.800000E-01	.300000E-01
115	0	.100000E+01	0.	0.	.220000E+00	.220000E+00	.700000E-01
116	1	.100000E+01	0.	0.	-.1840000E+01	0.	0.
117	0	.100000E+01	0.	0.	.200000E+00	.800000E-01	0.
118	2	.103000E+01	0.	0.	.516000E+01	.300000E+01	0.

B113SVA (EPS = 1.E-6)

NB = 116, NTL = 179

LINE DATA

LBINP	LBOUT	LINPG	LR	LX	LOUTG	LTAP
1	2	0.	.3030000E-01	.9900000E-01	0.	.1270000E-01
1	3	0.	.1290000E-01	.4240000E-01	0.	.5150000E-01
1	4	0.	.2180000E-01	.5800000E-01	0.	.1050000E-02
3	5	0.	.2410000E-01	.1080000E+00	0.	.1420000E-01
5	6	0.	.7150000E-02	.1190000E-01	0.	.7150000E-02
5	7	0.	.4600000E-02	.2680000E-01	0.	.2750000E-02
6	8	0.	.2490000E+00	.3050000E-01	0.	.5810000E+00
6	9	0.	0.	.2670000E-01	0.	.1020000E+01
6	10	0.	0.	.3220000E-01	0.	.1000000E+01
4	11	0.	.2600000E-02	.3400000E-01	0.	.6150000E+00
4	12	0.	.2090000E-01	.6800000E-01	0.	.8750000E-02
5	13	0.	.2030000E-01	.6820000E-01	0.	.8700000E-02
11	14	0.	.6030000E-02	.1960000E-01	0.	.2500000E-02
12	15	0.	.1870000E-01	.6160000E-01	0.	.7850000E-02
3	12	0.	.2030000E-01	.1600000E+00	0.	.2030000E-01
7	12	0.	.4350000E-02	.8600000E-02	0.	.4350000E-02
11	13	0.	.2230000E-01	.2230000E-01	0.	.9400000E-02
12	14	0.	.9100000E-02	.2150000E-01	0.	.9100000E-02
13	15	0.	.3135000E-01	.7440000E-01	0.	.3135000E-01
14	15	0.	.2510000E-01	.5950000E-01	0.	.2510000E-01
12	16	0.	.1070000E-01	.2120000E-01	0.	.1070000E-01
15	17	0.	.2220000E-01	.1320000E-01	0.	.2220000E-01
16	17	0.	.2330000E-01	.4540000E-01	0.	.2330000E-01
17	18	0.	.6500000E-02	.1230000E-01	0.	.6500000E-02
18	19	0.	.5700000E-02	.1190000E-01	0.	.5700000E-02
19	20	0.	.1490000E-01	.2520000E-01	0.	.1490000E-01
15	19	0.	.5050000E-02	.1200000E-01	0.	.5050000E-02
20	21	0.	.1680000E-01	.1830000E-01	0.	.1680000E-01
21	22	0.	.1230000E-01	.2090000E-01	0.	.1230000E-01
22	23	0.	.2020000E-01	.3420000E-01	0.	.2020000E-01
23	24	0.	.2490000E-01	.1350000E-01	0.	.2490000E-01
23	25	0.	.4320000E-01	.1560000E-01	0.	.4320000E-01
25	27	0.	.6830000E-01	.3820000E-01	0.	.1040000E+01
1	2	0.	.3180000E-01	.1630000E+00	0.	.1000000E+01
1	3	0.	.1910000E-01	.8550000E-01	0.	.1030000E-01
1	4	0.	.2730000E-01	.9430000E-01	0.	.1190000E-01
30	31	0.	.2570000E+00	.4300000E-02	0.	.2570000E+00
3	30	0.	.4540000E+00	.8030000E-02	0.	.4540000E+00
26	30	0.	.1995000E-01	.4740000E-01	0.	.1995000E-01
17	31	0.	.4150000E-02	.1080000E-01	0.	.4150000E-02
29	31	0.	0.	.3310000E-01	0.	.1000000E+01

60	62	7350000E-02	1230000E-01	5600000E-01	10000000E+01
61	62	4900000E-02	8200000E-02	4900000E-02	10000000E+01
63	64	1080000E+00	1700000E-02	1080000E+00	10000000E+01
64	64	5230000E+00	9600000E-02	5230000E+00	10000000E+01
38	65	1900000E+00	2700000E-02	1900000E+00	10000000E+01
64	65	2400000E-01	9400000E-02	2400000E-01	10000000E+01
49	66	1240000E-01	2030000E-01	4590000E-01	10000000E+01
68	116	2890000E-01	4820000E-01	5410000E-01	10000000E+01
62	66	1550000E-01	2580000E-01	2180000E+00	10000000E+01
62	67	1550000E-01	2580000E-01	1170000E+00	10000000E+01
66	65	1340000E-01	2240000E-01	1370000E-01	10000000E+01
65	65	3190000E+00	2140000E-01	1015000E+00	10000000E+01
47	118	3545000E-01	6440000E-01	5600000E-01	10000000E+01
49	118	4140000E-01	9850000E-01	3190000E+00	10000000E+01
118	68	6100000E-01	3000000E-01	3190000E+00	10000000E+01
118	70	5100000E-01	1022000E+00	4115000E+00	10000000E+01
24	70	4400000E-02	8800000E-02	3550000E-01	10000000E+01
70	71	2440000E-01	4880000E-01	1960000E+00	10000000E+01
24	72	2220000E-01	4460000E-01	1800000E+00	10000000E+01
71	73	5900000E-02	8660000E-02	4540000E-01	10000000E+01
70	74	1685000E-01	4010000E-01	1323000E+00	10000000E+01
70	75	1800000E-01	4280000E-01	1410000E+00	10000000E+01
116	75	6290000E-01	4050000E-01	1220000E+00	10000000E+01
74	75	1230000E-01	4060000E-01	4060000E-01	10000000E+01
76	77	1840000E-01	4440000E-01	1480000E+00	10000000E+01
118	77	5190000E-01	3690000E-01	1010000E+00	10000000E+01
75	77	2490000E-01	6910000E-01	1999600E+00	10000000E+01
77	78	6390000E-02	2360000E-01	5240000E-01	10000000E+01
78	79	3250000E-02	5560000E-02	2440000E-01	10000000E+01
77	80	3500000E-01	9900000E-01	3320000E-01	10000000E+01
114	115	1140000E-01	2360000E-02	1040000E+00	10000000E+01
79	80	9350000E-02	1560000E-01	7640000E-01	10000000E+01
63	81	4040000E+00	1830000E-02	2020000E+00	10000000E+01
77	82	4870000E-01	2930000E-01	3700000E-01	10000000E+01
82	83	1900000E-01	1120000E-01	8530000E-01	10000000E+01
83	84	1290000E-01	6250000E-01	3660000E-01	10000000E+01
83	85	1740000E-01	4300000E-01	1320000E+00	10000000E+01
84	85	6150000E-02	3020000E-01	1480000E+00	10000000E+01
85	86	1380000E-01	3500000E-01	6410000E-01	10000000E+01
85	87	2225000E-01	2830000E-01	1230000E+00	10000000E+01
85	88	1380000E-01	2060000E-01	2074000E+00	10000000E+01
85	89	2350000E-01	2390000E-01	1730000E+00	10000000E+01
89	90	1950000E-02	1390000E-01	7120000E-01	10000000E+01
89	90	7940000E-01	1640000E-01	6520000E-01	10000000E+01
27	115	5300000E-01	1640000E-01	7410000E-01	10000000E+01
90	91	1070000E-01	2540000E-01	6360000E-01	10000000E+01

			BUS DATA	BLP	BLQ	BSPL
BMR	BTYPE	BVMOD	BVARG	BGP		
1	1	-1150000E+01	-4905604E+00	0.	.5160000E+00	0.
2	0	-9958020E+00	-4404393E+00	0.	.2600000E+00	-9000000E-01
3	0	-1078760E+01	-4521074E+00	0.	.3900000E+00	0.
4	1	-1100000E+01	-4307591E+00	.2000000E+00	.9000000E+00	0.
5	0	-1030053E+01	-3498360E+00	0.	.5200000E+00	.2200000E+00
6	1	-9600000E+00	-3728256E+00	0.		-4660000E+00
89	92	9.2	0.			
89	92	114	0.			
89	92	92	0.			
89	92	93	0.			
89	92	94	0.			
89	93	94	0.			
89	93	95	0.			
89	93	94	0.			
89	93	96	0.			
89	92	96	0.			
89	92	96	0.			
89	94	96	0.			
89	95	97	0.			
89	95	98	0.			
89	95	99	0.			
89	92	100	0.			
89	94	100	0.			
89	95	100	0.			
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89	109	304	0.			
89	109	305	0.			
89	109	306	0.			
89	109	307	0.			
89	109	308	0.			
89	109					

