10 Annex B - Savannah River Basin Comprehensive Study II: HEC-ResSim Model

The next 163 screen shots were included for a basic understanding of the elements that go into the configuration of HEC-ResSim, and each alternative's associated rules and priorities.



Annex B - Screen 1 (Basin Diagram)

Reservoir Editor - Network: NAA	0:Daily Operations	m			
servoir <u>E</u> dit					
eservoir Hartwell	Description				H 4 2 of 6 D
hysical Operations Observed	1 Data				
Hartwell	Hartwell				
tt Evaporation	Composite Release Capacity				
Hartwell Dam	Elevation (ff)	Controlled (cfs)	Uncontrolled (cfs)	Total (cfs)	
Gated Spillway	625.0	27,500.0	0.0	27,500.0	670-
Power Plant	630.0	28,678.6	0.0	28,678.6	€ 660-
	640.0	81,039.7	0.0	81,039.7	<u><u> </u></u>
	650.0	188,396.9	0.0	127,210.3	<u>8</u> 640
	653.0	229,100.0	0.0	229,100.0	□ 630- /
	655.0	259,571.4	0.0	259,571.4	620 620
	657.0	288,038.9	0.0	288,038.9	0 400,000
	660.0	337,754.0	0.0	337,754.0	Flow (cfs)
	662.0	370,916.5	0.0	370,916.5	
	665.0	426,156.2	0.0	426,156.2	
	668.0	481,400.0	0.0	402,310.0	
	670.0	519,400.0	0.0	519,400.0	
	672.0	558,400.0	0.0	558,400.0	
	6/4.0	599,404.0	0.0	599,404.0	-
					-
					-
					-
					1
					Label Position: NORTH
				-	
					OK Cancel App

Annex B - Screen 2 (Hartwell Physical Attributes)

Edit	and a provide the product of the provide the providet the providet the providet the providet the providet the prov			_	
ir Russell	Description				
Operations Observe	ed Data				
001	Russell				
Evaporation	Composite Release Capacity				
🖞 Tailwater	Elevation (ft)	Controlled (cfs)	Uncontrolled (cfs)	Total (cfs)	490
Gated Spillway	436.0	50,000.0	0.0	50,000.0	€ 480
Pump	450.0	140,000.0	0.0	140,000.0	g 470
	460.0	270,000.0	0.0	270,000.0	E 460-
	470.0	430,400.0	0.0	430,400.0	ū 440-
	472.0	469,440.0	0.0	469,440.0	430 ++++++++++++++++++++++++++++++++++++
	474.0	505,480.0	0.0	505,480.0	0 600,000
	476.0	545,400.0	0.0	545,400.0	Flow (cfs)
	478.0	589,200.0	0.0	589,200.0	
	480.0	637,000.0	0.0	637,000.0	
	484.0	722,000.0	0.0	722,000.0	
	486.0	767,000.0	0.0	767,000.0	
	488.0	817,000.0	0.0	817,000.0	
					Label Position: NORTH

Annex B - Screen 3 (Russell Physical Attributes)

Thurmond Cal Operations Observe Minimone Pool Cal Constant Cal Constant Constant Constant Constant Constant Constant Constant Constant Constant	Description dData Thurmond Composite Release Capacity Elevation (f) 300.0 305.0 310.0	Controlled (cfs) 37,000,0			
Cal Operations Observe mononel Pool Evaporation Thurmond Dam Ogated Spillway Power Plant	ad Data Thurmond Composite Release Capacity Elevation (f) 300.0 305.0 310.0	Controlled (cfs) 37,000,0			
Cal Operations Observe urmonet Pool ↓ Evaporation Thurmond Dam \Thatiwater ⊕ Gated Spillway ✓ Power Plant	ed Data Thurmond Composite Release Capacity Elevation (ft) 300.0 305.0 310.0	Controlled (cfs) 37,000.0			
Pool	Thurmond Composite Release Capacity Elevation (ft) 300.0 305.0 310.0	Controlled (cfs)			
Caporation Thurmond Dam Tailwater Gated Spillway Power Plant	Composite Release Capacity Elevation (ft) 300.0 305.0 310.0	Controlled (cfs)			
tailwater Gated Spillway ✓ Power Plant	Elevation (ft) 300.0 305.0 310.0	Controlled (cfs) 37,000.0			250
Gated Splitway Power Plant	305.0	37,000.01	Uncontrolled (cfs)	Total (cfs)	340-
	310.0	64,002.0	0.0	64,002.0	€ 330-
		132,370.1	0.0	132,370.1	§ 320-
	312.0	219,686.5	0.0	219,686.5	a 310-
	320.0	320,003.0	0.0	320,003.0	300-
	325.0	443,257.0	0.0	443,257.0	
	335.0	726,999.0	0.0	726,999.0	Elow (ofo)
	340.0	894,002.0	0.0	894,002.0	FIUW (CIS)
	345.0	1,063,995.0	0.0	1,063,995.0	
					Label Position: NORTH

Annex B - Screen 4 (Thurmons Physical Attributes)



Annex B - Screen 5 (Hartwell Elevation-Storage-Area Attributes)



Annex B - Screen 6 (Russell Elevation-Storage-Area Attributes)



Annex B – ResSim Model

Reservoir Edit Pool



Annex B - Screen 7 (Thurmond Elevation-Storage-Area Attributes)

Reservoir Editor - Network: NA/	AO:Daily Operations				
Reservoir Edit Tailwater					
Reservoir Hartwell	▼ Description	K A 2 of B H			
Physical Operations Observe	d Data				
A Hartwell	Hartwell-Hartwell Dam-Tailwater				
Hartvell Dam Hartvell Dam Cated Spillway Power Plant	Use Highest Elevation From: Constant Elevation (ft) Constant Elevation (ft) Constant Clevation (Russell Rating Curve Simple Rating Concerning Rating Function Constants Of	•			
	Fundton Of Simple Rating Curve				
	Flow (ds) 0.0 15000.0 44000.0 9000.0 14500.0 213000.0 28500.0 381000.0 38100.0 574000.0 57400.0	Stage (ft) 475.0 485.0 495.0 495.0 500.0 500.0 500.0 510.0 510.0 520.0 520.0 Flow (cfs)			
	Stage Datum (ft)	0.0			
		OK Cancel Apply			

Annex B - Screen 8 (Hartwell Tailwater Rating Curve)

Reservoir Editor - Network: NAA	0:Daily Operations	
Reservoir Edit Tailwater		
Reservoir Russell	Description	"INALS OF BH
Physical Operations Operation	1 Poto	
Russell	Puesall Russell Dem Teiluster	
Pool	Russen-Russen Danier anwater	
	Use Highest Elevation From:	
	Downstream Control Thurmond	•
	Rating Curve	
	Simple Rating Rating Function	
	Function Of: Simple Rating Curve	Define
	Flow (cfs)	Stage (ft) 260 250
	0.0	183.0 * 240
	35000.0	195.0 E 230
	95000.0	200.0 8 210-
	150500.0	210.0 190
	440000.0	230.0 0 400,000 800,000
	875000.0	240.0 Flow (cfs)
		*
	Stage Datum (ft)	0.0
		OK Cancel Apply

Annex B - Screen 9 (Russell Tailwater Rating Curve)

Reservoir Editor - Network: NAJ	O:Daily Operations	
Reservoir Edit Tailwater		
Reservoir Thurmond		H (8108 (B) H
Physical Operations Observe	Data	
Thurmond	Thurmond-Thurmond Dam-Tailwater	
Evaporation	Use Highest Elevation From:	
Thurmond Dam Thurmond Dam Sate Spillway Power Plant	Constant Elevation (ft)	
	Downstream Control	
	Rating Curve	
	 Simple Rating Rating Function 	
	Function Of: Simple Rating Curve	Define
	70000	260
	Flow (ds)	187.0 + 250- 187.0 + 240-
	15000.0	190.0 200.0 € 230-
	155000.0	210.0
	44000.0	220.0 05 200-
	64000.0 87000.0	240.0 180
		Flow (cfs)
		*
	Stage Datum (ft)	0.0
		OK Cancel Apply

Annex B - Screen 10 (Thurmond Tailwater Rating Curve)

