SINGLE RESERVOIR REGULATION OPERATION
UTILITY INFLOW SUMMATION

Purpose

Utility SUMINF is used to:

  o Create a running cumulative summation of time interval mean inflow for the entire run. The values are needed by both the power generation scheme and the peak outflow minimization scheme.

  o Switch on the FLOOD variable to indicate the reservoir operates under flooding condition if the threshold elevation is exceeded.

Input Summary

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Definition and Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMINF</td>
<td>Input opening keyword</td>
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<tr>
<td>PARMS</td>
<td>Parameter opening keyword</td>
</tr>
<tr>
<td>NORMQ</td>
<td>Constant period mean discharge</td>
</tr>
<tr>
<td>ELTEST</td>
<td>Pool level within ELVSSTOR curve above which reservoir operates under flooding condition</td>
</tr>
<tr>
<td>ENDPARMS</td>
<td>Parameter ending keyword</td>
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<tr>
<td>ENDSUM</td>
<td>Input ending keyword</td>
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</table>

Notes:

1/ No time series or carryover are needed by this Utility.

2/ ELVSSTOR is the elevation versus storage curve defined in the general parameter section.

Input Examples

SUMINF(1)
PARMS
NORMQ 30000.00
ELTEST 190.00
ENDP
ENDSUM

Method

The inflow summation Utility serves two purposes. First it computes a time series of cumulative inflow volumes from the summation of time
interval mean inflows for the entire run period. Second it is used to set the value of the RCL variable FLOOD. A check is made to see if during any period of the run a threshold elevation is exceeded. Starting at the beginning of the run and proceeding to the end of the run the continuity equation is used to compute a resultant storage/pool elevation based on the cumulative inflow volume and the cumulative outflow volume due to the specified constant mean discharge NORMQ. If at any period within the run the threshold elevation is exceeded then the FLOOD variable is switched on.

User Guidelines

1. The string of cumulative inflow volumes is needed by both the power generation scheme and the peak outflow minimization scheme. The inflow summation Utility must be used whenever the power generation scheme or the peak outflow minimization scheme is used.

2. The computation of inflow summation values is done as a preliminary task in the execution of the model. The pre-loop tasks represent those optional utilities that are not activated by an RCL DO statement and are executed only once during the course of a forecast run. If selected then the pre-loop tasks are conducted in the order inflow adjustment, rule curve adjustment and inflow summation.