7	0	-3819024E+00	0.	19000000E+00	0.	.20000000E-01	0.
8	1	-2575266E+00	0.	10000000E+00	0.	.50000000E+00	0.
9	0	-1090066E+01	0.	13009608E+00	0.	0.	0.
9	1	-1015695E+01	0.	13327458E-01	0.	.45000000E+01	0.
10	0	-9200000E+00	0.	4019587E+00	0.	.70000000E+00	0.
11	1	-9587500E+00	0.	3891282E+00	0.	.85000000E+00	0.
12	1	-9100000E+00	0.	3891282E+00	0.	.37000000E+00	0.
13	0	-9476960E+00	0.	4209423E+00	0.	.34000000E+00	0.
14	0	-9245979E+00	0.	42018986E+00	0.	.14000000E+00	0.
15	1	-9700000E+00	0.	4632744E+00	0.	.90000000E+00	0.
16	0	-9183437E+00	0.	3932962E+00	0.	.25000000E+00	0.
17	0	-9837510E+00	0.	3536648E+00	0.	.11000000E+00	0.
18	0	-9700000E+00	0.	3950730E+00	0.	.60000000E+00	0.
19	1	-9600000E+00	0.	43034989E+00	0.	.45000000E+00	0.
20	0	-9481892E+00	0.	3840101E+00	0.	.18000000E+00	0.
21	0	-9443069E+00	0.	3527004E+00	0.	.14000000E+00	0.
22	0	-9507614E+00	0.	30326290E+00	0.	.10000000E+00	0.
23	0	-9746457E+00	0.	29825725E+00	0.	.70000000E-01	0.
24	1	-9100000E+00	0.	16538725E+00	0.	.30000000E+00	0.
25	1	-1100000E+01	0.	1090693E+00	0.	.22000000E+01	0.
26	1	-1010000E+01	0.	7621163E-01	0.	.31400000E+01	0.
27	1	-9700000E+00	0.	3106975E+00	0.	.12000000E+00	0.
28	0	-8303356E+00	0.	3189325E+00	0.	.17000000E+00	0.
29	0	-8668191E+00	0.	3481301E+00	0.	.24000000E+00	0.
30	0	-1048715E+01	0.	2610267E+00	0.	0.	0.
31	1	-9200000E+00	0.	3612398E+00	0.	.43000000E+00	0.
32	1	-9600000E+00	0.	3304017E+00	0.	.59000000E+00	0.
33	0	-9400000E+00	0.	3932120E+00	0.	.23000000E+00	0.
34	1	-9764750E+00	0.	37960099E+00	0.	.59000000E+00	0.
35	0	-9830000E+00	0.	3881320E+00	0.	.33000000E+00	0.
36	1	-96809852E+00	0.	3926469E+00	0.	.31000000E+00	0.
37	0	-1037247E+01	0.	3493407E+00	0.	0.	0.
38	0	-9618943E+00	0.	2584653E+00	0.	0.	0.
39	0	-9700000E+00	0.	4039795E+00	0.	.10000000E+00	0.
40	1	-9972172E+00	0.	4146632E+00	0.	.76000000E+00	0.
41	0	-4250479E+00	0.	12000000E+00	0.	.37000000E+00	0.
42	1	-1100000E+01	0.	4082676E+00	0.	.11000000E+01	0.
43	0	-9410187E+00	0.	3610433E+00	0.	.18000000E+00	0.
44	0	-9633924E+00	0.	2874477E+00	0.	.16000000E+00	0.
45	0	-9723684E+00	0.	24446933E+00	0.	.53000000E+00	0.
46	1	-1000000E+01	0.	1902064E+00	0.	.28000000E+00	0.
47	0	-1012228E+01	0.	1431614E+00	0.	.29300000E+00	0.
48	0	-1015459E+01	0.	1539276E+00	0.	.34000000E+00	0.
49	1	-1020000E+01	0.	1397301E+00	0.	.20400000E+01	0.
50	0	-9968713E+00	0.	1671135E+00	0.	.17000000E+00	0.
51	0	-9637067E+00	0.	1933562E+00	0.	.17000000E+00	0.
52	0	-9538606E+00	0.	2699394E+00	0.	.18299999E+00	0.
53	0	-9219045E+00	0.	26994143E+00	0.	.23000000E+00	0.
54	1	-9500000E+00	0.	1209144E+00	0.	.13600000E+00	0.
55	1	-9500000E+00	0.	2098769E+00	0.	.63000000E+00	0.
56	1	-9500000E+00	0.	2047685E+00	0.	.84000000E+00	0.

57	0	-1956812E+00	0.	.12000000E+00	.30000000E+01
58	0	.2063031E+00	0.	.12000000E+00	.30000000E+01
59	0	.1544773E+00	0.	.27700000E+01	.11300000E+01
60	0	.1172426E+00	0.	.78000000E+00	.30000000E+01
61	1	.7790640E-01	0.	.16000000E+01	0.
62	1	.9857347E-01	0.	.77700000E+00	.14000000E+00
63	0	.1012638E+00	0.	0.	0.
64	0	.1016393E+01	0.	0.	0.
65	1	.16000000E+01	0.	.39100000E+01	0.
66	1	.10500000E+01	0.	.39200000E+01	.39000000E+00
67	0	.1620649E+01	0.	.7464356E-01	.28000000E+00
68	0	.1035039E+01	0.	.4946417E-01	.70000000E-01
69	0	.9495709E+00	0.	.1277532E+00	0.
70	1	.98000000E+00	0.	.1337694E+00	0.
71	0	.9843467E+00	0.	.1453353E+00	0.
72	1	.98300000E+00	0.	.1651110E+00	0.
73	1	.99000000E+00	0.	.1493263E+00	.21000000E+00
74	1	.96000000E+00	0.	.1412079E+00	.68000000E+00
75	0	.9677516E+00	0.	.1153169E+00	.47000000E+00
76	1	.94000000E+00	0.	.1142938E+00	.68000000E+00
77	1	.16100000E+01	0.	.1524004E-01	.61000000E+00
78	0	.9994062E+00	0.	.2686913E-01	.71000000E+00
79	0	.1006037E+01	0.	.1690081E-01	.39000000E+00
80	1	.10400000E+01	0.	.3548461E-01	.13000000E+01
81	0	.1605962E+01	0.	.2298825E-01	0.
82	0	.9915819E+00	0.	.1079094E-01	.54000000E+00
83	0	.9877550E+00	0.	.3436642E-01	.20000000E+00
84	0	.9846939E+00	0.	.6294966E-01	.11000000E+00
85	1	.99000000E+00	0.	.1120999E+00	.24000000E+00
86	0	.9800051E+00	0.	.8944376E-01	.21000000E+00
87	1	.10100000E+01	0.	.9407249E-01	.0.
88	0	.9862639E+00	0.	.1718026E+00	.48000000E+00
89	1	.10060000E+01	0.	.2466629E+00	0.
90	1	.99000000E+00	0.	.1327135E+00	.17300000E+01
91	1	.98000000E+00	0.	.1352157E+00	.21000000E+00
92	1	.99000000E+00	0.	.1456223E+00	.65000000E+00
93	0	.9861924E+00	0.	.9214939E-01	.12000000E+00
94	0	.9912791E+00	0.	.5389882E-01	.30000000E+00
95	0	.9816998E+00	0.	.3163870E-01	.42000000E+00
96	0	.9936350E+00	0.	.2201293E-01	.36000000E+00
97	0	.1011925E+01	0.	.2265631E-01	.15000000E+00
98	0	.1024616E+01	0.	.2237338E-01	.34000000E+00
99	1	.10100000E+01	0.	.3572922E-01	.62000000E+00
100	1	.10200000E+01	0.	.25200000E+01	.37000000E+00
101	0	.9934639E+00	0.	.5696438E-01	.18000000E+00
102	0	.9899238E+00	0.	.7920634E-01	.15000000E+00
103	1	.10106000E+01	0.	.1216301E+00	.50000000E-01
104	1	.97000000E+00	0.	.1906262E-01	.23000000E+00
105	1	.96000000E+00	0.	.3566233E-01	.38200000E+00
106	0	.95332459E+00	0.	.6320938E-01	.31000000E+00
				.43000000E+00	.16000000E+00

