Description

Subroutine FLSH26 computes outflow from a dam with flash boards.

Calling Sequence

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CALL FLSH26 (GATOPN,SIGELV,SIGSTO,SIGFAL,SIGRIS,QIMHYD,PEAKO,
             PKPOS,ELVSOH,O,SOH,TMPSOH,ELVLG,QLG,ELVSM,QSM,ELVFL,
             QFLUD,TOTALQ,QGEN,STOR,ELEV)
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Argument List

Argument	Input/ Output	Type	Dimension	Description
GATOPN	Input	R*4	NRUN	Array of observed gate openings at time interval points; missing values will be -999.0
SIGELV	Input	R*4	NSIGEL	Significant elevation array: Provision is made for 2 sets of boards and a flood gate; 10 significant elevations can be used; NSIGEL will be the highest position number that is used even though there are missing values for some of the lower position numbers; flash boards are arbitrarily designated as large boards if there is only one set of boards; elevations can be the same for different positions but storages computed in the subroutine and put in array SIGSTO are changed slightly to keep from having two storage values that are equal; significant elevations are in following positions in array SIGELV: (1) spillway crest elevation for large boards (2) hinge elevation for large boards (3) top elevation for large boards (4) elevation where large boards go down; if the top elevation is the same for large and small

Argument	Input/ Output	Type	Dimension	Description
				boards then the elevation where large boards go down should be made slightly higher than that for small boards since the small boards tend to go down first (5) spillway crest elevation for small boards; must be -999.0 if only one set of boards (6) hinge elevation for small boards (7) top elevation of small boards; must be -999.0 if only one set of boards (8) elevation where small boards go down; must be -999.0 if only one set of boards (9) spillway crest elevation for flood gate (10) elevation where flood gate is normally opened; must be below the top of any flash boards; gate is operated insofar as possible to cause inflow to be passed
SIGSTO		R*4	NSIGEL	Work array in which storages computed on first entry into FLSH26 are placed; storages are computed from significant elevations (SIGELV) and are in units of mean discharge for the routing time step; SIGSTO(1) must be -999.0 prior to first entry into FLSH26
SIGFAL	Input	R*4	NFAL	Array of SIGELV position numbers defining significant elevations for falling pool; position numbers must specify elevations in ascending order of magnitude; when elevations for different items are equal all of them must be included; position numbers can include 2, 6 and 9; top of flash board elevations are not applicable since dropping below these elevations does not require

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				a change in the routing relation although cessation of routing may be required
SIGRIS	Input	R*4	NRIS	Array of SIGELV position numbers denoting significant elevations for rising pool; these are elevations where changes in the routing relation may be required; position numbers must specify elevations in ascending order of magnitude; when elevations are the same for different items, all must be included; possible positions (not in order of magnitude) are 4, 8, 9 and 10; tops of boards are not applicable since they do not require a change in the routing relation although beginning of routing may be required
QIMHYD	Input	R*4	NUM	Time series of mean inflows
PEAKO	Output	R*4	NUMPKO	Temporary array to hold peak outflows between time interval values; peak outflows above a specified value will replace time interval values after all outflows have been computed; not applicable if routing time step is equal to time interval
PKPOS	Output	R*4	NUMPKO	Array of position numbers that indicate where the corresponding PEAKO values will be placed in the instantaneous outflow time series
ELVSOH	Input	R*4	NELSOH	Array of elevations in ascending order for use in computing the outflow versus storage plus outflow/2 relation; first value must be the lowest spillway crest; other values are obtained from the elevation versus storage and elevation versus maximum spillway discharge relations for boards and flood gate
STOSOH		R*4	NELSOH	Pool storage values corresponding to ELVSOH elevations

Argument	Input/ Output	Type	Dimension	Description
O		R*4	NOSOH	Array of spillway discharge values for O versus SOH relation; first value must be O
SOH		R*4	NOSOH	Storage above spillway crest plus outflow/2 values for O versus SOH relation; O and SOH values will be computed whenever flash board or gate conditions change; storage must be in units of mean discharge for the routing step defined by the number of steps (NOSTEP) in the time interval; first value must be O
TMPSOH		R*4	NOSOH	Temporary array of storage plus outflow/2 values corresponding to O values but storage may be in units of mean discharge for a different routing time increment than the storage in SOH; routing may be for a portion of the routing time step
ELVLG	Input	R*4	NELVLG	Pool elevations for elevation versus discharge relation for large-board spillway with all boards down
QLG	Input	R*4	NELVLG	Discharge values for ELVLG versus QLG relation
ELVSM	Input	R*4	NELVSM	Pool elevations for elevation versus discharge relation for small board spillway with all boards down
QSM	Input	R*4	NELVSM	Discharge values for ELVSM versus QSM relation
ELVFL	Input	R*4	NELVFL	Pool elevations for elevation versus discharge relation for flood gate spillway with gate fully open
QFLUD	Input	R*4	NELVFL	Discharges corresponding to ELVFL elevations
TOTALQ	Input	R*4	NQGEN	Total discharges for total discharge versus maximum generation discharge relation

Argument	Input/ Output	Type	Dimension	Description
QGEN	Input	R*4	NQGEN	Maximum generation discharges for TOTALQ versus QGEN relation; NQGEN must be zero if this relation is not used
STOR	Input	R*4	NSE	Pool storages for elevation versus storage relation
ELEV	Input	R*4	NSE	Elevations for elevation versus storage relation