

# NET LOADS COMPILATION PROGRAM

**PROGRAM:** LOADS.EXE

INTRODUCTION. This program computes the net loads to be used as input to either the Time Dependent Data (TDDATA) file or the Time Dependent Modifications (TDMODS) file which in turn become input to the HYSSR regulator. **Net loads are computed from the gross load for a period minus the summation of hydro-independent loads for that period.** This process is repeated for each year of record (beginning with 1928) to account for the available historical water sequences. **Gross loads, as used in this program, are the system generation values resulting from regulating the hydro-system to a required rule curve plus the total of the hydro-independent resources for that period and year.** The net loads program first calculates the gross loads then the net loads for the available period of record.

The LOADS.EXE program no longer asks the user to input gross loads. The program takes the system generation values resulting from a hydro system regulation along with the year that those values were generated and computes the gross loads for the regulation. Then the program subtracts the hydro-independent values for each year and period from the Gross load to develop the net load for that year and period.

INPUT. The Net Loads program executes in batch mode, so it requires a control file named

**C:\HYSSR\CONFILES\LOADS.CON.** This control file defines the names of the input file, the output file, the Study Characteristics file, the hydro-independent resources file, and the resulting loads file. A sample control file follows:

```
* C:\HYSSR\CONFILES\LOADS.CON
*
* Unit 5 is the input data
* Unit 6 is the output data
* Unit 7 is the Study Characteristics file
* Unit 8 is the hydro-independent resources file
* Unit 9 is the resulting loads file
*
*   FORMAT   T4, I2, T7, A26, T34, A11, T46, A7, T54, A10, T65, I4
*
```

| *UNIT | FILE NAME                | FORMAT      | STATUS  | ACCESS | RECL |
|-------|--------------------------|-------------|---------|--------|------|
| 5     | C:\HYSSR\DATA\GROSL0D.IN | FORMATTED   | OLD     |        |      |
| 6     | C:\HYSSR\DATA\LOADS.PRN  | FORMATTED   | UNKNOWN |        |      |
| 7     | C:\HYSSR\STCHAR93.STY    | UNFORMATTED | OLD     |        |      |
| 8     | C:\HYSSR\RESORIND.93     | FORMATTED   | OLD     |        |      |
| 9     | C:\HYSSR\DATA\LOADS.93   | FORMATTED   | UNKNOWN |        |      |

The input data file contains the program options and the system generation values. All the records in this file are in HYSSR standard record format. The record code is in columns 1 - 2. See the sample input which follows the record code descriptions.

Record code "01": This record defines the basic options. The options are input in columns 21-23 and 33-35. The data for these options is input into columns 24-32 and 36-44.

**STY** The study year which will be output to columns 17-18 on the resulting loads record.

**PUN** Write the computed loads to the loads output file.

default is to not write the loads.

Record code "70": This input record defines the system generation in Megawatts (Mw) and the year in which these values were generated from a HYSSR regulation. Each record must have the year in columns 19 - 20 and each system generation value must be paired with the proper period identifier.

Record code 99: This record is for comments. These comments are not used by the program.

SAMPLE LOADS INPUT FILE:

|    |       |          |          |          |       |
|----|-------|----------|----------|----------|-------|
| 01 | STY   | 97PUN    |          |          |       |
| 70 | 28AG1 | 10313AUG | 10334SEP | 9829OCT  | 10037 |
| 70 | 28NOV | 12054DEC | 12923    |          |       |
| 70 | 29JAN | 13582FEB | 12606MAR | 11720AP1 | 11266 |
| 70 | 29APR | 12544MAY | 13905JUN | 12835JUL | 10444 |

Independent Resource Data file. The generation for all of the projects in the system considered to be hydro-independent projects has been summed in to a file. This file consists of a table which contains data for the fourteen periods (columns) and the sixty years (rows). The first line must contain **AU1** in columns 16-18. This is the column heading for the first data column which is data for the first half of August. The format for the rest of the table is:

| Column | Data      |
|--------|-----------|
| 1- 2   | <b>19</b> |

|         |   |
|---------|---|
| 3- 7    | years (for example 28-29)               |
| 11- 18  | data for 1 <sup>st</sup> half of August |
| 19- 26  | data for 2 <sup>nd</sup> half of August |
| 27- 34  | data for September                      |
| 35- 42  | data for October                        |
| 43- 50  | data for November                       |
| 51- 58  | data for December                       |
| 59- 66  | data for January                        |
| 67- 74  | data for February                       |
| 75- 82  | data for March                          |
| 83- 90  | data for 1 <sup>st</sup> half of April  |
| 91- 98  | data for 2 <sup>nd</sup> half of April  |
| 99-106  | data for May                            |
| 107-114 | data for June                           |
| 115-122 | data for July                           |

**Please note that blank lines in this file are not allowed. A blank line signals the program that there is no more hydro-independent data to be read.**