Reservoir Editor - Network: NA	AAO:Daily Operations			
servoir <u>E</u> dit Outlet				
eservoir Hartwell	Description			. H 4 2 of 6 D
hysical Operations Observe	ed Data			
Hartwell Pool the Evaporation Hartwell Hartwell Tailwater Grant Sprillware	Hartwell-Hartwell Dam-Gated Spillway			
	Number of Cotes of this time		12	
	Elevation	Hay Canacity	Total May	
	(ft)	(cfs)	Capacity	670-
Power Plant	630.0	0.0	0.0	660
	640.0	4167.0	50004.0	€ 850-
	650.0	12917.0	155004.0	
	653.0	16250.0	195000.0	- 640-
	657.0	21083.0	225000.0 252996.0	630-
	658.0	22333.0	267996.0	0 15,000 30,000 45,000
	660.0	25167.0	302004.0	Capacity (cfs)
	665.0	32500.0	390000.0	
	667.0	35500.0	426000.0	
	672.0	40250.0	483000.0 522000.0	
	674.0	46917.0	563004.0	
	Division Contraction			
	Physical Limitations:			
	Max Rate of Discrease (cfs/hr)			Edit Gate Settings

Annex B - Screen 11 (Hartwell Gate Capacity Curve)

servoir <u>E</u> dit Outlet				
eservoir Russell	Description			H A 5 of 6 P
husiaal o n				
Constant Server Server Constant Server Constant Server Serv	ed Data			
	Russen-Russen Dam-Galed Spinway		10	
	Number of Gates of this type	1	10	
	Elevation (ft)	Max Capacity (cfs)	Total Max Capacity	490
Power Plant	436.0	0.0	0.0	480
B Pump	440.0	1200.0	12000.0	€ 470-
	450.0	9000.0	90000.0	à 460-
	470.0	37800.0	378000.0	ш 450-
	472.0	41600.0	416000.0	440
	474.0	45100.0	451000.0	430 430 0000 0000 0000
	478.0	53300.0	533000.0	0 50,000 00,000 90,00
	480.0	58000.0	580000.0	Capacity (cis)
	482.0	66500.0	665000.0	
	486.0	71000.0	710000.0	
	488.0	76000.0	760000.0	
	430.0	01000.0	010000.0	
	2			
	Physical Limitations:			
	Max Rate of Increase (cfs/hr)			
				Edit Gate Settings

Annex B - Screen 12 (Russell Gate Capacity Curve)

🟹 Reservoir Editor - Network: NA	A0:Daily Operations	_		
Reservoir Edit Outlet				
Reservoir Thurmond	Description			
Physical Operations Observe	ed Data			
A Thurmond	Thurmond-Thurmond Dam-Gated Spillway			
to Evaporation	Number of Gates of this type		23	
E Thurmond Dam	Elevation	Max Capacity	Total Max	350
Gated Spillway	(ft)	(cfs)	Capacity	340-
Power Plant	300.0	0.0	0.0	330-
	310.0	4131.0	95013.0	€ 320-
	315.0	7913.0	181999.0	8 010
	320.0	12261.0	282003.0 405007.0	310
	330.0	23696.0	545008.0	300-
	335.0	29913.0	687999.0	0 15,000 30,000 45,000
	345.0	44565.0	1024995.0	Capacity (cfs)
	Dhysical Limitatione:			
	May Date of Increases (cfc/br)			
	Max Isale of Increase (cfs/in)			Edit Gate Settings
L	maxivate of Decrease (usini)			Contraction of the second second
				OK Cancel Apply

Annex B - Screen 13 (Thurmond Gate Capacity Curve)

manwen	- Description			
Physical Operations Observe	ved Data			
Pool	Hartwell-Hartwell Dam-Power Plant			
Evaporation	Outlet Capacity Efficiency Station Use Hyd. Losses			
Tailwater	Number of Gates of this type			
Gated Spillway	Elevation	Max Capacity	Total Max	670
Hower Hall	(ff)	(cfs)	Capacity	860-
	625.0	27500.0	27500.0	000
	668.0	35750.0 36400.0	35750.0 36400.0	€ 550
				± 640
				630-
				620
				0 15,000 30,000
				Capacity (cfs)
	Physical Limitations:			
	Physical Limitations: Max Rate of Increase (cfs/hr)			

Annex B - Screen 14 (Hartwell Power Plant Outflow Capacity)

voir Russell	Description					
Physical Operations Observe	ved Data					
Russell Pool	Russell-Russell Dam-Power Plant					
	Outlet Capacity Efficiency Station Use Hvd. Losses	Ortflet Consetty Efficiency Station Lies Live Loscae				
Russell Dam 10 Tailwater	Number of Gates of this type	Number of Gales of this type 1				
Gated Spillway	Elevation	Max Capacity	Total Max			
Pump Pump	(ft) 465.0	(cfs) 50000.0	Capacity 50000 0	480-		
	470.0	52400.0	52400.0	€ 476		
	475.0 480.0	57000.0	57000.0	a 472		
				468		
				464		
				0 20,000 40,000 60,00 Canacity (cfs)		
				a shared (see)		
	Physical Limitations:					
	Physical Limitations: Max Rate of Increase (cfs/hr)			Edit Gate Settings		

Annex B - Screen 15 (Russell Power Plant Outflow Capacity)

Reservoir Editor - Network: NA	A0:Daily Operations			
Reservoir Edit PowerPlant				
Reservoir Thurmond	Description			H A 6 of 6 P H
Physical Operations Observe	ed Data			
A Thurmond	Thurmond-Thurmond Dam-Power Plant			
	Outlet Capacity Efficiency Station Use Hyd. Losses			
Tailwater	Number of Gates of this type			
Gated Spillway	Elevation	Max Capacity	Total Max	340
	(ft) 305.0	(cfs) 37000.0	Capacity 37000.0	335-
	312.0	37500.0	37500.0	e 325-
	320.0	38000.0 38500.0	38000.0 38500.0	± 315-
	335.0	39000.0	39000.0	310-
				300
				0 15,000 30,000
				Capacity (cits)
	Physical Limitations:			
	Max Rate of Decrease (cfs/hr)			Edit Gate Settings
-				OK Cancel Apply

Annex B - Screen 16 (Thurmond Power Plant Outflow Capacity)

arvoir Hartwell	<u>D</u> escription					
sical Operations Obser	ved Data					
Hartwell	Hartwell-Hartwell Dam-	Power Plant				
	Outlet Capacity Eff	Outlet Capacity Efficiency Station Lise Hyd Losses				
	Installed Capacity (MV	V)			4	
Gated Spillway	Variable Capacity:	Function of Operating Head				
		Head (ft)	Capacity (MW)		190	
		145.00		337.00 *	180	
		187.00		495.00	E 170	
					T 150	
					140	
					360 420 480	
					Capacity (MW)	
				(+		

Annex B - Screen 17 (Hartwell Power Plant Generation Capacity)

Reservoir Editor - Network: NA	A0:Daily Operations					
Reservoir Edit PowerPlant						
Reservoir Russell	Description					
Dhualast la un las						
Physical Operations Observ	ed Data					
Pool	Russell-Russell Dam-Power Plant					
Evaporation	Outlet Capacity Efficiency Station Use Hyd. Losses					
Tailwater	Installed Capacity (MW)	888				
Power Plant	Variable Canacity					
Pump	Tuncion of operating riead					
	Head (ft)	Capacity (MW)				
	139.00	596.48 × 160 626.32 - 155				
	151.00	650.24 0 150-				
	157.00	715.84 9 145				
		600 640 680 720				
		Capacity (MW)				
		+				
C						
		UK Cancel Apply				

Annex B - Screen 18 (Russell Power Plant Generation Capacity)

Reservoir Editor - Network: ALT10:Daily Operation	15		×
Reservoir Edit Operations			
Reservoir Keowee			
Physical Operations Observed Data			
Operation Set Daily Operations	Description		
Zone-Rules Rel. Alloc. Outages Stor Gredif Dec	Sched Projected El	eV	
Release Allocation Strategy Keowee - Sequential	Release Location:	Keowee	
Keowee-Diverted Outlet - Sequential	Allocation Type:	Sequential	.
Keowee-Power Plant	Keowee-Diverted Keowee-Keowee	Outlet Dam	
		ОК	Cancel Apply

Annex B - Screen 19 (Keowee Release Allocation)