107	1	.9500006E+00	-.1093673E+00	.1200000E+00	.6200000E+00	.1200000E+00	.6000000E+00
108	0	.9620415E+00	-.7274693E-01	0.	.2000000E-01	.1600000E-01	0.
109	0	.9631792E+00	-.8005648E-01	0.	.8000000E-01	.3000000E-01	0.
110	1	.9700000E+00	-.9322426E-01	0.	.3900000E+00	.3000000E+00	.6000000E-01
111	1	.9800000E+00	-.6531791E-01	.3600000E+00	0.	0.	0.
112	1	.9800000E+00	-.1504671E+00	.1200000E+00	.8000000E+00	.1300000E+00	0.
113	1	.9900000E+00	-.3536098E+00	.1200000E+00	.1200000E+00	0.	0.
114	0	.9605097E+00	-.3359194E+00	0.	.8000000E-01	.3000000E-01	0.
115	0	.9633004E+00	-.3357072E+00	0.	.2000000E+00	.7000000E-01	0.
116	1	.1090000E+01	-.1484762E+00	-.1840000E+01	0.	.2000000E+00	0.
117	0	.6929709E+00	-.4212171E+00	0.	.5160000E+01	.3000000E+01	.8000000E-01
118	2	.1630000E+01	0.				0.

B118FVB

NB = 118, NTL = 179

LINE DATA

LBINP	LBOUT	LINPG	LX	LOUTG	LOUTB	LTAP
1	2	0.	.3030000E-01	.9900000E-01	.1270000E-01	.1000000E+01
1	3	0.	.5150000E-02	.1290000E-01	.5150000E-02	.1000000E+01
1	4	0.	.1050000E-02	.2180000E-01	.1650000E-02	.1000000E+01
3	5	0.	.1420000E-01	.2410000E-01	.1420000E-01	.1000000E+01
5	6	0.	.7150000E-02	.1190000E-01	.7150000E-02	.1000000E+01
6	7	0.	.2750000E-02	.4600000E-02	.2750000E-02	.1000000E+01
8	9	0.	.5810000E+00	.2400000E-02	.5810000E+00	.1000000E+01
9	10	0.	.6150000E+00	.2600000E-02	.6150000E+00	.1000000E+01
4	11	0.	.8750000E-02	.2090000E-01	.8750000E-02	.1000000E+01
5	11	0.	.8700000E-02	.2030000E-01	.8700000E-02	.1000000E+01
1	12	0.	.2500000E-02	.6000000E-02	.2500000E-02	.1000000E+01
12	12	0.	.7850000E-02	.1870000E-01	.7850000E-02	.1000000E+01
3	12	0.	.2030000E-01	.4840000E-01	.2030000E-01	.1000000E+01
7	12	0.	.4350000E-02	.8600000E-02	.4350000E-02	.1000000E+01
11	13	0.	.9400000E-02	.2230000E-01	.9400000E-02	.1000000E+01
12	14	0.	.9100000E-02	.2150000E-01	.9100000E-02	.1000000E+01
13	15	0.	.3135000E-01	.7440000E-01	.3135000E-01	.1000000E+01
14	15	0.	.2510000E-01	.5950000E-01	.2510000E-01	.1000000E+01
12	16	0.	.1070000E-01	.2120000E-01	.1070000E-01	.1000000E+01
15	17	0.	.2220000E-01	.1320000E-01	.2220000E-01	.1000000E+01
16	17	0.	.2330000E-01	.4540000E-01	.2330000E-01	.1000000E+01
17	18	0.	.6500000E-02	.1230000E-01	.6500000E-02	.1000000E+01
18	19	0.	.5700000E-02	.1190000E-01	.5700000E-02	.1000000E+01
19	20	0.	.1490000E-01	.2520000E-01	.1490000E-01	.1000000E+01
15	19	0.	.5050000E-02	.1290000E-01	.5050000E-02	.1000000E+01
20	21	0.	.1680000E-01	.1830000E-01	.1680000E-01	.1000000E+01
21	22	0.	.1230000E-01	.2090000E-01	.1230000E-01	.1000000E+01
22	23	0.	.2020000E-01	.3420000E-01	.2020000E-01	.1000000E+01
23	24	0.	.2490000E-01	.1350000E-01	.2490000E-01	.1000000E+01
0.	4320000E-01	0.	.1560000E-01	.0000000E-01	.4320000E-01	.1000000E+01
0.	8800000E-01	0.	.3130000E-01	.1630000E+00	.8800000E-01	.1000000E+01
0.	10500000E-01	0.	.1910000E-01	.8550000E-01	.10500000E-01	.1000000E+01
0.	11900000E-01	0.	.2730000E-01	.9430000E-01	.11900000E-01	.1000000E+01
23	25	0.	.25	.25	.25	.25
25	27	0.	.25	.25	.25	.25
27	28	0.	.25	.25	.25	.25
23	29	0.	.25	.25	.25	.25
30	37	0.	.30	.30	.30	.30
25	39	0.	.31	.31	.31	.31
17	31	0.	.29	.29	.29	.29
29	31	0.	.29	.29	.29	.29

23	32	0.	.5865000E-01	.3170000E-01	.1153000E-01	.1000000E+01
31	32	0.	.1255000E-01	.2980000E-01	.9580000E-01	.1000000E+01
27	32	0.	.9650000E-02	.2290000E-01	.7650000E-01	.1000000E+01
15	33	0.	.1595000E-01	.3800000E-01	.1244000E+00	.1000000E+01
15	33	0.	.3160000E-01	.7520000E-01	.2470000E+00	.1000000E+01
19	34	0.	.3160000E-01	.7520000E-02	.1020000E-01	.1000000E+01
35	36	0.	.1350000E-02	.1100000E-01	.4970000E-01	.1000000E+01
35	37	0.	.6600000E-02	.4150000E-01	.1420000E+00	.1000000E+01
33	37	0.	.1830000E-01	.8700000E-02	.2680000E-01	.1000000E+01
34	36	0.	.2850000E-02	.2260000E-02	.4900000E-02	.1000000E+01
34	37	0.	.4900000E-02	.2260000E-02	.5940000E-01	.1000000E+01
38	37	0.	.3750000E-01	.1060000E+00	.3210000E-01	.1000000E+01
37	39	0.	.1350000E-01	.5930000E-01	.1680000E+00	.1000000E+01
37	40	0.	.2100000E-01	.4600000E-02	.5400000E-01	.1000000E+01
30	38	0.	.2110000E+00	.1840000E-01	.7750000E-02	.1000000E+01
39	40	0.	.7750000E-02	.1450000E-01	.4780000E-01	.1000000E+01
40	41	0.	.6100000E-02	.5550000E-01	.2330000E+00	.1000000E+01
40	42	0.	.1720000E-01	.4100000E-01	.1350000E+00	.1000000E+01
41	42	0.	.3035000E-01	.6680000E-01	.2454000E+00	.1000000E+01
43	44	0.	.2115000E-01	.4130000E-01	.1691000E+00	.1000000E+01
43	43	0.	.1120000E-01	.2240000E-01	.9010000E-01	.1000000E+01
44	45	0.	.1160000E-01	.4060000E-01	.1356000E+00	.1000000E+01
45	46	0.	.1580000E-01	.3800000E-01	.1270000E+00	.1000000E+01
46	47	0.	.2350000E-01	.6010000E-01	.1890000E+00	.1000000E+01
46	48	0.	.8300000E-02	.1910000E-01	.6250000E-01	.1000000E+01
47	49	0.	.8600000E-01	.3580000E-01	.1615000E+00	.1000000E+01
42	49	0.	.4300000E-01	.6140000E-01	.5440000E-01	.1000000E+01
76	69	0.	.2220000E-01	.6840000E-01	.1860000E+00	.1000000E+01
45	49	0.	.6300000E-02	.1790000E-01	.5050000E-01	.1000000E+01
46	49	0.	.9350000E-02	.2670000E-01	.7520000E-01	.1000000E+01
47	49	0.	.1710000E-01	.4860000E-01	.1370000E+00	.1000000E+01
51	52	0.	.7000000E-02	.2030000E-01	.5680000E-01	.1000000E+01
52	53	0.	.2030000E-01	.4050000E-01	.1635000E+00	.1000000E+01
53	54	0.	.1550000E-01	.1263000E-01	.1220000E+00	.1000000E+01
53	54	0.	.7340000E-01	.3900000E-01	.1451000E+00	.1000000E+01
49	54	0.	.3650000E-01	.1450000E-01	.4810000E-01	.1000000E+01
51	55	0.	.1010000E-01	.1690000E-01	.7070000E-01	.1000000E+01
52	56	0.	.3650000E-02	.2280000E-01	.5950000E-01	.1000000E+01
53	56	0.	.1E50000E-02	.2490000E-01	.5510000E-01	.1000000E+01
54	57	0.	.1210000E-01	.3430000E-01	.9660000E-01	.1000000E+01
55	57	0.	.1660000E-01	.4740000E-01	.1340000E+00	.1000000E+01
56	58	0.	.1210000E-01	.3430000E-01	.9660000E-01	.1000000E+01
51	58	0.	.8950000E-02	.2550000E-01	.7190000E-01	.1000000E+01
54	59	0.	.2990000E-01	.5030000E-01	.2293000E+00	.1000000E+01
56	59	0.	.5525000E-01	.4970000E-01	.1224000E+00	.1000000E+01
59	57	0.	.2680000E-01	.3290000E-01	.1400000E+00	.1000000E+01
56	58	0.	.2625000E-01	.4740000E-01	.2158000E+00	.1000000E+01
55	59	0.	.1080000E-01	.3170000E-01	.1450000E+00	.1000000E+01
60	61	0.	.1940000E-01	.3280000E-01	.1500000E+00	.1000000E+01
59	61	0.	.7300000E-02	.2260000E-01	.5350000E-01	.1000000E+01

