VIII.3.3-API-CIN CINCINNATI (OHRFC) API-RUNOFF OPERATION

Identifier: API-CIN

Operation Number: 33

Developed by: Ohio River Forecast Center

Parameter Array: The FORTRAN identifier used for the parameter array is PO. The contents of the PO array are:

Position	Type	Contents
1	I*4	Operation version number
2-7	R*4	Runoff zone name
8	I*4	Runoff zone number
9	I*4	Alternate runoff zone number
10	I*4	Latitude of runoff zone (units of DDMM)
11	I*4	Longitude of runoff zone (units of DDMM)
12	R*4	AI adjustment factor (in tenths)
13	I*4	Data time interval of rainfall/melt, runoff and temperature time series (units of HR)
14-15	R*4	Internal identifier of rainfall/melt time series
16	R*4	Data type code of rainfall/melt time series
17-18	R*4	Internal identifier of runoff time series
19	R*4	Data type code of runoff time series
20-21	R*4	Internal identifier of water-equivalent time series
22	R*4	Data type code of water-equivalent time series
23-24	R*4	Internal identifier of temperature time series
25	R*4	Data type code of temperature time series
26	R*4	Synthetic temperature adjustment factor (in tenths)
27	R*4	Precipitation recession factor (in hundredths)

Position	Type	Contents
28	R*4	API recession factor--no snow (in hundredths)
29	R*4	API recession factor with snow (in hundredths)
30	R*4	Water equivalent criteria above which to use API recession factor with snow (in hundredths)
31	I*4	Initial carryover input read/no read flag
32-33	R*4	Internal identifier of API time series
34	R*4	Data type code of API time series
35-36	R*4	Internal identifier of AI time series
37	R*4	Data type code of AI time series
38-42	I*4	Not used (zeros)

Carryover Array: The FORTRAN identifier used for the carryover array is CO. The contents of the CO array are:

Position	Type	Contents
1	R*4	Storm period counter
2	R*4	Storm total rainfall/melt (hundredths of an inch)
3	R*4	Storm AI value, adjusted (in tenths)
4	R*4	Storm total runoff (hundredths of an inch)
5	R*4	Current API value (hundredths of an inch)
6	R*4	Current AI value, adjusted (in tenths)
7	R*4	Current water equivalent (hundredths of an inch)
8	R*4	24 hour rainfall/melt ending at 12Z (hundredths of an inch)
9	R*4	Average temperature (units of tenths of DEGF)
10	R*4	Current uncorrected synthetic temperature (units of tenths of DEGF)
11	R*4	Current corrected synthetic temperature (units of tenths of DEGF)

Subroutines Names and Functions: Subroutines associated with this Operation are:

Subroutine	Function
PIN33	Input cards and store values in PO and CO arrays
PRP33	Print information in PO array
PRC33	Print information in CO array
EX33	Execute the Operation
FCRO33	Cincinnati rainfall/runoff relationship
FCAI33	Cincinnati API/AI relationship
COX33	Perform carryover transfer
PUC33	Punch cards with information from PO and CO arrays which may be used by the PIN routine
TAB33	Make entry into Operations Table

Subroutines PIN33, PRP33, PRC33, COX33 and PUC33 have the standard argument lists for these routines as described in section VIII.4.3.

SUBROUTINE EX33 (PO,CO,PX,RO,WE,TE,CURAPI,CURAI)

Function: This is the execution subroutine for Operation API-CIN.

Argument List:

Variable	Input/ Output	Type	Dimension	Description
PO	Input	R*4	42	Contains parameters and other information
CO	Both	R*4	8	Contains carryover data
PX	Input	R*4	Variable	Rainfall/melt time series data
RO	Output	R*4	Variable	Runoff time series data
WE	Input	R*4	Variable	Water-equivalent time series data
TE	Input	R*4	Variable	Temperature time series data
CURAPI	Output	R*4	Variable	Current API time series
CURAI	Output	R*4	Variable	Adjusted storm AI time series

SUBROUTINE TAB33 (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,LWORK,IDT)

Function: This is the Operations Table entry subroutine for Operation API-CIN.

Arguments List: The arguments for this subroutine are similar to the arguments for the Operations Table entry subroutines for other Operations. A description of the arguments is contained in Section VIII.4.2-TAB.

Operation Table Array: The contents of the TO array are:

Position	Contents
1	Operation number
2	Location in the T array of the next Operation to be executed
3	Location of the parameter array for the Operation in the P array
4	Location of the carryover array for the Operation in the C array
5	Location of rain/melt data in the D array
6	Location of temperature data in the D array
7	Location of water-equivalent data in the D array
8	Location of runoff data in the D array
9	Location of API data in the D array: 0 = no API output
10	Location of AI data in the D array: 0 = if no AI output