Annex B – ResSim Model

Reservoir Editor - Network: ALT10:Daily Operati	ons		×
Reservoir Locassee Description Physical Operations Observed Data Operation Set Daily Operations Zone-Rules Rel. Alloc. Outgoes Stor Gred Daily Daily Daily Description Physical Description <lidescription< li=""> Description <lid< th=""><th>Description Removed</th><th>tandem in Con pool, a</th><th>and replaced with Keowe</th></lid<></lidescription<>	Description Removed	tandem in Con pool, a	and replaced with Keowe
Release Allocation Strategy	Release Location: Allocation Type: Jocassee-Jocas	Jocassee Sequential see Dam	
		ок [Cancel Apply

Annex B - Screen 20 (Jocassee Release Allocation)

Annex B – ResSim Model

💙 Reservoir Editor - Network: ALT10:Daily Operati	ons			×
Reservoir Edit Operations				
Reservoir Hartwell				2 of 6 1 H
Physical Operations Observed Data		_		
Operation Set Daily Operations	Description Current tri	gger Levels		
Zone-Rules Rel. Alloc. Outages Stor Credit De Release Allocation Strategy	20. Sched Projected El	EX		1
Hartwell - Sequential	Release Location:	Hartwell		
Hartwell-Power Plant	Allocation Type:	Sequential		•
		ОК	Cancel	Apply

Annex B - Screen 21 (Hartwell Release Allocation)

Reservoir Editor - Network: ALT10:Daily Operatio	ins		×
<u>R</u> eservoir <u>E</u> dit <u>O</u> perations			
Reservoir Russell		HA	5 of 6 1 H
Physical Operations Observed Data			
Operation Set Daily Operations	Description		
		3	AutoA
Zone-Rules Rel Allocation Strategy	t, soned Projected El	EX	1
Russell - Sequential	Release Location:	Russell	
Russell-Russell Dam - Sequential	Allocation Type:	Sequential	•
Russell-Gated Spillway	Russell-Russell I	Dam	
		OK Cancel	Apply

Annex B - Screen 22 (Russell Release Allocation)

Reservoir Editor - Network: ALT10:Daily Operation	ns	×
Reservoir Edit Operations		
Reservoir Thurmond		f6 D D
Physical Operations Observed Data		
Operation Set Alt-1	Description Opset for Alt 1, Extreme Low Flows	
Zone-Rules Rel. Alloc. Outages Stor Gredit Dec Release Allocation Strategy	: Sched Projected Elev	
Thurmond - Sequential	Release Location: Thurmond	
Thurmond-Power Plant	Allocation Type: Sequential	-
	OK Cancel	Apply

Annex B - Screen 23 (Thurmond Release Allocation)

Reservoir Editor - Network: NAA0:1	Daily Operations		×
Reservoir Edit PowerPlant			
Reservoir Thurmond - D	escription		
Physical Operations Observed Data			
Thurmond Thu	rmond-Thurmond Dam-Power Plant		
Evaporation O	utlet Capacity Efficiency Station Use Hyd. Losses		
Thurmond Dam	stalled Capacity (MW)		402 E
Gated Spillway			402.0
Power Plant Va	ariable Capacity: Function of Operating Head		•]
l Tr	Lipsd (#)	Consolt (UM)	
	114.00	287.00 + 140	
	120.00	294.00 € 140	
	125.00	311.50 329.00	
	135.00	343.00 ± 120	
	140.00	378.00 110	
	148.50	392.00 280 320 3	560 400
		Capacity (N	AVV)
	1	+	
		OK	- Anniv
			1 DREW

Annex B - Screen 24 (Thurmond Power Plant Generation Capacity)



Annex B - Screen 25 (NAA, Thurmond Induced Surcharge Pool Rule Stack)



Annex B - Screen 26 (NAA, Thurmond Flood Pool Rule Stack)



Annex B - Screen 27 (NAA, Thurmond Conservation Pool Rule Stack)



Annex B - Screen 28 (NAA, Thurmond Trigger Level 1 Rule Stack)



Annex B - Screen 29 (NAA, Thurmond Trigger Level 2 Rule Stack)



Annex B - Screen 30 (NAA, Thurmond Trigger Level 3 Rule Stack)



Annex B - Screen 31 (NAA, Thurmond Inactive Pool Definition)



Annex B - Screen 32 (NAA, Thurmond Induced Surcharge Envelope Definition)



Annex B - Screen 33 (NAA, Thurmond IS Pool, Augusta Max Rule)



Annex B - Screen 34 (NAA, Thurmond IS Pool, Thurmond Min 3600 cfs Rule)



Annex B - Screen 35 (NAA, Thurmond IS Pool, Augusta Min 3600 cfs Rule)



Annex B - Screen 36 (NAA, Thurmond Flood Pool, Augusta Min 3600 cfs Rule)


Annex B - Screen 37 (NAA, Thurmond Conservation Pool, Fish Spawn Rule)



Annex B - Screen 38 (NAA, Thurmond Conservation Pool, System Power Rule)



Annex B - Screen 39 (NAA, Thurmond Conservation Pool, Level 1 Bell Gage Rule)



Annex B - Screen 40 (NAA, Thurmond Conservation Pool, Level 2 Bell Gage Rule)

Reservoir Editor - Network: Daily Operations		the second	
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			H d 6 of 6 H
Physical Operations Observed Data			
Ogeration Set NAA	Description)
Zone-Rules Ref. Allon, Outages Stor Credit J	Pec. Schell, Projected Elev		
Induced Surcharge Thurmond IS AugustaMax20-30K	Operates Release From: Thurmond Rule Name: SpecRel-L3-Seasonal	-Thurmond Dam Description:	
Thurmond Min L0	Function of Date		Dofine
Flood Control	Limit Type: Operational	Intern : Oten	3.900
Thurmond IS	Specified	• Step	
Thurmond Min L0	Date	Release (cfs)	3 800
Conservation	01Feb	3800.0	
Thurmond IS AugustaMax20-30K	01Nov	3100.0	3 700-
Thurmond Min L0			5,100
Augustaminsoo			2 600
IF (Pool <= TargetMin) □ ■ IF (Pool <= TargetMin) □ Spawn MaxRel=Inflow			3,600
B ⇒ E (Normal or Flood Control)			2 (202
Weekly System Power			8 3,300
ELSE IF (Drought Lever 1)			8 8 8 9 100
ELSE IF (Drought Level 2) □ □ □ SpecRel-L2 Bell			a 3,400 2
ELSE (Drought Level 3)			3,300
AugustaMax20-30K			
AugustaMin3600 April Fish Spawn Ops_Con			3,200
➡ IF (Pool <= TargetMin)			
{} SystemDroughtOps			3,100
IF (Normal of Flood Control) Weekly System Power			
E-+ ELSE IF (Drought Level 1)			3,000
			Jan May Sep
⇒ ELSE (Drought Level 3)			Period Average Limit Edit
Evel 2			Hour of Day Multiplier
AugustaMax20-30K AugustaMin3600			Day of Week Multiplier Edit
E April Fish Spawn Ops_Con			Rising/Falling Condition
Source and second			Seasonal variation
IF (Normal or Flood Control)			
Weekly System Power ➡ ➡ ELSE IF (Drought Level 1)			
■ SpecRel-L1 Bell			
SpecRel-L2 Bell			
ELSE (Drought Level 3)			
Level 3 AugustaMax20-30K			
- AugustaMin3600			
IF (Pool <= TargetMin)			
SystemDroughtOps			
➡ IF (Normal or Flood Control) ■ Weekly System Power			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
Inactive			
		*	
		٢	OK Cancel Apply
			- 46 (1)

Annex B - Screen 41 (NAA, Thurmond Conservation Pool, Level 3 Rule)



Annex B - Screen 42 (ALT1, Thurmond Induced Surcharge Pool Rule Stack)



Annex B - Screen 43 (ALT1, Thurmond Flood Pool Rule Stack)

