

HYSSR STUDIES ON THE PC

INTRODUCTION. To perform hydro-regulation studies on the PC using the HYSSR system of programs certain requirements must be met and procedures followed. The requirements and procedures are dependent on the purpose of the study. The ancillary programs which will be used during the course of a study may vary; that is some ancillary programs will be used for some studies but not others.

BASIC HYSSR STUDY. Before a hydro system can be regulated using the HYSSR main regulator program three large input files must be prepared. These files are:

1). The Study Characteristics file (STCHAR) which contains the project characteristics for all of the projects in the system. These characteristics may not vary with time; they are the same for every period of the study. Creation of a Study Characteristics file requires that the Master files (Master Configuration file and Master Configuration file) are available and correct. If these files are not available or not correct then correct Master files must be created first. See the section on building Master files.

2). The Time Dependent Data file (TDDATA) which contains data for each project in the system. This data may vary from period to period and/or year to year. The TDDATA file must have been created using the current STCHAR for this study.

3). The Time Dependent Modifications file (TDMODS) which contains data which is a change or an addition to the data in the TDDATA file. This data also may vary from period to period and \or year to year. The TDMODS file also must have been created using the current STCHAR for this study.

Usually the STCHAR file and the TDDATA are created once for a set of studies and will remain unchanged during the course of those studies. The TDMODS file, on the other hand, is re-created each time the study requires changes or additions. Making a new TDMODS file does not change the results of the HYSSR regulation until the HYSSR main regulator program is executed again.

The usual process (after the initial creation of the STCHAR file, the TDDATA file, and the TDMODS file) is to execute the main HYSSR regulator program and examine the output either by looking at the REGOUT or SCREEN output for each period and year (limited to five years or less) or to execute the Summary program and look at the desired project and/or system tables. At this point the user may wish to change the regulation and must add the changes to the input data or change the existing input data to the TDMODS file. Then the TDMODS file must be created again by executing the TDMODS.EXE program. Now the HYSSR main regulator program is run again after making sure that the HYSSR.CON control file points to the latest TDMODS file name. Once again the user may look at the REGOUT or SCREEN output for studies of five years or less or execute the Summary program and check to see if this regulation meets their requirements. If further changes need to be made the process of changing the TDMODS input, running the TDMODS program, running the HYSSR program, and examining the output repeats.

TYPES OF HYSSR STUDIES. There are two basic types of HYSSR regulations. One is a continuous regulation and the other a refill regulation. A continuous regulation starts the regulation in the period input on the "01" record in the HYSSR.IN as NSP and the starting year input as NSY. The HYSSR main regulator program regulates all the projects in the system through each period of the first year. Then HYSSR continues to regulate each period of the second year beginning the second year with the ending storage contents from the last period of the first year. This process continues for each year of the study until the last period (NLP) of the last year has been regulated.

A refill regulation starts the regulation in the period (NSP) and year (NSY) input on the "01" record in the HYSSR.IN file. Each project in the system is regulated through each period of the first year. For the first period of the each year, HYSSR starts each project at the same storage content as was used to start the first period of the first year.

The starting storage content for both continuous and refill studies is input on record code 96 in units of feet of elevation. The year and period on each record code 96 must match the NSY (starting year) and NSP (starting period) input on the "01" record in the HYSSR.IN file. (This is the only record that contains values

for the beginning of the period. All other records contain period values for the end of the periods.) When no starting storage is input, each project starts at full (SUB). The starting storage for each project is used for the first period of the first year for continuous regulations and for the first period of each year for refill regulations.