Description

Utility SUMINF is to:

- Create a running cumulative summation of time interval mean inflow for the entire run. The values are needed by both the power generation and peak outflow minimization Schemes.
- Switch on the FLOOD variable to indicate the reservoir operates under flooding condition if the threshold elevation is exceeded.

Utility SUMINF creates the running cumulative summation of time interval mean inflows, SQIM, for the entire run period, NUM, using the following equation:

$$SQIM(IT) = \sum_{IT=1}^{IT} QIM(I) \qquad IT=1,NUM$$

The values are needed by the power generation and the peak outflow minimization Schemes. These Schemes can be only be in Operation definition if the inflow summation Utility is also defined.

Utility SUMINF also sets 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 period inflow volume and a specified constant mean discharge:

$$S = So + SQIM\ (IT) - SQIM\ (JBGN-1) - NORMQ \times (IT-JBGN+1)$$

where
- So is the pool storage at IT=JBGN-1
- JBGN is the LOBSTO +1
- LOBSTO is the last observed pool storage from observation or from other ADJUST Utility
- STORUP is the upper pool storage limit from the power generation or the peak outflow minimization Scheme
- FLOOD is the 'TRUE' if $S \geq$ STORUP
- FLOOD is the 'FALSE' if $S <$ STORUP

If at any period within the run, the threshold elevation is exceeded then the FLOOD variable is switched on. These computations are 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, inflow summation (see initial subsection of this section for discussion of preliminary tasks).