	BUS DATA	BVMOD	BVARG	BGP	BLP	BLQ	BSTL
1	BNR BTYPE	1150000E+01	0.	1000000E+00	5100000E+00	2760000E+00	0.
2		1000000E+01	0.	1000000E+00	2060000E+00	9000000E-01	0.
3		1000000E+01	0.	1000000E+00	3900000E+00	10000000E+00	0.
4		1000000E+01	0.	2600000E+00	9000000E+00	12600000E+00	0.
5		1000000E+01	0.	1500000E+00	2200000E+00	2200000E+00	0.
6		1652000E+01	0.	1500000E+00	5200000E+00	2200000E+00	0.
89	9.2	8000000E-02	0.	3830000E-01	4810000E-01	1000000E+01	0.
32	1.4	1350000E-01	0.	6120000E-01	2070000E-01	1000000E+01	0.
91	9.2	3870000E-01	0.	1272000E+00	1635000E-01	1000000E+01	0.
92	9.3	2580000E-01	0.	8480000E-01	1090000E-01	1000000E+01	0.
92	9.4	4810000E-01	0.	1500000E+00	2030000E-01	1000000E+01	0.
93	9.4	9400000E-02	0.	22300000E-01	7320000E-01	9400000E-02	0.
94	9.5	5550000E-02	0.	13200000E-01	4340000E-01	5550000E-02	0.
89	9.6	2470000E-01	0.	3560000E-01	1820000E+00	1000000E+01	0.
89	9.6	2720000E-01	0.	1620000E-01	6300000E+00	1000000E+01	0.
82	9.6	1150000E-01	0.	2690000E-01	8600000E-01	1150000E-01	0.
94	9.6	1270000E-01	0.	8300000E-01	9340000E-01	1000000E+01	0.
89	9.7	1430000E-01	0.	2380000E-01	1080000E+00	1000000E+01	0.
89	9.8	2730000E-01	0.	4540000E-01	2060000E+00	1000000E+01	0.
89	9.9	3860000E-01	0.	6480000E-01	2950000E+00	1000000E+01	0.
92	10.0	3920000E-01	0.	1780000E-01	5800000E-01	3020000E-01	0.
94	10.0	7350000E-02	0.	1710000E-01	5470000E-01	7350000E-02	0.
95	9.6	1200000E-01	0.	1730000E-01	8850000E-01	1200000E-01	0.
96	9.7	2380000E-01	0.	3970000E-01	1790000E+00	1230000E-01	0.
98	10.0	1080000E-01	0.	1800000E-01	6300000E-01	1080000E-01	0.
99	10.0	1640000E-01	0.	2700000E-01	1262000E+00	1640000E-01	0.
100	10.1	7300000E-02	0.	1230000E-01	5590000E-01	7300000E-02	0.
92	102	1470000E-01	0.	2460000E-01	1120000E+00	1470000E-01	0.
101	102	26B9000E-01	0.	1600000E-01	5250000E-01	2600000E-01	0.
100	103	2705000E-01	0.	2040000E-01	2040000E+00	2705000E-01	0.
100	104	2035000E-01	0.	4150000E-01	1584000E+00	2035000E-01	0.
100	104	4950000E-02	0.	4660000E-01	1625000E+00	2040000E-01	0.
103	104	3040000E-01	0.	5350000E-01	2290000E+00	3100000E+01	0.
103	105	3100000E-01	0.	6050000E-01	3780000E-01	4950000E-02	0.
100	105	4950000E-02	0.	9900000E-02	7150000E-02	1000000E+01	0.
104	105	7150000E-02	0.	1430000E-01	6470000E-01	2360000E-01	0.
100	106	2360000E-01	0.	5360000E-01	1830000E-01	2040000E-01	0.
103	105	9200000E-02	0.	2610000E-01	7030000E-01	9200000E-02	0.
105	107	2360000E-01	0.	5300000E-01	1830000E+00	2360000E-01	0.
105	107	3B00000E-02	0.	1050000E-01	2830000E-01	3B00000E-02	0.
108	109	2305000E-01	0.	3910000E-01	1813000E+00	2305000E-01	0.
103	110	1010000E-01	0.	2730000E-01	7620000E-01	1010000E-01	0.
109	110	1000000E-01	0.	2230000E-01	7550000E-01	1000000E-01	0.
110	111	3100000E-01	0.	2470000E-01	6400000E-01	3100000E-01	0.
110	112	3B50000E-02	0.	9100000E-02	3010000E-01	3B50000E-02	0.
113	113	2590000E-01	0.	6150000E-01	2030000E+00	2590000E-01	0.
32	113	0.	0.	0.	0.	0.	0.

7	0	10000000E+01	0.	19000000E+00	0.	20000000E-01
8	0	10000000E+01	0.	50000000E+00	0.	0.
9	0	10000000E+01	0.	0.	0.	0.
10	1	0	10000000E+01	0.	0.	0.
11	1	0	10000000E+01	0.	0.	0.
12	1	0	10510000E+01	0.	70000000E+00	0.
13	0	10000000E+01	0.	23000000E+00	0.	0.
14	0	10000000E+01	0.	10000000E+00	0.	0.
15	1	0	9700000E+00	0.	16000000E-01	0.
16	0	10000000E+01	0.	16000000E+00	0.	0.
17	0	10000000E+01	0.	16000000E+00	0.	0.
18	1	0	9700000E+00	0.	16000000E+00	0.
19	1	0	9600000E+00	0.	16000000E+00	0.
20	0	10000000E+01	0.	16000000E+00	0.	0.
21	0	10000000E+01	0.	16000000E+00	0.	0.
22	0	10000000E+01	0.	16000000E+00	0.	0.
23	0	10000000E+01	0.	16000000E+00	0.	0.
24	1	0	9100000E+00	0.	16000000E+00	0.
25	1	0	9700000E+00	0.	16000000E+00	0.
26	1	0	10100000E+01	0.	16000000E+00	0.
27	1	0	B2300000E+00	0.	16000000E+00	0.
28	0	10000000E+01	0.	16000000E+00	0.	0.
29	0	10000000E+01	0.	16000000E+00	0.	0.
30	0	10000000E+01	0.	16000000E+00	0.	0.
31	1	0	7830000E+00	0.	16000000E+00	0.
32	1	0	8720000E+00	0.	16000000E+00	0.
33	0	10000000E+01	0.	16000000E+00	0.	0.
34	1	0	9590000E+00	0.	16000000E+00	0.
35	0	10000000E+01	0.	16000000E+00	0.	0.
36	1	0	9630000E+00	0.	16000000E+00	0.
37	0	10000000E+01	0.	16000000E+00	0.	0.
38	0	10000000E+01	0.	16000000E+00	0.	0.
39	0	10000000E+01	0.	16000000E+00	0.	0.
40	1	0	9700000E+00	0.	16000000E+00	0.
41	0	10000000E+01	0.	16000000E+00	0.	0.
42	1	0	11000000E+01	0.	16000000E+00	0.
43	0	10000000E+01	0.	16000000E+00	0.	0.
44	0	10000000E+01	0.	16000000E+00	0.	0.
45	0	10000000E+01	0.	16000000E+00	0.	0.
46	1	0	10000000E+01	0.	16000000E+00	0.
47	0	10000000E+01	0.	16000000E+00	0.	0.
48	1	0	10200000E+01	0.	16000000E+00	0.
49	0	10000000E+01	0.	16000000E+00	0.	0.
50	0	10000000E+01	0.	16000000E+00	0.	0.
51	0	10000000E+01	0.	16000000E+00	0.	0.
52	0	10000000E+01	0.	16000000E+00	0.	0.
53	0	10000000E+01	0.	16000000E+00	0.	0.
54	1	0	9500000E+00	0.	16000000E+00	0.
55	1	0	9500000E+00	0.	16000000E+00	0.
56	1	0	9500000E+00	0.	16000000E+00	0.

