**List of Changes to CalLite Code by Z.Q. Richard Chen 6/20/2011**

Major changes:

1. X2 Roe trigger is turned off when user defined X2 switch is selected in Options\_Switches.wresl
2. daysX2\_roe is set to be the total days of the month when the user defined X2 is activated for that month in X2days\_FWS\_WQ.wersl
3. corrections are made to daysX2\_roe\_mod and daysX2\_chs\_mod in X2days\_FWS\_WQ.wersl
4. Based on Nancy’s comment on the NMFS action 4.1.2 which results a NMFS\_days\_open and it should affect the delta flows. In order to do this, a condition is added to WQCP\_days\_open to let it equals to NMFS\_days\_open when NMFS action 4.1.2 is on. xc-gatesNMFS.wresl, Reduced\_Calls.wresl, main\_BO.wresl, NMFS\_SALMON\_BO.DCC.wresl, and xc-gates.wersl are modified.

Edit NMFS\_SALMON\_BO\_DCC.wresl

Added switch conditional in order to disable BO DCC actions when User Defined DCC is select in following goal statement

define NMFS\_MaxExp\_DCC {

**case UDdefDCC {**

**condition DCC\_DLTSW == 2**

**value 999999.**

**}**

…

}

Edit xc-gates.wresl

Added month conditionals to following goal statements

define WQCP\_days\_open {

**~~case D1641 {~~**

**~~condition DCC\_DLTSW == 1~~**

**~~select days\_open from xchanneldays where month=month}~~**  case USERDEF {

condition DCC\_DLTSW == 2

select days\_open

from gui\_xchanneldays

where month=month}

**case D1641 {**

**condition DCC\_DLTSW == 1**

**select days\_open from xchanneldays where month=month}**  case NOREGULATION {

condition always

value 0}

}

Create a new xc-gatesNMFS.wresl based on xc-gates.wresl and put it after BO codes in cycle 2 with the following changes:

**define WQCP\_days\_open {**

**~~case D1641 {~~**

**~~condition DCC\_DLTSW == 1~~**

**~~select days\_open from xchanneldays where month=month}~~**  case USERDEF {

condition DCC\_DLTSW == 2

select days\_open

from gui\_xchanneldays

where month=month}

**case NMFSBO\_A412 {**

**condition Action\_4\_1\_2==1**

**value NMFS\_days\_open }**

**case D1641 {**

**condition DCC\_DLTSW == 1**

**select days\_open from xchanneldays where month=month}**

case NOREGULATION {

condition always

value 0}

}

Edit Delta\_Reduced\_Calls.wresl to comment out xc-gates.wresl

**!**Include 'xc-gates.wresl'

Add a new line in main\_bo.wresl

INCLUDE [LOCAL] 'Export\_Ops\NMFS\_SALMON\_BO\_DCC.wresl'

**INCLUDE [LOCAL] 'Delta\xc-gatesNMFS.wresl'**

INCLUDE [LOCAL] 'Export\_Ops\NMFS\_SALMON\_BO\_Def.wresl'

Edit Options\_Switches.wresl

Add a contition to turn off X2ROE trigger when user defined X2 switch is selected in the following define statements

**define X2ROE\_DLTSW {**

**case UDefX2 {**

**condition X2\_DLTSW == 2**

**value 0 }**

**case others {**

**condition always**

select OPTION from gui\_D1641Regs where Index = 6}

**}**

Edit X2days\_FWS\_WQ.wresl

Define new X2 switchs in the following define statements

**define X2Udef\_Select {**

**case X2\_Udef {**

**condition X2\_DLTSW == 2**

**select X2Active from GUI\_X2Active where month=month}**

**case otherwise {**

**condition always**

**value 0}**

**}**

Split contitions in the following define statements

define flowcap\_chs { ! cfs for Chipps Island

case FebtoJun {

condition month >= FEB .and. month <= JUN

value 11400. }

case AUG\_FWS {

condition month == AUG .and. FallX2 == 1

value 11400. }

case SEP**~~OCT~~** {

condition month == SEP .**~~or. month == OCT .~~**and. FallX2 == 1

**value 99999. }**

**case OCT {**

**condition month == OCT .and. FallX2 == 1**

value 99999. }

….}

define flowcap\_cnf { ! cfs for Confluence (Sac & SJR)

