

TIME DEPENDENT DATA FILE

PROGRAM: TDDATA95.EXE

INTRODUCTION: The Time Dependent Data (TDDATA) file contains information about the projects in the system that varies during the time frame of the study. The TDDATA file for a set of studies contains project data that will be applied to those studies and will not change during the course of the studies. An example of this type of data is project natural flows because the natural flows are only modified every ten years or so. The TDDATA file is one of the three major input files required for execution of the HYSSR regulator program. TDDATA is not used as input to any other HYSSR ancillary program.

There are three types of data generally found in the TDDATA file. Some of the data may change during the course of a year (varies by period) but be the same each year. This data is referred to as **cyclical** data. Examples of cyclical data include some of the rule curves such as the Assured Rule Curve (ARC) and the four Critical Rule Curves (CRC's). Other types of data differ for each period and year. Examples of this data are some of the rule curves such as the Variable Refill Curves (VRC's) and project natural flows, project variable minimum releases, and project maximum releases. And finally, the forebay elevations for the run-of-river projects (projects without storage) should generally be included in the TDDATA file, but may be input to the TDMODS file as a change or addition. Each run-of-river project must have a forebay elevation. If no year and period are specified on the record code 25, the forebay elevation in columns 24-32 is used for all periods and years for that project.

INPUT: The program used to build the TDDATA file executes in batch mode, so it requires a control file (confile) named **C:\HYSSR\CONFILES\TDDATA.CON**. This control file defines the names of the input data file, the output file for messages, the Study Characteristics file, and the resulting TDDATA file. A sample control file follows:

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*C:\HYSSR\CONFILES\TDDATA.CON
*
* Unit 5 is the input data
* Unit 6 is the output file for error messages
* Unit 7 is the Study Characteristics file
* Unit 10 is the resulting TDDATA file
*
*     FORMAT   T4 , I2 , T7 , A26 , T34 , A11 , T46 , A7 , T54 , A10 , T65 , I4
*
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*UNIT	FILE NAME	FORMAT	STATUS	ACCESS	RECL
5	C:\HYSSR\DATA\TDDATA92.IN	FORMATTED	OLD		
6	C:\HYSSR\DATA\TDDATA.PRN	FORMATTED	UNKNOWN		
7	C:\HYSSR\DATA\STCHAR92.STY	UNFORMATTED	OLD		
10	C:\HYSSR\DATA\TDDATA.92	BINARY	UNKNOWN	DIRECT	72

The input file used to create the TDDATA file contains all of the input data in one file. This input file is large since time dependent data for each project may have fourteen period data values (one for each period of the year) and may also have up to seventy years of data. Input data uses standard HYSSR record format with 80 columns. Valid record codes and their contents follow:

RECORD	CONTENTS
25	Forebay elevations for run-of-river projects
41	Assured Refill Curves (ARC's)
42	First year Critical Rule Curve (CRC1)
43	Second year Critical Rule Curve (CRC2)
44	Third year Critical Rule Curve (CRC3)
45	Fourth year Critical Rule Curve (CRC4)
46	Middle rule curve for project used to meet target flow
47	Lowest rule curve for project used to meet target flow
48	Lower Limit for VECC
60	Natural flows
62	Mandatory Rule Curve (MRC) (flood control)
63	Variable Refill Curve (VRC)
70	Primary loads
71	Secondary loads

72	Target flow (used with record codes 46 & 47)
73	Load Decrement
74	Fixed rule curve operation
75	Load Adjustment
76	Forced Spill (fish spill)
85	Storage change (delta storage)
86	Target elevations
92	Outflows (depletions, evaporations)
93	Diversions (Grand Coulee irrigation pumping)
95	Variable storage lower bounds
96	Starting elevations
97	Variable maximum releases
98	Variable minimum releases
99	Comments

Please refer to **Appendix A** for a more detailed description of these records. Not all of these records are appropriate to every TDDATA file. For studies where Variable Refill Curves (VRC's) and Assured Refill Curves (ARC's) are being developed (like Refill Studies), the VRC's and ARC's should be input into the Time Dependent Modifications (TDMODS) file. The TDMODS file is for data which is a change or addition to the data in the TDDATA file. The TDMODS file is the appropriate file for data which will vary during the course of the studies. Please refer to the section describing the TDMODS file for further information.

The Study Characteristics file is the other input to the creation of the TDDATA file. The TDDATA file uses the project order in the Study Characteristics file as its project order. This project order is maintained through the internal

project numbers assigned to the projects and passed to the HYSSR programs through the Study Characteristics file. It is important to create a new TDDATA file whenever the Study Characteristics file for a set of studies has changed.

OUTPUT: The program creates two output files. One is a file to which error messages are written. The other is the resulting TDDATA file. The format of the TDDATA file is not readable by the user. The TDDATA file is only used as input to the HYSSR regulator program.

EXECUTION ON THE PC: The TDDATA95.exe may be found in the directory \$Library\HYSSR\HYSSR 2004. To create the Time Dependent Data (TDDATA) file, have a copy of **TDDATA95.EXE** available in the local **C:\HYSSR\PGM** subdirectory. Also since the program executes in batch mode, a control file (confile) named **TDDATA.CON** must be available in the local **C:\HYSSR\CONFILES** subdirectory. Now type **TDDATA95** while in the **C:\HYSSR\PGM** subdirectory and the program will execute using the file names listed in the confile. The resulting TDDATA file is not user readable and becomes input to the HYSSR regulator program.