Reservoir Editor - Network: Daily Operations		NAME AND ADDRESS.	
eservoir Edit Operations Zone Kule IF_Block	n		
Physical Operations Operand Data			
Operation Set Alt.1	Description Opset for Al	1 Extreme Low Flows	
Zone-Rules Rel Alloc Outanes Stor Credit	Dec Sches Roveded Elev		
A Induced Surcharge	Storage Zone Conservation	Description	
Thurmond IS AugustaMax20-30K	Function of Date	Description	Define
Thurmond Min L0	Data	Top Flouotion (#)	350
Thurmond IS	01Jan	326.0 ×	345
AugustaMax20-30K Thurmond Min L0	150ct	330.0	340-
Conservation	15Dec	326.0	토 330-
			ä 325-
AugustaMin3600			315
☐ { } April Fish Spawn Ops_Con ☐ ➡ IF (Pool <= TargetMin)			310 Jan Mar May Jul Sen Nov
Spawn_MaxRel=Inflow SystemDroughtOps Alt-1			Same and Same Sole 1997
IF (Normal or Flood Control) Thurmond Min L0			
Weekly System Power ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
SpecRel 1800-1500			
AugustaMax20-30K			
B → IF (Pool <= TargetMin)			
IF (Normal or Flood Control)			
Weekly System Power			
SpecRel 3800-3500			
SpecRel 2800-2500			
SpecRel 1800-1500			
AugustaMax20-30K			
SystemDroughtOps Alt-1			
Thurmond Min L0			
➡ ELSE IF (Drought Level 1)			
⇒ ELSE IF (Drought Level 2)			
⇒ ELSE (Drought Level 3)			
Level 3			
April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
Weekly System Power			
SpecRel 3800-3500			
SpecRel 2800-2500			
SpecRel 1800-1500	Zone Sort Elevation		
macuve	Four officies anon		

Annex B - Screen 44 (ALT1, Thurmond Conservation Pool Rule Stack)

🔽 Reservoir Editor - Network: Daily Operations		the second	X
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			H A 6 of 6 IN H
Physical Operations Observed Data			
Operation Set Alt-1	Description Opset for Alt 1, E	xtreme Low Flows	
Zone-Rules Rel, Allac, Outages Star, Gredit D	Vec. Scheol (Projected Elev)		
Induced Surcharge Thurmond IS	Storage Zone Level 1	Description	
AugustaMax20-30K Thurmond Min L0	Function of Date		Define
AugustaMin3600	Date	Top Elevation (ft)	350
Thurmond IS	01Jan 01Apr	324.0 ×	345-
Augustaminazo solt	150ct	326.0	£ 335
Conservation			<u>ه</u> 330
AugustaMax20-30K		-	325- W 220
Thurmond Min L0			320-
□ {} April Fish Spawn Ops_Con □ → IF (Pool <= TargetMin)			310
Spawn_MaxRel=Inflow			Jan mar may Jul Sep Nov
Weekly System Power			
SpecRel 3800-3500			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
Level 1 AugustaMax20-30K			
April Fish Spawn Ops_Con IF (Pool <= TargetMin)			
Spawn_MaxRel=Inflow			
→ IF (Normal or Flood Control) → The Control Control) → The Control Contro Control Control Control Control Contro Control Control Control Co			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2) □ SpecRel 2800-2500			
ELSE (Drought Level 3) ■ SpecRel 1800-1500			
AugustaMax20-30K			
April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
E SystemDroughtOps Art-1 F → IF (Normal or Flood Control)			
Thurmond Min L0			
➡ ➡ ELSE IF (Drought Level 1) ■ SpecRel 3800-3500			
➡ ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
Level 3			
April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
E→ IF (Normal or Flood Control)			
Thurmond Min L0 Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
► → ELSE (Drought Level 3)		*	
Inactive	Zone Sort Elevation		
		-	
			OK Cancel Apply

Annex B - Screen 45 (ALT1, Thurmond Trigger Level 1 Rule Stack)

Reservoir Editor - Network: Daily Operations			
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			
Physical Operations Observed Data			
Operation Set Alt-1	Description Opset for Alt	1, Extreme Low Flows	
Zone-Rules Ref. Allac. Dutages Star Gradif J	Jec. Sches. Projected Elev		
Induced Surcharge	Storage Zone Level 2	Description	
Thurmond IS	Function of Date		Define
AugustaMin3600			250
Flood Control	Date	Top Elevation (ft)	246-
Thurmond IS	01Jan 01Apr	322.0 *	343
Thurmond Min L0	150ct	324.0	- 225
AugustaMin3600	15Dec	322.0	£ 335
Conservation			
AugustaMax20-30K			a 325-
Thurmond Min L0			320-
Augustamin 3600			315
i⊟- ➡ IF (Pool <= TargetMin)			310
Spawn_MaxRel=Inflow			San war way Sur Sep 1464
Thurmond Min L0			
ELSE IF (Drought Level 1)			
SpecRel 3800-3500			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
📄 💼 SpecRel 1800-1500			
AugustaMax20-30K			
Fish Spawn Ops_Con			
IF (Pool <= TargetMin)			
SystemDroughtOps Alt-1			
➡ ➡ IF (Normal or Flood Control)			
Thurmond Min L0			
ELSE IF (Drought Level 1)			
DecRel 3800-3500			
ELSE IF (Drought Level 2)			
E-+ ELSE (Drought Level 3)			
SpecRel 1800-1500			
AugustaMax20-30K			
🖶 🚺 April Fish Spawn Ops_Con			
IF (Pool <= TargetMin)			
Spawn_market=millow			
IF (Normal or Flood Control)			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IE (Drought Lavel 2)			
SpecRel 2800-2500			
ELSE (Drought Level 3)			
Level 3			
AugustaMax20-30K			
I April Fish Spawn Ops_Con I = ↓ IF (Pool ≤= TarostMin)			
Spawn_MaxRel=Inflow			
SystemDroughtOps Alt-1			
Thurmond Min L0			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
SpecRel 2800-2500			
SpecRel 1800-1500	1		
inactive	Zone Sort Elevation		
	1		
Contraction of the second s			OK Cancel Apply

Annex B - Screen 46 (ALT1, Thurmond Trigger Level 2 Rule Stack)

🔽 Reservoir Editor - Network: Daily Operations				×
Reservoir Edit Operations Zone Rule IF_Block				
Reservoir Thurmond			₩ 4 6 of 6	
Physical Operations Observed Data				_
Operation Set Alt-1	Description Opset for Al	t 1, Extreme Low Flows		
Zone-Rules Reli Allac, Outages Star, Gredif D	Projected Elev			
Induced Surcharge Thurmond IS	Storage Zone Level 3	Description		
AugustaMax20-30K	Function of Date		Define	e
AugustaMin3600	Date	Top Elevation (ff)	350	
Thurmond IS	01Jan	316.0 +	345-	
AugustaMax20-30K Thurmond Min L0			340-	
AugustaMin3600			€ ³³⁵ 5 330-	
Thurmond IS			Site 325	
AugustaMax20-30K Thurmond Min L0			ш ₃₂₀ -	
AugustaMin3600			315-	
IF (Pool <= TargetMin)			310 - Jan Mar May Jul Sep Nov	
B-{} SystemDroughtOps Alt-1				
➡ ➡ IF (Normal or Flood Control)				
SpecRel 3800-3500				
SpecRel 2800-2500				
E-➡ ELSE (Drought Level 3)				
AugustaMax20-30K				
April Fish Spawn Ops_Con				
D Spawn_MaxRel=Inflow				
E SystemDroughtOps Alt-1 □ → IF (Normal or Flood Control)				
Thurmond Min L0				
ELSE IF (Drought Level 1)				
ELSE IF (Drought Level 2)				
ELSE (Drought Level 3)				
SpecRel 1800-1500 Level 2				
AugustaMax20-30K				
⇒ IF (Pool <= TargetMin)				
Spawn_MaxRel=Inflow				
IF (Normal or Flood Control) Thurmond Min L0				
Weekly System Power				
SpecRel 3800-3500				
SpecRel 2800-2500				
ELSE (Drought Level 3)				
AugustaMax20-30K				
April Fish Spawn Ops_Con				
Spawn_MaxRel=Inflow				
IF (Normal or Flood Control)				
Thurmond Min L0				
→ ELSE IF (Drought Level 1) SpecRel 3800-3500				
⇒ ELSE IF (Drought Level 2)				
ELSE (Drought Level 3)				
Inactive	Zone Sort Elevation			
1	1	1		
			OK Cancel Ap	oply

