CalLite Code edits to implement the VAMP export constraint on/off switch.

Edit April\_May\_MaxExport.wresl

Added switch conditional to following goal statement

goal Limit\_Exports {

lhs ExportActual

case APR\_MAY {

condition **~~month == APR .or. month ==MAY~~VAMP\_DLTSW == 1 .and. range(month,apr,may)**

rhs AprMayExpCtrl

lhs<rhs penalty 0 }

}

Added month conditionals to following goal statements

goal Export\_limit\_D\_Jones { ! Prevents Non-Pulse portion of month from being greater than Physical Capacity

lhs D\_Jones /\*\* Need to change to D\_Jones\_TD for IF implementation \*\*/

case no\_vamp { !Richard Chen added for VAMP switch

condition VAMP\_DLTSW == 0 **.and. range(month,apr,may)**

rhs JonesCapPermit

lhs<rhs penalty 0 }

case April {

condition month == APR .or. month == MAY

rhs AprMayJonesCtrl

lhs<rhs penalty 0 }

}

goal Export\_limit\_D\_Banks { ! Prevents Non-Pulse portion of month from being greater than Physical Capacity

lhs D\_Banks

case no\_vamp { !Richard Chen added for VAMP switch

condition VAMP\_DLTSW == 0 **.and. range(month,apr,may)**

rhs BanksCapPermit

lhs<rhs penalty 0 }

case April {

condition month == APR .or. month == MAY

rhs AprMayBanksCtrl

lhs<rhs penalty 0 }

}

Edit COA.wresl

Added VAMP switch conditional to CVP/SWP export balancing logic

goal AprMay\_split\_swp {

lhs D\_Banks\_EXP1

case AprMay {

condition **~~month==APR .or. month==MAY~~range(month,apr,may) .and. VAMP\_DLTSW == 1**

rhs 0.5\*AprMayExpCtrl

lhs>rhs penalty 1290

lhs<rhs penalty 0

}

}

goal AprMay\_split\_cvp {

lhs D\_Jones\_EXP1

case AprMay {

condition  **~~month==APR .or. month==MAY~~range(month,apr,may) .and. VAMP\_DLTSW == 1**

rhs 0.5\*AprMayExpCtrl

lhs>rhs penalty 1290

lhs<rhs penalty 0

}

}

Edit B2BanksFix.wresl

Add VAMP switch conditionals to following goal statements

goal fixBanksDuringB2Actions {

lhs D\_Banks\_swp

case fixBanks\_B2Action2On {

condition int(B2Action2On)==1

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action3On {

condition month>=APR .and. month<=MAY .and. int(B2Action3On)==1 **.and. VAMP\_DLTSW == 1**

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action4On {

condition month==MAY .and. int(B2Action4On)==1

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action5On {

condition month==JUN .and. int(B2Action5On)==1

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action6On {

condition month==APR .and. int(B2Action6On)==1

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action7On {

condition month>=FEB .and. month<=MAR .and. int(B2Action7On)==1

rhs D\_Banks\_swp[Base]

lhs<rhs penalty 0 }

}

goal fixBanksOroDuringB2Actions {

lhs D\_Banks\_EXP2

case fixBanks\_B2Action2On {

condition int(B2Action2On)==1

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action3On {

condition month>=APR .and. month<=MAY .and. int(B2Action3On)==1 **.and. VAMP\_DLTSW == 1**

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action4On {

condition month==MAY .and. int(B2Action4On)==1

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action5On {

condition month==JUN .and. int(B2Action5On)==1

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action6On {

condition month==APR .and. int(B2Action6On)==1

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

case fixBanks\_B2Action7On {

condition month>=FEB .and. month<=MAR .and. int(B2Action7On)==1

rhs D\_Banks\_EXP2[Base]

lhs<rhs penalty 0 }

}

Edit wheelcap.wresl

Add switch to prevent CVP wheeling through Banks when VAMP is limiting exports.

**define B2Action3\_Ctrl {**

**case controlling {**

**condition range(month,apr,may) .and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

**value 0.**

**}**

**case otherwise {**

**condition always**

**value 1.**

**}**

**}**

!define wheeling\_ctrl {value min(BO\_Banks\_Ctrl, BO\_Jones\_Ctrl, OMR\_Ctrl)}

define wheeling\_ctrl {value min(BO\_Banks\_Ctrl, OMR\_Ctrl**, B2Action3\_Ctrl**)}

define whlctrl\_dv {alias wheeling\_ctrl kind 'output' units 'cfs'}

define BOBanksCtrl\_dv {alias BO\_Banks\_Ctrl kind 'output' units 'cfs'}

define BOJonesCtrl\_dv {alias BO\_Jones\_Ctrl kind 'output' units 'cfs'}

define BOOMRCtrl\_dv {alias OMR\_Ctrl kind 'output' units 'cfs'}

**define B2Action3\_ctrl\_ {alias B2Action3\_Ctrl kind 'output' units 'none'}**

Edit B2Action3.wresl

Add VAMP switches to the B2Action3 constraints. Add VAMP constraints on SWP exports. These were previously implemented in the OMR code. Since OMR could be turned off, the constraints had to be implemented where only the VAMP switch could turn it off and on.

!\*\*\*\* VAMP Export Reductions (Apr15-May15) \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! Monthly VAMP export restriction for CVP

goal b2action3\_1 {

lhs D\_Jones\_cvp + D\_Banks\_cvp

case Apr {

condition month==APR .and. int(B2Action3On)==1 **.and. VAMP\_DLTSW == 1**

rhs NonPulseExpCtrl\*0.5\*14.0/daysin + PulseExpRes\*0.5\*16.0/daysin

lhs<rhs penalty 0 }

case May {

condition month==MAY .and. int(B2Action3On)==1 **.and. VAMP\_DLTSW == 1**

! rhs NonPulseExpCtrl\*0.5\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin

rhs 3000.\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin

lhs<rhs penalty 0 }

}

goal b2action3\_MaxCap { ! Prevents Non-Pulse portion of month to be greater than Physical Capacity

lhs D\_Jones\_cvp + D\_Banks\_cvp

case April {

condition month == APR **.and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

rhs JonesCapPermit\*14.0/daysin + PulseExpRes\*0.5\*16.0/daysin

lhs<rhs penalty 0 }

case May {

condition month == MAY **.and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

rhs JonesCapPermit\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin

lhs<rhs penalty 0 }

}

**! Monthly VAMP export restriction for SWP**

**goal b2action3\_1\_swp {**

**lhs D\_Banks\_swp**

**case Apr {**

**condition month==APR .and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

**rhs NonPulseExpCtrl\*0.5\*14.0/daysin + PulseExpRes\*0.5\*16.0/daysin**

**lhs<rhs penalty 0 }**

**case May {**

**condition month==MAY .and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

**! rhs NonPulseExpCtrl\*0.5\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin**

**rhs 3000.\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin**

**lhs<rhs penalty 0 }**

**}**

**goal b2action3\_MaxCap\_swp { ! Prevents Non-Pulse portion of month to be greater than Physical Capacity**

**lhs D\_Banks\_swp**

**case April {**

**condition month == APR .and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

**rhs BanksMaxAllow\*14.0/daysin + PulseExpRes\*0.5\*16.0/daysin**

**lhs<rhs penalty 0 }**

**case May {**

**condition month == MAY .and. int(B2Action3On)==1 .and. VAMP\_DLTSW == 1**

**rhs BanksMaxAllow\*16.0/daysin + PulseExpRes\*0.5\*15.0/daysin**

**lhs<rhs penalty 0 }**

**}**