**SAMPLE HYDRO-INDEPENDENT DATA:**

| WY Seq    | AU1  | AU2  | SEP  | OCT  | NOV  | DEC  | JAN  | FEB  | MAR  | AP1  | AP2  |
|-----------|------|------|------|------|------|------|------|------|------|------|------|
| MAY JUN   | JUL  |      |      |      |      |      |      |      |      |      |      |
| 1928-29   | 1283 | 1256 | 1175 | 1202 | 1232 | 1160 | 1104 | 924  | 1046 | 1282 | 1327 |
| 1772 1728 | 1427 |      |      |      |      |      |      |      |      |      |      |
| 1929-30   | 1241 | 1193 | 1080 | 957  | 905  | 1217 | 989  | 1424 | 1044 | 1169 | 1157 |
| 1404 1394 | 1311 |      |      |      |      |      |      |      |      |      |      |
| 1930-31   | 1171 | 1140 | 1075 | 1004 | 968  | 920  | 915  | 971  | 1008 | 1342 | 1123 |
| 1389 1279 | 1169 |      |      |      |      |      |      |      |      |      |      |
| 1931-32   | 1024 | 998  | 975  | 954  | 1020 | 928  | 1034 | 825  | 1448 | 1490 | 1511 |
| 1839 1788 | 1420 |      |      |      |      |      |      |      |      |      |      |
| 1932-33   | 1274 | 1232 | 1176 | 1159 | 1333 | 1153 | 1142 | 843  | 998  | 1189 | 1278 |
| 1797 2069 | 1597 |      |      |      |      |      |      |      |      |      |      |

**OUTPUT.** The program produces two output files. One output file contains a listing of the input, a table of the independent resources by year and period, and a table of the resulting net loads by year and period. This file is designed to be written to a line printer. A sample of this file is found beginning on the next page. The other output file contains the computed net loads for each year and period on record code 70 in standard HYSSR format. This file is ready to be used as input into the TDDATA file or the TDMODS file. **The computed net loads data are only written to this file when "PUN" is an option on the "01" record.** A sample of this file follows.

**NET LOADS OUTPUT SAMPLE:**

|    |         |          |          |          |          |       |
|----|---------|----------|----------|----------|----------|-------|
| 70 | 9728AG1 | 10313AUG | 10334SEP | 9829OCT  | 10037NOV | 12054 |
| 70 | 9728DEC | 12923    |          |          |          |       |
| 70 | 9729JAN | 13582FEB | 12606MAR | 11720AP1 | 11266APR | 12544 |
| 70 | 9729MAY | 13905JUN | 12835JUL | 10444AG1 | 10355AUG | 10397 |
| 70 | 9729SEP | 9924OCT  | 10282NOV | 12381DEC | 12866    |       |
| 70 | 9730JAN | 13697FEB | 12106MAR | 11722AP1 | 11379APR | 12714 |
| 70 | 9730MAY | 14273JUN | 13169JUL | 10560AG1 | 10425AUG | 10450 |
| 70 | 9730SEP | 9929OCT  | 10235NOV | 12318DEC | 13163    |       |

|    |         |          |          |          |          |       |
|----|---------|----------|----------|----------|----------|-------|
| 70 | 9731JAN | 13771FEB | 12559MAR | 11758AP1 | 11206APR | 12748 |
| 70 | 9731MAY | 14288JUN | 13284JUL | 10702AG1 | 10572AUG | 10592 |
| 70 | 9731SEP | 10029OCT | 10285NOV | 12266DEC | 13155    |       |
| 70 | 9732JAN | 13652FEB | 12705MAR | 11318AP1 | 11058APR | 12360 |
| 70 | 9732MAY | 13838JUN | 12775JUL | 10451AG1 | 10322AUG | 10358 |
| 70 | 9732SEP | 9828OCT  | 10080NOV | 11953DEC | 12930    |       |
| 70 | 9733JAN | 13544FEB | 12687MAR | 11768AP1 | 11359APR | 12593 |
| 70 | 9733MAY | 13880JUN | 12494JUL |          |          |       |

PROGRAM EXECUTION ON THE PC. To execute the LOADS program, have a copy of **LOADS.EXE** in the local **C:\HYSSR\PGM** subdirectory. Now type **LOADS** while in the **C:\HYSSR\PGM** subdirectory and the program will execute using the datasets named in **LOADS.CON**. This control file must be in the **C:\HYSSR\CONFILES** subdirectory and changed to meet the data file naming conventions being used. The existing format of the control file must not be altered.

PROGRAM G060E

08/19/97

NET LOAD COMPILATION

INPUT DATA

```

99      CREATES UP TO 61 YEARS OF HYSSR SYSTEM LOADS
99      A NEW HYDRO INDEPENDENT DATA FROM BPA WAS USED BEGINNING
99      JULY 1997.  THERE IS NO LONGER DATA FOR EACH PROJECT BUT
99      BPA SENT US THE TOTAL FOR THE HYDRO INDEPENDENTS.
99      RIGHT NOW THERE IS A DATA SET FOR AOP AND ONE FOR PNCA
1       STY          97PUN
70      28AG1      10313AUG      10334
70      28SEP      9829OCT      10037NOV      12054DEC      12923
70      29JAN      13582FEB      12606MAR      11720AP1      11266
70      29APR      12544MAY      13905JUN      12835JUL      10444

```