Annex B - Screen 47 (ALT1, Thurmond Trigger Level3 Rule Stack)

rvoir Edit Operations Zone Rule IF_Block	(
servoir Thurmond 👻 Descri	ption		
ysical Operations Observed Data			
peration Set Alt-1	Description Opset for A	Alt 1, Extreme Low Flows	(
one-Rules Reli Allac, Outages Star Gre	dif Dec. Sches. Projected Elev		
Induced Surcharge	Storage Zone Inactive	Description	
AugustaMax20-30K Thurmond Min L0	Function of Date		Define
Flood Control	Date	Top Elevation (ft)	350
Thurmond IS AugustaMax20-30K	01Jan	312.0	340
Thurmond Min L0 AugustaMin3600			€ 335
Conservation Thurmond IS			5 330 325
AugustaMax20-30K Thurmond Min L0			ä 320-
AugustaMin3600			315-
IF (Pool <= TargetMin) Spawn_MaxRel=Inflow			Jan Mar May Jul Sep Nov
SystemDroughtOps Alt-1 IF (Normal or Flood Control)			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
Level 1 AugustaMax20-30K			
April Fish Spawn Ops_Con IF (Pool <= TargetMin)			
Spawn_MaxRel=Inflow { } SystemDroughtOps Alt-1			
Thurmond Min L0			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
E Speckel 2800-2500			
Level 2			
AugustaMax20-30K			
IF (Pool <= TargetMin) IF (Pool <= TargetMin) Spawn_MaxRel=Inflow			
 IF (Normal or Flood Control) 			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2) SpecRel 2800-2500 FLSE (Provide the avel 2)			
SpecRel 1800-1500			
AugustaMax20-30K			
➡ F (Pool <= TargetMin)			
{} SystemDroughtOps Alt-1 E ► ► IF (Normal or Flood Control)			
Thurmond Min L0			
ELSE IF (Drought Level 1)			
ELSE (Drought Level 3)		1	
00001001000	Trans Ord Eleveller		

Annex B - Screen 48 (ALT1, Thurmond Inactive Pool Definition)



Annex B - Screen 49 (ALT1, Thurmond Conservation Pool, Level 1 Bell Gage Rule)



Annex B - Screen 50 (ALT1, Thurmond Conservation Pool, Level 2 Bell Gage Rule)

ervoir Thurmond 🔹 Descr	ption			6 of 6 🕨
sical Operations Observed Data				
eration Set Alt-1	Description Opset for A	It 1, Extreme Low Flows		(
ne-Rules Rel, Alloc, Outages Star, Cr	dif Dec. Schet. Projected Elev			
Induced Surcharge	Operates Release From: Thurmo	nd-Thurmond Dam		
AugustaMax20-30K	Rule Name: SpecRel 1800-1500	Description:		
AugustaMin3600	Function of: Date			Define
Flood Control Thurmond IS	Limit Type: Specified	✓ Interp.: Step	• 1,850	
AugustaMax20-30K Thurmond Min L0	Date	Release (cfs)		
AugustaMin3600	01Jan 01Feb	1500.	0 1,800	
Thurmond IS	01Apr 01May	1800.	0	
Thurmond Min L0			1,750	_
April Fish Spawn Ops_Con				
■ F (Pool <= TargetMin) ■ Spawn_MaxRel=Inflow			1,700-	_
SystemDroughtOps Alt-1 ⇒ → IF (Normal or Flood Control)				
Thurmond Min L0 Weekly System Power			- 9 9 1 650 -	
ELSE IF (Drought Level 1)		1		
ELSE IF (Drought Level 2)			<u>ش</u>	
ELSE (Drought Level 3)			1,000	
Level 1				
AugustaMax20-30K April Fish Spawn Ops_Con			1,550	
IF (Pool <= TargetMin) □ Spawn MaxRel=Inflow				
SystemDroughtOps Alt-1 IF (Normal or Flood Control)			1,500	
Thurmond Min L0				
ELSE IF (Drought Level 1)			1,450	
ELSE IF (Drought Level 2)			Jan May De	4
ELSE (Drought Level 3)			Period Average Limit	Edit
Level 2			Day of Week Multiplier	Edit
AugustaMax20-30K April Fish Spawn Ops Con			Rising/Falling Condition	Edit
IF (Pool <= TargetMin) ■ Snawn MaxRel=Inflow			Seasonal Variation	Edit.
SystemDroughtOps Alt-1				
Thurmond Min L0				
Weekly System Power ELSE IF (Drought Level 1)				
ELSE IF (Drought Level 2)				
ELSE (Drought Level 3)				
SpecRel 1800-1500				
AugustaMax20-30K				
⇒ IF (Pool <= TargetMin)				
SystemDroughtOps Alt-1				
IF (Normal or Flood Control) Thurmond Min L0				
Weekly System Power ELSE IF (Drought Level 1)				
SpecRel 2800-2500				
ELSE (Drought Level 3)			3	
Inactive			+	

Annex B – ResSim Model

Annex B - Screen 51 (ALT1, Thurmond Conservation Pool, Level 3 Rule)

ALT-2





Reservoir Editor - Network: Daily Operations			
ervoir Edit Operations Zone Rule IF_Block			
eservoir Thurmond			
hysical Operations Observed Data			
Operation Set Alt-2	Description Opset for All	-2, Raise LVL3	G
Zone-Rules Rel, Allac, Outages Star Gredit	Dec. Schell (Projected Elev)		
Induced Surcharge	Storage Zone Flood Control	Description	
	Function of Date		Define
AugustaMin3600	Date	Top Elevation (ft)	350
Thurmond IS	01Jan	335.0	345-
Thurmond Min L0			£ 335
Conservation			틡 330-
			à 325-
AugustaMin3600			315
→ April Fish Spawn Ops_Con → IF (Pool <= TargetMin)			310 Jan Mar May Jul Sen Nov
Spawn_MaxRel=Inflow SystemDroughtOps Alt-2			Jan war way Jul Sep Nuv
IF (Normal or Flood Control) Thurmond Min L0			
ELSE IF (Drought Level 2)			
■ SpecRel 3800-3600			
SpecRel 3600-3100			
AugustaMax20-30K			
Augustamination			
IF (Pool <= TargetMin) Spawn_MaxRel=Inflow			
{ } SystemDroughtOps Alt-2 			
Thurmond Min L0 Weekly System Power			
E-→ ELSE IF (Drought Level 1)			
➡ ELSE IF (Drought Level 2) ■ ■ SpecRel 3800-3600			
E→ ELSE (Drought Level 3)			
Level 2 AugustaMay20-30K			
AugustaMin3600			
⇒ F (Pool <= Targetkin)			
SystemDroughtOps Alt-2			
IF (Normal or Flood Control) Thurmond Min L0			
→ ■ SpecRel 4000 → ➡ ELSE IF (Drought Level 2)			
Evel 3			
- AugustaMax20-30K			
April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
IF (Normal or Flood Control)			
Weekly System Power			
ELSE IF (Drought Level 1)			-
➡ ➡ ELSE IF (Drought Level 2) ➡ ☐ SpecRel 3800-3600	Zone Sort Elevation		
ELSE (Drought Loval 2)	L		



Annex B - Screen 53 (ALT2, Thurmond Flood Pool Rule Stack)



Annex B - Screen 54 (ALT2, Thurmond Conservation Pool Rule Stack)



Annex B - Screen 55 (ALT2, Thurmond Trigger Level 1 Rule Stack)



Annex B - Screen 56 (ALT2, Thurmond Trigger Level 2 Rule Stack)



Annex B - Screen 57 (ALT2, Thurmond Trigger Level 3 Rule Stack)



Annex B - Screen 58 (ALT2, Thurmond Inactive Pool Definition)