case FebtoJun {

condition month >= FEB .and. month <= JUN

value 7100. }

case AUG\_FWS {

condition month == AUG .and. FallX2 == 1

value 7100. }

case SEP**~~OCT~~** {

condition month == SEP .**~~or. month == OCT .~~**and. FallX2 == 1

**value 99999. }**

**case OCT {**

**condition month == OCT .and. FallX2 == 1**

value 99999. }

…}

Add user defined switch conditionals to following statements

define daysX2\_roe {

**case Udef {**

**condition X2Udef\_Select == 1**

**value daysin }**

case FebtoJun {

condition month >= FEB .and. month <= JUN

select roe\_days

from x2days

where wateryear=wateryear,month=month }

case StandardOff {

condition always

value 0. }

}

define daysX2\_chs {

**case Udef {**

**condition X2Udef\_Select == 1**

**value 0 }**

case FebtoJun {

condition month >= FEB .and. month <= JUN

select chs\_days

from x2days

where wateryear=wateryear,month=month }

….}

define daysX2\_cnf {

**case Udef {**

**condition X2Udef\_Select == 1**

**value 0 }**

case FebtoJun {

condition month >= FEB .and. month <= JUN

select cnf\_days

from x2days

where wateryear=wateryear,month=month }

….}

Correct the X2 Roe Trigger switch conditionals to following statements

define daysX2\_roe\_mod {

case RoeTrigOutofSeason**Jan** {

condition month <= JAN .**~~or. month >= JUL .~~**and. FallX2 == 1 ! If outside D1641 standard X2 season don't do this adjustment

value 0. }

case **~~RoeOff~~RoeTrigOutofSeasonJul** {

condition **~~x2\_last > trigger\_x2roe .or. int(X2Roe\_DLTSW) ==0~~month >= JUL .and. FallX2 == 1 ! If outside D1641 standard X2 season don't do this adjustment**

**value 0. }**

**case RoeOff\_TriggerOn {**

**condition x2\_last > trigger\_x2roe .and. int(X2Roe\_DLTSW) ==1**

value 0. }

case RoeOn {

condition always

value daysX2\_roe }

}

define daysX2\_chs\_mod {

case RoeTrigOutofSeason**Jan** {

condition month <= JAN .**~~or. month >= JUL .~~**and. FallX2 == 1 ! If outside D1641 standard X2 season don't do this adjustment

value daysX2\_chs }

case **~~RoeOff~~RoeTrigOutofSeasonJul** {

condition **~~x2\_last > trigger\_x2roe .or. int(X2Roe\_DLTSW) ==0~~month >= JUL .and. FallX2 == 1 ! If outside D1641 standard X2 season don't do this adjustment**

**value daysX2\_chs }**

**case RoeOff\_TriggerOn {**

**condition x2\_last > trigger\_x2roe .and. int(X2Roe\_DLTSW) ==1**

value daysX2\_chs }

case RoeOn {

condition always

value daysX2\_chs - daysX2\_roe}

}

Hao’s update to ExtraWaterNeeded.wresl

define ExtraWater\_RioVista**~~\_pre~~**{lower unbounded upper unbounded kind 'ExtraWater' units 'cfs'}

goal ExtraWaterRioVista {**~~ExtraWater\_RioVista\_pre=RioVista\_SWRCB\_DV(-1)-C\_SACRV(-1)~~ExtraWater\_RioVista=RioVista\_SWRCB\_DV-C\_SACRV**}

define ExtraWater\_NDO**~~\_pre~~**{lower unbounded upper unbounded kind 'ExtraWater' units 'cfs'}

goal ExtraWaterNDO {**~~ExtraWater\_NDO\_pre=NDO\_SWRCB\_DV(-1)-C\_Delta(-1)~~ExtraWater\_NDO=NDO\_SWRCB\_DV-C\_Delta**}

define ExtraWater\_SJR**~~\_pre~~**{lower unbounded upper unbounded kind 'ExtraWater' units 'cfs'}

goal ExtraWaterSJR {**~~ExtraWater\_SJR\_pre=SJR\_SWRCB\_DV(-1)-AD\_SJR(-1)~~ExtraWater\_SJR=SJR\_SWRCB\_DV-AD\_SJR**}

Hao’s update to Init DSS files is also incorporated