

### V.3.3-RES-SNGL-SPEC SINGLE RESERVOIR REGULATION OPERATION SPECIFIC SECTION

The SPECIFIC section is used to specify parameter, time series and carryover information for each scheme and utility selected for Operation RES-SNGL.

Only those schemes activated by the RCL need to be defined. Certain utilities are activated by an RCL statement where others are executed just by being defined.

Input for this section consists of the section header, scheme/utility identifiers (followed by necessary information for definition) and the section trailer. A list of the section header and trailer, the identifiers of all the schemes and utilities and whether the scheme or utility is activated by an RCL statement is given in Table 1.

Not all schemes and utilities need a full set of parameter, time series and carryover input subsections. Table 2 lists the schemes/utilities subsection needs and whether the subsection is required or optional. If the subsection is optional, default values (described in the particular scheme/utility section) are used for definition.

#### Section Header

SPECIFIC        Indicates start of specific input

#### Scheme/Utility Subsections

The following subsections describe the input needed to define all the schemes/utilities available in RES-SNGL. Within each definition, the possibility exists for definition of parameters, time series and carryover. In general the order of each of these subsection blocks does not matter (errors will be printed if order is critical and not followed), but it is suggested that they be entered in the order:

1. PARS
2. TIME-SERIES
3. CARRYOVER

Input for defining a scheme or utility follows the format:

- Scheme/Utility Identifier (see Table 2)
- Block Info        (Block identifier, either PARS, TIME-SERIES or CARRYOVER, followed by block keywords and values and block trailer; repeated for each needed block)
- Scheme/Utility Trailer

Any scheme or RCL activated utility can be multiply defined, if there is a need to execute it with differing sets of parameters, time-

series or carryover. This is done by using a level of definition in the format:

SUID(n)

where SUID is the scheme/utility identifier  
n is the level of definition

Rules on the use of the definition level are:

1. if no level is specified it is assumed to be 1
2. additional definitions must increment the level for that scheme/utility by 1
3. the Scheme/Utility trailer does not need the level tag

An example of a multiple Scheme/Utility definition is:

```
SETQ
.
.
input for definition
.
.
ENDSETQ
SETQ(2)
.
.
input for definition
.
.
ENDSETQ
```

Another feature of parameter input is parameter referback. Certain parameters (usually multivalued curves) can be input by referring to their location of original definition, instead of reentering the curve, to reduce input (and possible mistypes). The parameters available for referback are:

1. rule curve
2. spillway rating curve
3. head versus discharge curve
4. spillway specifications (used when both the FILLSPILL and SPILLWAY schemes are used and both use the same parameters)

The format for referback use is:

keyword SUID(n)

where keyword is the particular parameter keyword  
SUID(n) is the scheme/utility identifier and level of definition where the parameter was initially defined - level is optional and follows the rules for multiple scheme/utility definition

An example of parameter referback is:

```

RULECURVE
CURVE      1      59      131      273      303      366      &
           100.0   100.0   104.0   104.0   100.0   100.0
.
.
.
ENDRULE
RULEADJ
CURVE RULECURVE(1)

```

In this example the rule curve is defined for the RULECURVE scheme. The rule curve is also needed for the rule curve adjustment utility, RULEADJ. Instead of retyping the definition a reference to its original definition is made to RULECURVE(1).

The use of the definition level for referback is redundant in this example as a level of 1 is assumed if no level is specified.

### Time Series Definition

Time series definitions follow the format:

```

KEYWORD    ID    TYPE    DT

```

```

where KEYWORD is appropriate time series keyword
      ID      is 8-character time series identifier
      TYPE    is NWSRFS data type code
      DT      is data time interval of time series

```

Table 1. SPECIFIC section keywords

<u>Keyword</u>	<u>Need RCL Statement</u>	<u>Description</u>
SPECIFIC	n/a	Section header
ADJUST	no	Adjustment of model outputs using observed values utility identifier
BACKFLOW	no	Adjustment of inflow values using observed mean discharge and pool elevation utility identifier
ENTERISC	yes	Determine need for induced surcharge scheme utility identifier
FILLSPILL	yes	Fill and spill scheme identifier
FLASHBDS	yes	Flashboard scheme identifier
GOFLASH	yes	Determine need for flash boards scheme utility identifier
INDSRCHGE	yes	Induced surcharge scheme identifier
MAXQ	no <u>1</u> /	Compute maximum discharge at given elevation utility identifier
MINQ	yes	Minimized discharge scheme identifier
PASSFLOW	yes	Pass inflow scheme identifier
POOLQ	yes	Elevation versus discharge scheme identifier
POWERGEN	yes	Power generation scheme identifier
RAINEVAP	no	Rainfall and evaporation on reservoir surface utility identifier
RULEADJ	no	Rule curve adjustment utility identifier
RULECURVE	yes	Rulecurve scheme identifier
SETDH	yes	Daily rate of change of pool elevation scheme identifier
SETDQ	yes	Daily rate of change of reservoir release scheme identifier
SETH	yes	Prescribed elevation scheme identifier
SETMAX	yes	Select maximum quantity of model outputs utility identifier

<u>Keyword</u>	<u>Need RCL Statement</u>	<u>Description</u>
SETMIN	yes	Select minimum quantity of model outputs utility identifier
SETQ	yes	Prescribed discharge scheme identifier
SPILLWAY	yes	Spillway scheme identifier
STPOOLQ	yes	Downstream stage and pool elevation controlled discharge scheme identifier
SUMINF	no	Inflow summation utility identifier
ENDSPEC	n/a	Section trailer

1/ MAXQ is the only scheme/utility activated by an RCL statement other than a DO statement. It is used for comparisons in an IF statement.

Table 2. Scheme/Utility subsections needed

<u>Identifier</u>	<u>Parameter 1/</u>	<u>Time Series 1/</u>	<u>Carryover 1/</u>
ADJUST	0	R	0
BACKFLOW	-	R	-
ENTERISC	-	-	-
FILLSPILL	R	0	R
FLASHBDS	R	0	0
GOFLASH	-	-	-
INDSRCHGE	R	-	0
MAXQ	R	-	-
MINQ	R	-	-
PASSFLOW	-	-	-
POOLQ	R	-	-
POWERGEN	R	-	0
RAINEVAP	0	R	-
RULEADJ	R	R	0
RULECURVE	R	-	-
SETDH	R	-	-
SETDQ	R	-	-
SETH	R	0	0
SETMAX	R	-	-
SETMIN	R	-	-
SETQ	R	0	0
SPILLWAY	R	0	R
STPOOLQ	R	0	0
SUMINF	R	-	-

1/ 'R' indicates subsection is required.

'O' indicates subsection is optional.  
'-' indicates subsection is not needed.