Reservoir Editor - Network: Daily Operations Reservoir Edit Operations Zone Rule IF_Block Reservoir Thurmond - Description Physical Operations Observed Data ▼ Description Opset for Alt-2, Raise LVL3 Operation Set Alt-2 Zone-Rules Allac, Outages Star Induced Surcharge Operates Release From: Thurmond-Thurmond Dam Thurmond IS Rule Name: SpecRel 3800-3600 Description: ...) AugustaMax20-30K Thurmond Min L0 Function of: Date Define... AugustaMin3600 Flood Control Limit Type: Specified ✓ Interp.: Step Thurmond IS
AugustaMax20-30K
Thurmond Min L0 . Date Release (cfs) 3,800 AugustaMin3600 01Jan 3600.0 3800.0 01Feb Conservation Thurmond IS 01Apr 3800.0 AugustaMax20-30K
Thurmond Min L0 01Nov 3600.0 AugustaMin3600 April Fish Spawn Ops_Con 3,750 Spawn_MaxRel=Inflow SystemDroughtOps Alt-2
IF (Normal or Flood Control) Thurmond Min L0 (cfs) 3,700 -+ ELSE IF (Drought Level 1) Release SpecRel 4000 + ELSE IF (Drought Level 2) ELSE (Drought Level 3) SpecRel 3600-3100 Level 1 3,650 AugustaMax20-30K AugustaMin3600 April Fish Spawn Ops_Con
→ IF (Pool <= TargetMin)</p> Spawn_MaxRel=Inflow { } SystemDroughtOps Alt-2 ➡ IF (Normal or Flood Control) 3,600 Thurmond Min L0
 Weekly System Powe → ELSE IF (Drought Level 1) SpecRel 4000 Jan May Sep ELSE IF (Drought Level 2) E SpecRel 3800-3600 Period Average Limit Edit. Hour of Day Multiplier Edit. Level 2 Day of Week Multiplier Edit. AugustaMax20-30K AugustaMin3600 Rising/Falling Condition Edit. April Fish Spawn Ops_Con → IF (Pool <= TargetMin)</p> Seasonal Variation Edit. Spawn_MaxRel=Inflow SvstemDroughtOps Alt-2 → IF (Normal or Flood Control)
 → Thurmond Min L0
 → Weekly System Power E- + ELSE IF (Drought Level 1) SpecRel 4000 ➡ ELSE IF (Drought Level 2) SpecRel 3800-3600 Level 3 AugustaMax20-30K AugustaMin3600 April Fish Spawn Ops_Con
→ IF (Pool <= TargetMin)</p> E Spawn_MaxRel=Inflow -{ } SystemDroughtOps Alt-2 → IF (Normal or Flood Control)
 → Thurmond Min L0
 → Weekly System Power -> ELSE IF (Drought Level 1) SpecRel 4000 ➡ ELSE IF (Drought Level 2) SpecRel 3800-3600 E → ELSE (Drought Level 3) E SpecRel 3600-3100 A Inactive Cancel OK Apply

Annex B - Screen 59 (ALT2, Conservation Pool, Level 1 Bell Gage Rule)







Annex B - Screen 61 (ALT2, Conservation Pool, Level 3 Rule)

Annex B - Screen 62 (ALT2, Conservation Pool, Thurmond Min 3600 cfs Rule)



Annex B - Screen 63 (ALT2, Conservation Pool, Augusta Min 3600 cfs Rule)

ALT-3



Annex B - Screen 64 (ALT3, Induced Surcharge Pool Rule Stack)

Reservoir Editor - Network: Daily Operations		
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond		H A 6 of 6 D H
Physical Operations Observed Data		
Operation Set Alt-3_Rev	Description	
Zone-Rules Rel, Allac, Outages Stor, Credit	Zeo Sones Projected Elev	
Induced Surcharge Induced Surcharge	Storage Zone Flood Control Description	
Thurmond Min L0.	Date Date	350
Flood Control	01Jan 335.0 ×	345-
Thurmond Min L0		€ 335
Conservation		5 330 325
AugustaMax20-30K Thurmond Min L0		₩ ₃₂₀ -
Augustamin3600 April Fish Spawn Ops_Con E E (Pool ≤= TargetMin)		315
Spawn_MaxRel=Inflow For the second	· · · · · · · · · · · · · · · · · · ·	Jan Mar May Jul Sep Nov
WET_Millhaven_min		
WET_Millhaven_Pulse		
WET_Clyo max		
ELSE IF (Drought I rigger=0(AVG)) AVG_Shoals min AVG_Shoals max		
Thurmond ROF shoals		
AVG_Millhaven max AVG_Millhaven Pulse		
AVG_Clyo min 		
BLSE IF (DroughtTrigger=1(DRY)) ■ DRY_Shoals Min		
DRY_Shoals max Thurmond ROF shoals		
DRY_Millhaven max DRY_Millhaven min Thursday DOD ODUTION		
Thurmond ROR CRITICAL Thurmond ROF CRITICAL DRY Millbaven Min-Pulse		
DRY_Clyo min DRY_Clyo max		
DRY_Clyo Pulse ELSE (DroughtTrigger<=2)		
DROUGHT_Shoals min DROUGHT_Shoals max DROUGHT_Shoals max		
Thurmond ROR CRITICAL		
DROUGHT_Millhaven Min-Pulse DROUGHT_Clyo min DROUGHT_Clyo min		
DROUGHT_Clyo max DROUGHT_Clyo Pulse		
➡ IF (Normal or Flood Control) ■ Weekly System Power		
ELSE IF (Drought Level 1)		
Level 1	Zone Soft Elevation	
AugustaMax20-30K +		
		OK Cancel Apply

Annex B - Screen 65 (ALT3, Induced Flood Pool Rule Stack)

Reservoir Editor - Network: Daily Operations			
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			
Physical Operations Observed Data			
Operation Set Alt-3_Rev	Description		
Zone-Rules Ref. Allac. Outages Stor. Gredif	Jec. Sches. Projected Elev		
Induced Surcharge Thurmond IS	Storage Zone Conservation	Description	
Thurmond Min L0	Function of Date		Define
Flood Control	Date 01Jan	Top Elevation (ft) 326.0 *	345
AugustaMax20-30K	01Apr	330.0	340-
	15Oct	330.0	€ 335
Conservation			<u>5</u> 330
Thurmond IS			a 325-
			^Ⅲ 320-
AugustaMin3600			315
□ April Fish Spawn Ops_Con			310
Spawn_MaxRel=Inflow			Jan Mar May Jul Sep Nov
Environmental Ops			
WET Shoals min			
- Thurmond ROF shoals			
WET_Millhaven_min			
WET_Millhaven_Pulse			
WET_Clyo min			
WET_Clyo pulse			
⇒ ELSE IF (DroughtTrigger=0(AVG))			
AVG_Shoals min			
Thurmond ROF shoals			
AVG_Millhaven min			
AVG_Milinaven max			
AVG_Clyo min			
AVG_CIyo max			
ELSE IF (DroughtTrigger=1(DRY))			
DRY_Shoals Min			
DRY_Shoals max Thurmond ROE shoals			
DRY_Millhaven max			
DRY_Millhaven min			
Thurmond ROR CRITICAL			
DRY_Millhaven Min-Pulse			
DRY_Clyo min			
DRY_Clyo max			
ELSE (DroughtTrigger<=2)			
DROUGHT_Shoals min			
DROUGH1_Shoals max Thurmond ROF shoals			
DROUGHT_Millhaven min			
DROUGHT_Millhaven max			
Thurmond ROF CRITICAL			
DROUGHT_Millhaven Min-Pulse			
DROUGHT_Clyo Pulse			
E{ } SystemDroughtOps			
Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
SpecRel-L2 Bell			
ELSE (Drought Level 3)			
Level 1	Zone Sort Elevation		
AugustaMax20-30K +	Tous our riskarion		
		-	10
			OK Cancel Apply

Annex B - Screen 66 (ALT3, Conservation Pool Rule Stack)



Annex B - Screen 67 (ALT3, Trigger Level 1 Rule Stack)



Annex B - Screen 68 (ALT3, Trigger Level 2 Rule Stack)



Annex B - Screen 69 (ALT3, Trigger Level 3 Rule Stack)


Annex B - Screen 70 (ALT3, Thurmond Inactive Pool Definition)



Annex B - Screen 71 (ALT3, Wet Condition, Shoals Minimum Rule)



Annex B - Screen 72 (ALT3, Wet Condition, Shoals, Rate of Fall Rule)

Reservoir Editor - Network: Daily Operations		X
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond		
Physical Operations Observed Data		
Operation Set Alt-3_Rev	Description	
Zone-Rules Ref. Alloc. Durages Stor Gradif	Dec. Sched. Projected Elev	
Thurmond IS Thurmond IS Thurmond Min L0 AugustaMin3600 Flood Control AugustaMax20-30K AugustaMax20-30K AugustaMax20-30K Thurmond Min L0 Thurmond Min L0	Operates Release From Information Rule Name: WET_Millhaven_min Description: Function of: Date Limit Type: Minimum Downstream Location: Millhaven Parameter	8,000
	Flow	7,000
Thurmond IS AugustaMax20-30K AugustaMin3600 AugustaMin3600	Date Flow (cfs) 01Jan 0.0 01Feb 7500.0 15Mar 0.0 15Apr 7500.0 15May 0.0 15Mov 0.0 15Nov 0.0	6,000- 5,000-
Thurmond ROF shoals.	/day	5 4,000
WET_Millhaven_Triax WET_Millhaven_Pulse WET_Clyo min WET_Clyo max WET_Clyo pulse WET_Clyo Milhaven min AVG_Milhaven max AVG_Milhaven max AVG_Clyo min WET_Clyo Pulse PELSE IF (DroughtTrigger=1(DRY)) DRY_Shoals Min DRY_Shoals Min DRY_Shoals Min DRY_Milhaven max DRY_Milhaven min DRY_Milhaven min DRY_Milhaven max DRY_Milhaven max DRY_Milhaven max DRY_Milhaven max DRY_Milhaven min DRY_Clyo min DRY_Clyo min DRY_Clyo Pulse DRY		2,000 2,000 1,000 Jan May Sep Period Average Limit Edit Hour of Day Multiplier Edit Day of Week Multiplier Seasonal Variation Edit Flow Contingency Edit
		Advanced Options
	11-	
		OK Cancel Apply

