

# BPA TO HYSSR CRITICAL RULE CURVE CONVERSION PROGRAM

**PROGRAM:** BPACRC95.EXE

INTRODUCTION. The BPA to HYSSR Critical Rule Curve Conversion program is used to convert BPA's Critical Rule Curves (CRC's) to standard HYSSR format and units. (BPA uses units of thousand-second-foot-days (KSFD) for CRC's where HYSSR rule curves must be in units of thousand-acre-feet (KAF) content).

INPUT. The BPA to HYSSR Critical Rule Curve Conversion program executes interactively, so the program prompts the user to enter the necessary information. The program requires three input files: the Study Characteristics file; the critical rule curve file in BPA's format; and a cross-reference file.

The critical rule curve input file from BPA has 14 periods per year with August and April each split in to two periods. The records in this file have either "CM" or "RC" in columns 1 - 2. "CM" records are for comments and are not read by the program. "RC" records contain the rule curves to be converted. The rule curve number is in column 4 (rule curve 1 corresponds to CRC1, rule curve 2 corresponds to CRC2, etc.). The BPA project number is in columns 5 - 8. Column 13 contains either an "A" when the data in columns 14 - 62 is for July through December, or a "B" when the data in columns 14 - 62 is for January through June. A sample of the critical rule curve input file follows.

```
CM   These are a sample of the format and data that the COE
CM   receives from BPA for critical rule curves
CM   MOSSYR (MOSSY ROCK)
RC 1 48   A      654.3  654.3  599.1  555.5  474.5  456.7
RC 1 48   B  431.5  356.8  349.3  352.9  371.2  607.4  627.3
RC 1 48   A  653.3
RC 2 48   A      654.3  649.3  595.9  511.0  408.0  300.6
RC 2 48   B  168.3  299.5  349.3  398.8  415.9  493.3  518.6
RC 2 48   A  508.0
RC 3 48   A      503.3  492.1  434.0  357.6  297.3  234.8
RC 3 48   B  251.6  293.1  349.3  500.6  358.3  463.1  369.2
RC 3 48   A  343.6
RC 4 48   A      335.4  323.8  267.7  215.4  184.2  94.0
RC 4 48   B   83.7   -1.0   -1.0   -1.0   -1.0   -1.0   -1.0
RC 4 48  A -1.0   Note: The -1.0 in the data field represent empty
```

Each record in the cross-reference file contains a BPA project number in columns 3 - 6 with its corresponding HYSSR project number in columns 9 - 12. The project's maximum storage content in KSFD is found in columns 14 - 20 and the minimum storage content in KSFD is in columns 22 - 28. Columns 30 - 38 and columns 40 - 48 contain any changes to HYSSR maximum and minimum storage contents, respectively, from what is found in the Study Characteristics file. If these columns contain 9999999.9 the values from the Study Characteristics file are not changed. The program asks the user to input the name of the cross-reference file. A sample of the cross-reference file follows.

48	163	654.3		0	9999999.9	9999999.9
76	162	92.1		0	9999999.9	9999999.9
78	161	95.6		0	9999999.9	9999999.9
82	159	225.4		0	9999999.9	9999999.9
117	166	31.1		0	9999999.9	9999999.9
1890	1	6073.0	2543.8	9999999.9		0.0
1760	3	2510.5		0	9999999.9	9999999.9

Note: The values in the cross reference file need to be checked and updated each year before the AOP studies are performed.

OUTPUT. The program creates two types of output files: the converted CRC file and a file with information about the program execution. The program will prompt the user to enter the pathname and filename for these output files.

The output file containing the converted CRC's is in standard HYSSR record format and is ready to be used as input in the creation of a TDDATA or TDMODS file which in turn is input to a HYSSR regulation.

The record code is in columns 1 - 2 and will be either "42" for CRC1 data, "43" for CRC2 data, "44" for CRC3 data, or "45" for CRC4 data. A sample of the output CRC file follows.

42	163	AG1	1297.8AUG	1297.8SEP	1188.3OCT	1101.8
42	163	NOV	941.2DEC	905.9JAN	855.9FEB	707.7
42	163	MAR	692.8AP1	700.0APR	736.3MAY	1204.8
42	163	JUN	1244.2JUL	1295.8		
43	163	AG1	1297.8AUG	1287.9SEP	1182.0OCT	1013.6
43	163	NOV	809.3DEC	596.2JAN	333.8FEB	594.1
43	163	MAR	692.8AP1	791.0APR	824.9MAY	978.5
43	163	JUN	1028.6JUL	1007.6		
44	163	AG1	998.3AUG	976.1SEP	860.8OCT	709.3
44	163	NOV	589.7DEC	465.7JAN	499.0FEB	581.4
44	163	MAR	692.8AP1	992.9APR	710.7MAY	918.6
44	163	JUN	732.3JUL	681.5		
45	163	AG1	665.3AUG	642.3SEP	531.0OCT	427.2
45	163	NOV	365.4DEC	186.4JAN	166.0FEB	0.0
45	163	MAR	0.0AP1	0.0APR	0.0MAY	0.0
45	163	JUN	0.0JUL	0.0		

The other output file contains information about the program execution. When there are no errors detected during program execution, this file only contains a list, by HYSSR external project number, of BPA XMIN (minimum storage content), BPA XMAX (maximum storage content), HYSSR SUB (storage upper bounds in AF), and HYSSR SLB (storage lower bounds in AF). A sample of this output file follows.

```
FOR PROJ=163 XMIN,XMAX,SUB,SLB= 0.0 654.3 1297800.0
FOR PROJ=162 XMIN,XMAX,SUB,SLB= 0.0 92.1 183700.0 1
FOR PROJ=161 XMIN,XMAX,SUB,SLB= 0.0 95.6 189600.0
FOR PROJ= 1 XMIN,XMAX,SUB,SLB= 2543.8 6073.0 7000000.0
FOR PROJ= 3 XMIN,XMAX,SUB,SLB= 0.0 2510.5 5869400.0 8899
```

EXECUTION ON THE PC. [The BPACRC95.exe file may be found in the directory \\$Library\HYSSR\HYSSR2004.](#) To execute the BPA to HYSSR Critical Rule Curve Conversion program, have a copy of **BPACRC95.EXE** in the local **C:\HYSSR\PGM** subdirectory. Now type **BPACRC95** while in the **C:\HYSSR\PGM** subdirectory and the program will begin execution.