57	0.	.1900000E+01	0.	.3000000E+00	0.
58	0	.1900000E+01	0	.1200000E+01	0.
59	1	.9900000E+00	0	.3000000E+00	0.
60	0	.1900000E+01	0	.1130000E+01	0.
61	1	.1060000E+01	0	.3600000E+00	0.
62	1	.1060000E+01	0	.2770000E+01	0.
63	0	.1900000E+01	0	.7800000E+00	0.
64	0	.1060000E+01	0	.0.	0.
65	1	.1090000E+01	0	.0.	0.
66	1	.1051000E+01	0	.1400000E+00	0.
67	0	.1000000E+01	0	.0.	0.
68	0	.1900000E+01	0	.0.	0.
69	0	.1600000E+01	0	.0.	0.
70	1	.9800000E+00	0	.0.	0.
71	0	.1030000E+01	0	.0.	0.
72	1	.9920000E+00	0	.0.	0.
73	1	.9920000E+00	0	.0.	0.
74	1	.9600000E+00	0	.0.	0.
75	0	.1020000E+01	0	.0.	0.
76	1	.9450000E+00	0	.0.	0.
77	1	.1010000E+01	0	.0.	0.
78	0	.1000000E+01	0	.0.	0.
79	0	.1000000E+01	0	.0.	0.
80	1	.1040000E+01	0	.0.	0.
81	0	.1060000E+01	0	.0.	0.
82	0	.1000000E+01	0	.0.	0.
83	0	.1000000E+01	0	.0.	0.
84	0	.1030000E+01	0	.0.	0.
85	1	.9920000E+00	0	.0.	0.
86	0	.1020000E+01	0	.0.	0.
87	1	.1010000E+01	0	.0.	0.
88	0	.1060000E+01	0	.0.	0.
89	1	.1000000E+01	0	.0.	0.
90	1	.9920000E+00	0	.0.	0.
91	1	.9800000E+00	0	.0.	0.
92	1	.9920000E+00	0	.0.	0.
93	0	.1060000E+01	0	.0.	0.
94	0	.1000000E+01	0	.0.	0.
95	0	.1090000E+01	0	.0.	0.
96	0	.1010000E+01	0	.0.	0.
97	0	.1060000E+01	0	.0.	0.
98	0	.1000000E+01	0	.0.	0.
99	1	.1010000E+01	0	.0.	0.
100	1	.1020000E+01	0	.0.	0.
101	0	.1000000E+01	0	.0.	0.
102	0	.1060000E+01	0	.0.	0.
103	1	.1010000E+01	0	.0.	0.
104	1	.9790000E+00	0	.0.	0.
105	1	.9650000E+00	0	.0.	0.
106	0	.1020000E+01	0	.0.	0.

197	1	0.	.9500000E+00	0.	.1200000E+00	.6200000E+00	.1200000E+00	.6000000E-01
198	0	0.	.1000000E+01	0.	.2000000E-01	.1000000E-01	.1000000E-01	0.
199	0	0.	.1000000E+01	0.	.8000000E-01	.3000000E-01	.3000000E-01	0.
200	1	1	.9730000E+00	0.	.3900000E+00	.3000000E+00	.3000000E+00	.6600000E-01
201	1	1	.9830000E+00	0.	0.	.3600000E+00	.3600000E+00	0.
202	1	1	.9890000E+00	0.	.8000000E+00	.1200000E+00	.1300000E+00	0.
203	1	1	.9900000E+00	0.	.1200000E+00	.1200000E+00	.1200000E+00	0.
204	0	0.	.1000000E+01	0.	.8000000E-01	.3000000E-01	.3000000E-01	0.
205	0	0.	.1000000E+01	0.	.2200000E+00	.2200000E+00	.7600000E-01	0.
206	1	1	.1000000E+01	0.	.1200000E+00	0.	.1200000E+00	0.
207	0	0.	.1600000E+01	0.	.2000000E+00	.2000000E+01	.8000000E-01	0.
208	2	2	.1630000E+01	0.	.2278000E+01	.3000000E+01	.3000000E+01	0.

B116C (EPS = 1.E-6)
 NB = 18, NTL = 179

LINE DATA

LBINP	LBOUT	LINPG	LINPB	LX	LOUTG	LOUTB	LTAP
1	2	0.	.1270000E-01	.9900000E-01	0.	.1270000E-01	.1000000E+01
1	3	0.	.1250000E-01	.4240000E-01	0.	.1250000E-02	.1000000E+01
4	5	0.	.1050000E-02	.2180000E-01	0.	.1050000E-02	.1000000E+01
3	5	0.	.1420000E-01	.2410000E-01	0.	.1420000E-01	.1000000E+01
5	6	0.	.7150000E-02	.1190000E-01	0.	.7150000E-02	.1000000E+01
6	7	0.	.4660000E-02	.4660000E-02	0.	.2750000E-02	.1000000E+01
8	9	0.	.2400000E+00	.2400000E-02	0.	.5810000E+00	.1000000E+01
0	5	0.	.6150000E+00	.2670000E-01	0.	.2670000E-01	.1020000E+01
9	10	0.	.2600000E-02	.3220000E-01	0.	.6150000E+00	.1000000E+01
4	11	0.	.6750000E-02	.2090000E-01	0.	.6750000E-02	.1000000E+01
5	11	0.	.8700000E-02	.2030000E-01	0.	.8700000E-02	.1000000E+01
11	12	0.	.6000000E-02	.1960000E-01	0.	.2500000E-02	.1000000E+01
2	12	0.	.7850000E-02	.1870000E-01	0.	.7850000E-02	.1000000E+01
3	12	0.	.2030000E-01	.1870000E-01	0.	.2030000E-01	.1000000E+01
7	12	0.	.4350000E-02	.1660000E+00	0.	.4350000E-02	.1000000E+01
11	13	0.	.9400000E-02	.2230000E-01	0.	.9400000E-02	.1000000E+01
12	14	0.	.9100000E-02	.2150000E-01	0.	.9100000E-02	.1000000E+01
13	15	0.	.3135000E-01	.7440000E-01	0.	.3135000E-01	.1000000E+01
14	15	0.	.2510000E-01	.5950000E-01	0.	.2510000E-01	.1000000E+01
12	16	0.	.1070000E-01	.2120000E-01	0.	.1070000E-01	.1000000E+01
15	17	0.	.2220000E-01	.1320000E-01	0.	.2220000E-01	.1000000E+01
16	17	0.	.2330000E-01	.4540000E-01	0.	.2330000E-01	.1000000E+01
17	18	0.	.6500000E-02	.1230000E-01	0.	.6500000E-02	.1000000E+01
18	19	0.	.5700000E-02	.1190000E-01	0.	.5700000E-02	.1000000E+01
19	20	0.	.1490000E-01	.2520000E-01	0.	.1490000E-01	.1000000E+01
15	19	0.	.5250000E-02	.1200000E-01	0.	.5250000E-02	.1000000E+01
20	21	0.	.1080000E-01	.1830000E-01	0.	.1080000E-01	.1000000E+01
21	22	0.	.1230000E-01	.2090000E-01	0.	.1230000E-01	.1000000E+01
22	23	0.	.2020000E-01	.3420000E-01	0.	.2020000E-01	.1000000E+01
23	24	0.	.2490000E-01	.1350000E-01	0.	.2490000E-01	.1000000E+01
23	25	0.	.4320000E-01	.1560000E-01	0.	.4320000E-01	.1000000E+01
25	27	0.	.8300000E-01	.3180000E-01	0.	.8300000E-01	.1000000E+01
27	28	0.	.1910000E-01	.1910000E-01	0.	.1910000E-01	.1000000E+01
29	30	0.	.2730000E-01	.4300000E-02	0.	.2730000E-01	.1040000E+01
30	31	0.	.2570000E+00	.6000000E-02	0.	.2570000E+00	.1040000E+01
26	30	0.	.4540000E+00	.8600000E-02	0.	.4540000E+00	.1000000E+01
17	31	0.	.1995000E-01	.4740000E-01	0.	.1995000E-01	.1000000E+01
29	31	0.	.4150000E-02	.1030000E-01	0.	.4150000E-02	.1000000E+01