Annex B - Screen 73(ALT3, Wet Condition, Millhaven, Minimum Rule)



Annex B - Screen 74 (ALT3, Wet Condition, Millhaven, Max Rule)



Annex B - Screen 75 (ALT3, Wet Condition, Millhaven, Pulse Rule)



Annex B - Screen 76 (ALT3, Wet Condition, Clyo, Min Rule)

Reservoir Editor - Network: Daily Operations		
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond		
Physical Operations Observed Data		
Operation Set Alt-3_Rev	Description	
Zone-Rules Rel, Allac, Outages Star Gredit	Dec. Sched Projected Elev	
Zone-Rules ReinAlitics Durages Standarded Induced Surcharge Induced Surcharge Induced Surcharge Induced Surcharge Induced Surcharge AugustaMin3600 Flood Control Induced Surcharge Induced Surcharge AugustaMin3600 Flood Control Induced Surcharge Induced Max20-30K Induced Surcharge Induced Surcharge AugustaMin3600 Conservation Induced Surcharge Induced Max20-30K Induced Surcharge Induced Surcharge Spawn_Marge=Inflow Environmental Ops Spawn_Marge=Inflow Environmental Ops Induced Surcharge=-1(WET)) Induced VetT_Millhaven_min WET_Clyo min Induced ROF shoals WET_Clyo pulse Induced ROF shoals WET_Clyo pulse Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals AVG_Shoals max Infurmond ROF Shoals AVG_Clyo min Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals Induced ROF Shoals <	Decide training Operates Release From: Thurmond Rule Name: WET_Clyo max Description: Function of Date Limit Type: Maximum Interp.: Step • Dgwnstream Location: Clyo Barameter: Flow • Olda Date Flow (cfs) • •	Control devices in the second devices in the
AugustaMax20-30K		Advanced Options
		OK Cancel Apply

Annex B - Screen 77 (ALT3, Wet Condition, Clyo Max Rule)



Annex B - Screen 78 (ALT3, Wet Condition, Clyo, Pulse Rule)



Annex B - Screen 79 (ALT3, Average Condition, Shoals, Max Rule)



Annex B - Screen 80 (ALT3, Average Condition, Shoals, Min Rule)



Annex B - Screen 81 (ALT3, Average Condition, Shoals, Max Rule)



Annex B - Screen 82 (ALT3, Average Condition, Millhaven, Mix Rule)



Annex B - Screen 83 (ALT3, Average Condition, Millhaven, Max Rule)



Annex B - Screen 84 (ALT3, Average Condition, Millhaven, Pulse Rule)



Annex B - Screen 85 (ALT3, Average Condition, Clyo, Min Rule)

Reservoir Editor - Network: Daily Operations			X
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			H d 6 of 6 D H
Physical Operations Observed Data			
Operation Set Alt-3_Rev	Description		
Zone-Rules Reli Allac, Outages Star Credit	Dec. Sched. Projected Elev		
Thurmond IS	Operates Release From: Thurmond Rule Name: AVC. Civo may	Description:	
AugustaMax20-30K Thurmond Min L0	Function of: Date]======	Define
Flood Control	Limit Type: Maximum	Interp.: Linear	
AugustaMax20-30K	Downstream Location: Clyo		7,580
AugustaMin3600	Parameter: Flow	*	7 560
Thurmond IS	Date	Flow (cfs)	
Thurmond Min L0		7500.0	7,540
April Fish Spawn Ops_Con IF (Pool <= TargetMin)			
□ Spawn_MaxRel=Inflow □ { } Environmental Ops			7,520
➡ ➡ IF (DroughtTrigger=-1(WET)) ➡ WET_Shoals min			<u>(</u>)
Thurmond ROF shoals Englishing WET_Millhaven_min			5 7,500
WET_Millhaven max			7 480-
WET_Clyo max			1,400
			7,460-
AVG_Millhaven min			7,440
AVG_Millhaven Pulse			
AVG_Clyo max AVG_Clyo Pulse			7,420
➡ ➡ ELSE IF (DroughtTrigger=1(DRY)) □ DRY_Shoals Min			Period Average Limit Edit
DRY_Shoals max DRY_Shoals max DRY_Shoals max			Hour of Day Multiplier
DRY_Millhaven max DRY_Millhaven min			Day of Week Multiplier Edit Seasonal Variation Edit
Thurmond ROR CRITICAL			Flow Contingency Edit
DRY_Millhaven Min-Pulse			
DRY_Clyo max			
ELSE (Drought Ingger<=2) DROUGHT_Shoals min DROUGHT_Shoals min			
DROUGHI_shoals max DROUGHI_Shoals max DROUCHT_NUMpoints			
DROUGHT_Millhaven max Thurmond POR CRITICAL			
Thurmond ROF CRITICAL			
DROUGHT_Clyo min			
DROUGHT_Clyo Pulse			
➡ ➡ IF (Normal or Flood Control) Weekly System Power			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
AugustaMax20-30K		7	Advanced Options
			OK Cancel Apply

Annex B - Screen 86 (ALT3, Average Condition, Clyo, Man Rule)



Annex B - Screen 87 (ALT3, Average Condition, Clyo, Pulse Rule)



Annex B - Screen 88 (ALT3, Dry Condition, Shoals, Min Rule)



Annex B - Screen 89 (ALT3, Dry Condition, Shoals, Max Rule)



Annex B - Screen 90 (ALT3, Dry Condition, Millhaven, Max Rule)

Reservoir Editor - Network: Daily Operations		
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond		
Physical Operations Observed Data		
Operation Set Alt-3_Rev	▼ Description)
Zone-Rules Rel, Allac, Outages Star, Gredit 1	Dec. Sched. Projected Elev	
Induced Surcharge Augustalian Surcharge	Operates Release From: Thurmond Rule Name: DRY Millhaven min Description:	
Thurmond Min L0	Function of: Date	Define
Flood Control	Limit Type: Minimum 🔹 Interp.: Step 👻	3 600
AugustaMax20-30K Thurmond Min L0	Downstream Location: Millhaven	
AugustaMin3600	Parameter. Flow -	3,400
Thurmond IS	Date Flow (cfs) 01Jan 2000.0 x	2 200
AugustaMin3600	15Mar 3400.0 15Oct 2000.0	3,200
⇒ IF (Pool <= TargetMin)		3,000-
		2 900
WET_Shoals min Thurmond ROF shoals		2,800 (6)
WET_Millhaven_min WET_Millhaven max		Å 2,600-
WET_Millhaven_Pulse		
WET_Clyo max		2,400
AVG_Shoals min		2,200
Thurmond ROF shoals		
		2,000
AVG_Clyo min AVG_Clyo max		1,800
AVG_Clyo Pulse ➡ ELSE IF (DroughtTrigger=1(DRY))		Jan May Sep
DRY_Shoals Min DRY_Shoals max Thurmond BOE shoals		Hour of Day Multiplier
DRY_Millhat 1.6 cfs/hr = 1000 cfs/day]	Day of Week Multiplier
Thurmond ROR CRITICAL		Seasonal Variation Edit.
DRY_Millhaven Min-Pulse DRY_Clyo min		
DRY_Clyo max		
Image: Image		
DROUGHT_Shoals max Thurmond ROF shoals		
DROUGHT_Millhaven mix DROUGHT_Millhaven max DROUGHT_Millhaven max		
Thurmond ROR CRITICAL		
DROUGHT_Clyo min DROUGHT_Clyo max		
DROUGHT_Clyo Pulse		
➡ ➡ IF (Normal or Flood Control) ■ Weekly System Power		
ELSE IF (Drought Level 1)		
ELSE IF (Drought Level 2)		
SpecRel-L3-Seasonal		
AugustaMax20-30K +	*	Advanced Options
		OK Cancel Apply