45

23	32	.5865000E-01	.3170000E-01	.1153000E+00	.1600000E+01
31	32	0.	.9580000E-01	.1000000E+01	.1000000E+01
27	32	0.	.1255000E-01	.1255000E-01	.1255000E-01
16	33	0.	.9650000E-02	.2290000E-01	.9650000E-01
15	33	0.	.1595000E-01	.3800000E-01	.1595000E-01
19	34	0.	.3160000E-01	.7520000E-01	.2470000E+00
35	36	0.	.1350000E-02	.2200000E-02	.1020000E-01
35	37	0.	.6600000E-02	.1100000E-01	.4970000E-01
33	37	0.	.1830000E-01	.4150000E-01	.1420000E+00
34	36	0.	.2850000E-02	.8700000E-02	.2680000E-01
34	37	0.	.4900000E-02	.2260000E-01	.5940000E-01
36	37	0.	.4900000E-02	.3750000E-01	.1600000E+00
37	39	0.	.1350000E-01	.3210000E-01	.1350000E-01
37	40	0.	.2100000E-01	.5930000E-01	.2100000E-01
38	40	0.	.3890000E-02	.4600000E-02	.5400000E-01
40	41	0.	.7750000E-02	.1840000E-01	.6050000E-01
40	41	0.	.6100000E-02	.1450000E-01	.4780000E-01
40	42	0.	.2330000E-01	.5560000E-01	.1830000E+00
41	42	0.	.1720000E-01	.4100000E-01	.1350000E+00
43	44	0.	.3035000E-01	.6080000E-01	.2454000E+00
43	44	0.	.2115000E-01	.4130000E-01	.1681000E+00
44	45	0.	.1120000E-01	.2240000E-01	.9010000E-01
45	46	0.	.1160000E-01	.4000000E-01	.1356000E+00
45	47	0.	.1580000E-01	.3800000E-01	.1270000E+00
46	47	0.	.2360000E-01	.6010000E-01	.1890000E+00
46	48	0.	.8000000E-02	.1910000E-01	.6250000E-01
47	49	0.	.8600000E-01	.3560000E-01	.1615000E+00
42	49	0.	.4300000E-01	.6140000E-01	.5440000E-01
76	69	0.	.2220000E-01	.6840000E-01	.1860000E+00
45	49	0.	.6300000E-01	.1790000E-01	.5050000E-01
48	49	0.	.9350000E-02	.2670000E-01	.7520000E-01
49	50	0.	.1710000E-01	.4860000E-01	.1370000E+00
49	51	0.	.7000000E-02	.2030000E-01	.5880000E-01
51	52	0.	.2030000E-01	.4050000E-01	.1635000E+00
52	53	0.	.1550000E-01	.2630000E-01	.1220000E+00
53	54	0.	.7340000E-01	.3990000E-01	.1451000E+00
49	54	0.	.3650000E-01	.1450000E-01	.4810000E-01
54	55	0.	.1010000E-01	.1690000E-01	.7070000E-01
54	56	0.	.3650000E-02	.2280000E-01	.5950000E-01
55	56	0.	.1650000E-01	.2490000E-01	.5510000E-01
54	59	0.	.1210000E-01	.3430000E-01	.9660000E-01
56	57	0.	.1660000E-01	.1450000E-01	.4740000E-01
57	58	0.	.1210000E-01	.3430000E-01	.9660000E-01
58	59	0.	.8950000E-02	.2560000E-01	.7190000E-01
55	59	0.	.2990300E-01	.5030600E-01	.2293000E+00
56	59	0.	.5525000E-01	.3430000E-01	.1224600E+00
57	59	0.	.2630000E-01	.1340000E+00	.1400000E+00
55	59	0.	.2825000E-01	.4740000E-01	.2153000E+00
59	60	0.	.1880000E-01	.3170000E-01	.1450000E+00
59	61	0.	.1940000E-01	.3230000E-01	.1500000E+00
60	61	0.	.7300000E-02	.2260000E-01	.5350000E-01

660 . 5600000E-01 . 1230000E-01 . 5600000E-01 . 1000000E+01
 661 . 3760000E-01 . 8200000E-02 . 3760000E-01 . 1000000E+01
 662 . 3860000E-01 . 1000000E+00 . 3860000E-01 . 1040000E+01
 663 . 2000000E-01 . 1000000E+00 . 2000000E-01 . 1000000E+01
 664 . 2600000E-01 . 1000000E+00 . 2600000E-01 . 1020000E+01
 665 . 9000000E-01 . 1700000E-02 . 9000000E-01 . 1000000E+00
 666 . 3020000E-01 . 2700000E-02 . 3020000E-01 . 1000000E+01
 667 . 1900000E+00 . 9000000E-02 . 1900000E+00 . 1000000E+01
 668 . 2400000E-01 . 2030000E-02 . 4590000E-01 . 1600000E+01
 669 . 1240000E-01 . 2030000E-01 . 5410000E-01 . 1600000E+01
 670 . 2890000E-01 . 4820000E-01 . 2180000E+00 . 1000000E+01
 671 . 1550000E-01 . 2580000E-01 . 1700000E+00 . 1000000E+01
 672 . 6700000E-01 . 1550000E-01 . 1700000E+00 . 1000000E+01
 673 . 3190000E+00 . 2140000E-01 . 1615000E+00 . 9400000E+00
 674 . 3545000E-01 . 8440000E-01 . 2778000E+00 . 1000000E+01
 675 . 4140000E-01 . 9850000E-01 . 3240000E+00 . 1000000E+01
 676 . 6100000E-01 . 3600000E-01 . 3700000E-01 . 9900000E+00
 677 . 5100000E-01 . 10220000E+00 . 12790000E+00 . 1000000E+01
 678 . 4460000E-02 . 8630000E-02 . 4115000E+00 . 1000000E+01
 679 . 2440000E-01 . 4380000E-01 . 3550000E-01 . 1000000E+01
 680 . 2220000E-01 . 4460000E-01 . 1960000E+00 . 4400000E-02
 681 . 5960000E-02 . 8630000E-02 . 1890000E+00 . 2440000E-01
 682 . 1665000E-01 . 4010000E-01 . 4540000E-02 . 2220000E-01
 683 . 1800000E-01 . 4230000E-01 . 1323000E+00 . 1600000E-01
 684 . 6200000E-01 . 4050000E-01 . 1410000E+00 . 1600000E-01
 685 . 6150000E-02 . 1230000E-01 . 1220000E+00 . 6200000E-01
 686 . 1840000E-01 . 4470000E-01 . 4060000E-01 . 5150000E-02
 687 . 5190000E-01 . 3090000E-01 . 1410000E+00 . 1040000E-01
 688 . 2490000E-01 . 6010000E-01 . 1999000E+00 . 5190000E-01
 689 . 6300000E-02 . 2380000E-01 . 5240000E-01 . 2490000E-01
 690 . 3260000E-02 . 6530000E-02 . 2440000E-01 . 6300000E-02
 691 . 3500000E-02 . 1090000E-01 . 3320000E-01 . 3250000E-02
 692 . 1140000E-01 . 2300000E-02 . 1040000E+00 . 1140000E-01
 693 . 9350000E-02 . 1560000E-01 . 7040000E-01 . 3500000E-02
 694 . 4040000E+00 . 1890000E-02 . 2020000E+00 . 9350000E-02
 695 . 0 . 1070000E-01 . 3700000E-01 . 4040000E+00 . 4040000E+00
 696 . 4870000E-01 . 2980000E-01 . 8530000E-01 . 4870000E-01
 697 . 1900000E-01 . 1120000E-01 . 3660000E-01 . 1900000E-01
 698 . 1290000E-01 . 6250000E-01 . 1320000E+00 . 1290000E-01
 699 . 1740000E-01 . 4300000E-01 . 1430000E+00 . 1740000E-01
 700 . 6150000E-02 . 3620000E-01 . 6410000E-01 . 6150000E-02
 701 . 1320000E-01 . 3500000E-01 . 1230000E+00 . 1320000E-01
 702 . 2225000E-01 . 2830000E-01 . 2074000E+00 . 2225000E-01
 703 . 1300000E-01 . 2000000E-01 . 1020000E+00 . 1300000E-01
 704 . 2350000E-01 . 2390000E-01 . 1730000E+00 . 2350000E-01
 705 . 9650000E-02 . 1390000E-01 . 7120000E-01 . 9650000E-02
 706 . 7940000E-01 . 1640000E-01 . 6520000E-01 . 7940000E-01
 707 . 5300000E-01 . 1640000E-01 . 7410000E-01 . 5300000E-01
 708 . 1070000E-01 . 2540000E-01 . 1020000E-01 . 1070000E-01

		BUS DATA	BMR	BTYPE	BVMOD	BVARG	BGP	BLP	BLQ	BMLL
89	92	0.	8000000E-02	3830000E-01	4810000E-01	10000000E+01	16000000E+01	20700000E+00	27000000E+00	0.
32	114	0.	.2670000E-01	.1350000E-01	.6120000E-01	.2070000E-01	.1635000E-01	.1600000E-01	.1600000E+01	0.
91	92	0.	.1635000E-01	.3870000E-01	.1272000E+00	.1600000E-01	.1690000E-01	.1600000E+01	.1600000E+01	0.
92	93	0.	.1090000E-01	.2580000E-01	.8486000E-01	.1600000E-01	.2030000E-01	.2030000E-01	.1600000E+01	0.
92	94	0.	.2030000E-01	.4810000E-01	.1580000E+00	.1580000E+00	.2303000E-01	.2303000E-01	.1600000E+01	0.
93	94	0.	.9400000E-02	.2230000E-01	.7320000E-01	.9400000E-02	.1320000E-01	.6550000E-02	.1400000E+01	0.
94	95	0.	.5550000E-02	.1320000E-01	.4340000E-01	.6550000E-02	.2470000E-01	.2470000E-01	.1400000E+01	0.
80	96	0.	.2470000E-01	.3569000E-01	.1620000E+00	.2470000E-01	.2730000E-01	.2730000E-01	.1400000E+01	0.
82	96	0.	.2720000E-01	.1620000E-01	.5300000E-01	.2720000E-01	.2730000E-01	.2730000E-01	.1400000E+01	0.
94	96	0.	.1150000E-01	.2690000E-01	.8690000E-01	.1150000E-01	.1160000E-01	.1160000E-01	.1400000E+01	0.
60	97	0.	.1270000E-01	.1830000E-01	.9340000E-01	.1270000E-01	.1280000E-01	.1280000E-01	.1400000E+01	0.
80	97	0.	.1430000E-01	.2380000E-01	.1080000E+00	.1430000E-01	.1440000E-01	.1440000E+00	.1400000E+01	0.
80	98	0.	.2730000E-01	.4540000E-01	.2060000E+00	.2730000E-01	.2730000E-01	.2730000E-01	.1400000E+01	0.
92	100	0.	.3860000E-01	.6480000E-01	.2950000E+00	.3860000E-01	.3860000E-01	.3860000E-01	.1400000E+01	0.
100	96	0.	.3020000E-01	.1780000E-01	.5800000E-01	.3020000E-01	.3020000E-01	.3020000E-01	.1400000E+01	0.
96	97	0.	.7350000E-02	.1710000E-01	.6470000E-01	.7350000E-02	.7350000E-02	.7350000E-02	.1400000E+01	0.
100	98	0.	.1200000E-01	.1730000E-01	.8850000E-01	.1200000E-01	.1210000E-01	.1210000E-01	.1400000E+01	0.
99	100	0.	.2380000E-01	.3970000E-01	.1790000E+00	.2380000E-01	.2380000E-01	.2380000E-01	.1400000E+01	0.
100	101	0.	.1080000E-01	.1800000E-01	.5830000E-01	.1080000E-01	.1080000E-01	.1080000E-01	.1400000E+01	0.
100	102	0.	.1640000E-01	.2770000E-01	.1262000E+00	.1640000E-01	.1640000E-01	.1640000E-01	.1400000E+01	0.
92	102	0.	.7390000E-02	.1230000E-01	.6590000E-01	.7390000E-02	.7390000E-02	.7390000E-02	.1400000E+01	0.
101	102	0.	.1470000E-01	.2460000E-01	.1120000E+00	.1470000E-01	.1470000E-01	.1470000E-01	.1400000E+01	0.
100	103	0.	.2680000E-01	.1600000E-01	.5250000E-01	.2680000E-01	.2680000E-01	.2680000E-01	.1400000E+01	0.
100	104	0.	.2705000E-01	.4150000E-01	.2040000E+00	.2705000E-01	.2705000E-01	.2705000E-01	.1400000E+01	0.
103	104	0.	.2035000E-01	.4660000E-01	.1584000E+00	.2035000E-01	.2035000E-01	.2035000E-01	.1400000E+01	0.
103	105	0.	.2040000E-01	.5350000E-01	.1625000E+00	.2040000E-01	.2040000E-01	.2040000E-01	.1400000E+01	0.
100	106	0.	.3100000E-01	.6950000E-01	.2290000E+00	.3100000E-01	.3100000E-01	.3100000E-01	.1400000E+01	0.
104	105	0.	.4950000E-02	.9900000E-02	.3780000E-01	.4950000E-02	.4950000E-02	.4950000E-02	.1400000E+01	0.
105	106	0.	.7150000E-02	.1400000E-01	.5470000E-01	.7150000E-02	.7150000E-02	.7150000E-02	.1400000E+01	0.
105	107	0.	.2360000E-01	.5300000E-01	.1630000E+00	.2360000E-01	.2360000E-01	.2360000E-01	.1400000E+01	0.
105	108	0.	.9200000E-02	.2610000E-01	.7030000E-01	.9200000E-02	.9200000E-02	.9200000E-02	.1400000E+01	0.
105	107	0.	.2360000E-01	.5300000E-01	.1830000E+00	.2360000E-01	.2360000E-01	.2360000E-01	.1400000E+01	0.
105	109	0.	.3620000E-02	.1050000E-01	.2880000E-01	.3620000E-02	.3620000E-02	.3620000E-02	.1400000E+01	0.
103	110	0.	.2305000E-01	.3910000E-01	.1813000E+00	.2305000E-01	.2305000E-01	.2305000E-01	.1400000E+01	0.
109	110	0.	.1010000E-01	.2780000E-01	.7620000E-01	.1010000E-01	.1010000E-01	.1010000E-01	.1400000E+01	0.
1110	111	0.	.1000000E-01	.2200000E-01	.7550000E-01	.1110000E-01	.1110000E-01	.1110000E-01	.1400000E+01	0.
1110	112	0.	.3100000E-01	.2470000E-01	.6400000E-01	.3100000E-01	.3100000E-01	.3100000E-01	.1400000E+01	0.
1113	113	0.	.3850000E-02	.9100000E-02	.3010000E-01	.3850000E-02	.3850000E-02	.3850000E-02	.1400000E+01	0.
32	113	0.	.2590000E-01	.6150000E-01	.2030000E+00	.2590000E-01	.2590000E-01	.2590000E-01	.1400000E+01	0.

0. . 1160726E+01 . 5200000E+00 . 2200000E+00 . -4000000E+00 . 0.

0. . 1052600E+01 . 1560000E+00 . 1052600E+01 . 0.

7	8	-1051024E+01	-1256307E+00	0.	19000000E+00	-20000000E-01
9	0	1090000E+01	4732543E-02	0.	5000000E+00	0.
10	1	109538BE+01	1185399E+00	0.	0.	0.
11	0	1075000E+01	2435931E+00	-4500000E+01	0.	0.
12	1	105393BE+01	-1349780E+00	0.	7000000E+00	-23000000E+00
13	0	1051000E+01	-1355779E+00	0.	3700000E+00	-10000000E+00
14	0	1022300E+01	-1526019E+00	0.	3400000E+00	-1600000E+00
15	1	1028593E+01	-1443740E+00	0.	1400000E+00	-1600000E-01
16	0	9700000E+00	-1416847E+00	-1200000E+00	0.	3000000E+00
17	0	103346BE+01	-1332692E+00	0.	2500000E+00	-1000000E+00
18	1	981661BE+00	-1098191E+00	0.	1100000E+00	-3000000E-01
19	1	9700000E+00	-1361250E+00	-10000000E+00	0.	3400000E+00
20	0	9600000E+00	-1435269E+00	-2000000E+00	0.	2500000E+00
21	0	934750BE+00	-1360064E+00	0.	4500000E+00	-3000000E-01
22	0	929907BE+00	-1127197E+00	0.	1800000E+00	-3000000E-01
23	0	9167187E+00	-7094697E-01	0.	1400000E+00	-8000000E-01
24	1	9196392E+00	-1565747E-01	0.	1000000E+00	-5000000E-01
25	1	9100000E+00	-1967473E-02	15000000E+00	0.	7000000E-01
26	1	9700000E+01	-1586034E+00	-2200000E+01	0.	3000000E+00
27	1	1010000E+01	1879245E+00	3140000E+01	0.	2000000E+01
28	0	8230000E+00	-6979603E-01	-1200000E+00	0.	8200000E+00
29	0	6552494E+00	-5799669E-01	0.	1700000E+00	-1660000E+01
30	0	7132600E+00	-8654094E-01	0.	2400000E+00	-9900000E+00
31	1	1046573E+01	-1294692E-01	0.	0.	0.
32	1	7830000E+00	-1632502E+00	-1632502E+00	0.	4300000E+00
33	0	8720000E+00	-8798741E-01	-2000000E+00	0.	5900000E+00
34	1	9608905E+00	-1504374E+00	0.	2300000E+00	-9000000E-01
35	0	9590000E+00	-1568399E+00	-15000000E+00	0.	5900000E+00
36	1	9626598E+00	-1561676E+00	0.	2600000E+00	-9000000E-01
37	0	9630000E+00	-1505389E+00	-10000000E+00	0.	3300000E+00
38	0	9694930E+00	-1230655E+00	0.	3100000E+00	-17000000E+00
39	0	1041024E+01	-4228369E-01	0.	0.	-2500000E+00
40	1	9619869E+00	-1952773E+00	0.	2700000E+00	0.
41	0	9700000E+00	-21748775E+00	-10000000E+00	0.	7600000E+00
42	1	9971941E+00	-2348798E+00	0.	3700000E+00	-23000000E+00
43	0	1100000E+01	-2345837E+00	-12000000E+00	0.	1100000E+01
44	0	9574523E+00	-1647792E+00	0.	1800000E+00	-7000000E-01
45	0	9730650E+00	-1302711E+00	0.	1600000E+00	-8000000E-01
46	1	9821042E+00	-1014514E+00	0.	5300000R+00	-22000000E+00
47	0	1030000E+01	-5945363E-01	-20000000E+00	0.	28000000E+00
48	0	1013666E+01	-3334636E-01	0.	3400000E+00	-10000000E+00
49	1	1015425E+01	-2634244E-01	0.	2000000E+00	-11000000E+00
50	0	1020000E+01	-6660007E-02	-20400000E+01	0.	8700000E+00
51	0	9970669E+00	-3013484E-01	0.	1700000R+00	-4000000E+00
52	0	9640406E+00	-5607861E-01	0.	1700000R+00	-10000000E+00
53	0	9542126E+00	-6632267E-01	0.	1800000R+00	-5000000E-01
54	1	9420569E+00	-6442456E-01	0.	2300000R+00	-11000000E+00
55	1	9500000E+00	-3401910E-01	-48000000E+00	0.	3200000R+00
56	1	9590000E+00	-5649191E-01	-10300000E+00	0.	6300000R+00
57	1	9590000E+00	-5469320E-01	-12000000E+00	0.	8400000R+00

57	0	-5.135778E-01	0.	.12000000E+00	.30000000E-01
58	0	.9557350E+00	0.	.12000000E+00	.30000000E-01
59	1	.9900000E+00	0.	.15500000E+01	.27700000E+01
60	0	.9900000E+00	0.	.7401932E-02	.11300000E+01
61	1	.9900000E+00	0.	.3030899E-01	.36000000E-01
62	1	.1000000E+01	0.	.6872230E-01	0.
63	0	.1000000E+01	0.	.5095883E-01	.14000000E+00
64	0	.1016584E+01	0.	.4426557E-01	0.
65	1	.1000000E+01	0.	.6933262E-01	0.
66	1	.1051000E+01	0.	.1116362E+00	0.
67	0	.1621343E+01	0.	.1097939E+00	.39000000E+00
68	0	.1020497E+01	0.	.6872992E-01	.28000000E+00
69	0	.9507692E+00	0.	.4649824E-01	0.
70	1	.9800000E+00	0.	.5783653E-01	.33000000E+00
71	0	.9844542E+00	0.	.4446548E-01	.66000000E+00
72	1	.9836000E+00	0.	.48112736E-01	.32000000E+00
73	1	.9900000E+00	0.	.5212405E-01	.21000000E+00
74	1	.9600000E+00	0.	.66334479E-01	.15000000E+00
75	0	.9690719E+00	0.	.5019137E-01	.10000000E+00
76	1	.9450000E+00	0.	.3750296E-01	.10000000E+00
77	1	.1610000E+01	0.	.59626687E-01	.12000000E+00
78	0	.998072E+00	0.	.51638695E-01	.71000000E+00
79	0	.10066259E+01	0.	.6353933E-01	.39000000E+00
80	1	.1040000E+01	0.	.1266066E+00	.32000000E+00
81	0	.1093975E+01	0.	.4770000E+01	.20000000E+00
82	0	.9895060E+00	0.	.1098230E+00	0.
83	0	.9849330E+00	0.	.1120156E+00	.27000000E+00
84	0	.9826566E+00	0.	.1469143E+00	.10000000E+00
85	1	.9900000E+00	0.	.2514459E+00	.16000000E+00
86	0	.9892789E+00	0.	.24333831E+00	.54000000E+00
87	0	.1061000E+01	0.	.2721929E+00	.26000000E+00
88	0	.9863372E+00	0.	.3093896E+00	.11000000E+00
89	0	.1006600E+01	0.	.36338834E+00	.48000000E+00
90	1	.9900000E+00	0.	.2693314E+00	.10000000E+00
91	1	.9820000E+00	0.	.2721944E+00	.17300000E+00
92	0	.9920000E+00	0.	.2811515E+00	.42000000E+00
93	0	.9859295E+00	0.	.2147976E+00	.12000000E+00
94	0	.9932721E+00	0.	.1647665E+00	.30000000E+00
95	0	.9829997E+00	0.	.1303544E+00	.42000000E+00
96	0	.9919234E+00	0.	.1235336E+00	.38000000E+00
97	0	.1011064E+01	0.	.1160897E+00	.15000000E+00
98	0	.1024465E+01	0.	.1145596E+00	.90000000E+00
99	1	.1010000E+01	0.	.1354381E+00	.34000000E+00
100	1	.1020000E+01	0.	.1611113E+00	.62000000E+00
101	0	.9935132E+00	0.	.1948928E+00	.37000000E+00
102	0	.9909716E+00	0.	.2516491E+00	.22000000E+00
103	1	.1010000E+01	0.	.50000000E+00	.50000000E-01
104	1	.9700000E+00	0.	.7326310E-01	.23000000E+00
105	1	.9650000E+00	0.	.5592162E-01	.16000000E+00
106	0	.9616220E+00	0.	.4651366E-01	.26000000E+00
107	0	0	0.	0.	.16000000E+00

107	1	.9500000E+00	.1967222E-03	.1200000E+00	.6200000E+00	.1200000E+00	.6000000E+00
108	0	.9663026E+00	.3745288E-01	0.	.2000000E-01	.1600000E-01	0.
109	0	.967109E+00	.3693113E-01	0.	.8900000E-01	.3000000E-01	0.
110	1	.9730000E+00	.1976850E-01	.1200000E+00	.3900000E+00	.3000000E+00	.6000000E-01
111	1	.9800000E+00	.4848056E-01	.3600000E+00	0.	0.	0.
112	1	.9800000E+00	-.3607722E-01	.1200000E+00	.8900000E+00	.1300000E+00	0.
113	1	.9900000E+00	-.1063754E+00	.1200000E+00	.1200000E+00	0.	0.
114	0	.6562991E+00	-.9279073E-01	0.	.8000000E-01	.3000000E-01	0.
115	0	.8330717E+00	-.9515012E-01	0.	.2200000E+00	.7000000E-01	0.
116	1	.1000000E+01	.6125178E-01	.1200000E+00	0.	0.	0.
117	0	.1637448E+01	-.1597163E+00	0.	.2000000E+00	.8000000E-01	0.
118	2	.1030000E+01	0.	.2278000E+01	.3000000E+01	0.	0.