Annex B - Screen 91 (ALT3, Dry Condition, Millhaven, Min Rule)



Annex B - Screen 92 (ALT3, Dry Condition, Thurmond, Rate of Rise Critical Rule)



Annex B - Screen 93 (ALT3, Dry Condition, Thurmond, Rate of Fall Critical Rule)

Reservoir Editor - Network: Daily Operations			X
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond	1		
Physical Operations Observed Data			
Operation Set Alt-3_Rev	Description		
Zone-Rules Ref. Allon, Outages Stor Credit J	Dec. Sched. Projected Elev		
Induced Surcharge	Operates Release From: Thurmond		
AugustaMax20-30K	Rule Name: DRY_Millhaven Min-Puls	se Description: Modified to accomoda	ate Ciyo May 15 Pulse 🛄
Thurmond Min L0.	Eunction of Data		
AugustaMin3600	Date		Define
Flood Control	Limit Type: Minimum		
AugustaMax20-30K	Downstream Location: withours		14,000
Thurmond Min L0	Nilliaven		
AugustaMin3600	Parameter. Flow	•	
Conservation		Thursday	12,000
	Date	Flow (cts)	
Thurmond Min L0	02.lan	2000.0	
AugustaMin3600	15Jan	5000.0	10,000
April Fish Spawn Ops_Con	16Jan	2000.0	10,000
Spawn MayRel=Inflow	01Feb	5000.0	
Environmental Ops	15Eeb	3400.0	
⇒ IF (DroughtTrigger=-1(WET))	16Feb	3400.0	8,000
WET_Shoals min	01Mar	5000.0	(3)
WET Millbaven min	02Mar	3400.0	Ŭ M
WET_Millhaven max	15Mar 16Mar	3400.0	운 6.000-
- 🔲 WET_Millhaven_Pulse	01Apr	5000.0	
WET_Clyo min	02Apr	3400.0	innan maining 1
WET_Civo max	15Apr	5000.0	
➡ ➡ ELSE IF (DroughtTrigger=0(AVG))	01May	5000.0	4,000
AVG_Shoals min	02May	3400.0	
VG_Shoals max	15May	12000.0	
AVG Millhaven min	19May	3400.0	2,000
AVG_Millhaven max	02.1up	3400.0	
AVG_Millhaven Pulse	15Jun	5000.0	
AVG_Clyo min	16Jun	3400.0	
	01Jul	5000.0	Jan May Sep
ELSE IF (DroughtTrigger=1(DRY))	15Jul	5000.0	
DRY_Shoals Min	16Jul	3400.0	Period Average Limit Edit.
DRY_Shoals max	01Aug	5000.0	Hour of Day Multiplier Edit
DRY Millhaven max	15Aug	5000.0	Day of Week Multiplier
DRY_Millhaven min	16Aug	3400.0	Reasonal Variation Edit
Thurmond ROR CRITICAL	01Sep	5000.0	_ Seasonal valiation _ Eult.
DRY Millbaven Min 20.82 cfs/hr = 500) cfs/day focus is Millhaven	3400.0	Flow Contingency
DRY_Clyo min	16Sep	3400.0	
DRY_Clyo max	010d	5000.0	
DRY_Clyo Pulse	020ct	3400.0	
DROUGHT_Shoals min	160ct	5000.0	
DROUGHT_Shoals max	01Nov	5000.0	
Thurmond ROF shoals	02Nov	2000.0	
DROUGHT_Millhaven min	15Nov	5000.0	
Thurmond ROR CRITICAL	01Dec	2000.0	
Thurmond ROF CRITICAL	02Dec	2000.0	
DROUGHT_Millhaven Min-Pulse DROUGHT_Olive aria	15Dec	5000.0	
DROUGHT_Cive max	16Dec	2000.0	
DROUGHT_Clyo Pulse			
E { } SystemDroughtOps			
IF (Normal or Flood Control)			
ELSE IF (Drought Level 1)			
SpecRel-L1 Bell			
ELSE IF (Drought Level 2)			
SpecRel-L2 Bell			
SpecRel-L3-Seasonal			
A Level 1			[
AugustaMax20-30K		Ŧ	Advanced Options
		-	10
			OK Cancel Apply

Annex B - Screen 94 (ALT3, Dry Condition, Millhaven, Min Pulse Rule)



Annex B - Screen 95 (ALT3, Dry Condition, Clyo, Min Rule)



Annex B - Screen 96 (ALT3, Dry Condition, Clyo, Max Rule)



Annex B - Screen 97 (ALT3, Dry Condition, Clyo, Pulse Rule)



Annex B - Screen 98 (ALT3, Drought Condition, Shoals, Min Rule)



Annex B - Screen 99 (ALT3, Drought Condition, Shoals, Max Rule)



Annex B - Screen 100 (ALT3, Drought Condition, Shoals, Rate of Fall Rule)



Annex B - Screen 101 (ALT3, Drought Condition, Millhaven, Min Rule)

Reservoir Editor - Network: Daily Operations		X
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond 👻 Description		
Physical Operations Observed Data		
Operation Set Alt-3_Rev	Description	
Zone-Rules Ref. Alloc. Dutages Stor Credit J	Dec. Sched Projected Elev	
 Induced Surcharge Thurmond IS AugustaMax20-30K Thurmond Min L0 AugustaMin3600 Flood Control Thurmond IS AugustaMax20-30K Thurmond Min L0 AugustaMax20-30K Thurmond IS AugustaMax20-30K Thurmond Min L0 AugustaMax20-30K Thurmond Min L0 AugustaMax20-30K Thurmond Min L0 AugustaMax20-30K Thurmond Min L0 AugustaMax20-30K Thurmond K0F shoals WET_Shoals min Thurmond ROF shoals WET_Millhaven_max WET_Clyo max WET_Clyo max WET_Clyo max WET_Clyo max AVG_Shoals max Thurmond ROF shoals AVG_Shoals max Thurmond ROF shoals WET_Clyo max AVG_Shoals max AVG_Clyo max AVG_Clyo max AVG_Clyo max AVG_Clyo max AVG_Clyo max AVG_Clyo min AVG_Clyo max DRY_Shoals Min DRY_Shoals Min DRY_Shoals Min DRY_Shoals Min DRY_Shoals max Thurmond ROF shoals DRY_Milhaven max DRY_Milhaven max DRY_Clyo Pulse ELSE (FOroughtTrigger=2) DROUGHT_Shoals max Thurmond ROF CRITICAL DROUGHT_Shoals max	Operates Release From: Thurmond Rule Name: PROUGHT_Millhaven max Description: Function of Date Interp.: Step Umit Type: Maximum Interp.: Step Image: Step Date Flow Image: Step Image: Step Image: Step Image: Step Date Flow Image: Step Image: Step </td <td>Define 5,050 5,040 5,030 5,020 5,010 6,010 4,990 4,990 4,990 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 5,020 5,010 6,010 4,960 4,960 4,960 4,960 4,960 5,020 5,010 Bay of Week Multiplier Edit. Edit. Edit. Flow Contingency Edit.</td>	Define 5,050 5,040 5,030 5,020 5,010 6,010 4,990 4,990 4,990 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 4,960 5,020 5,010 6,010 4,960 4,960 4,960 4,960 4,960 5,020 5,010 Bay of Week Multiplier Edit. Edit. Edit. Flow Contingency Edit.
		OK Cancel Apply

Annex B - Screen 102 (ALT3, Drought Condition, Millhaven, Max Rule)



Annex B - Screen 103 (ALT3, Drought Condition, Thurmond, Rate of Rise Critical Rule)



Annex B - Screen 104 (ALT3, Drought Condition, Thurmond, Rate of Fall Critical Rule)

Beererer Bel Baselann Zoe Bull Fjeled Reserver Journed Decortains Decortains de la de la de Decortains de la	Reservoir Editor - Network: Daily Operations		
Particle Partonic Present Services	Reservoir Edit Operations Zone Rule IF_Block		
Durindi Descrition Overland Rel Abs_Bay > Descrition Total Status Status Overland Rel Abs_Bay Provide Relaxes Forn. Thurmoid Total Status Status Overland Relaxes Forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Status Status Overland Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Status Status Thurmoid Total Status Status Status Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid Total Relaxes forn. Thurmoid Relaxes forn. Thurmoid Relaxes forn. Thurmoid forn. Thurmoid <td>Reservoir Thurmond</td> <td></td> <td></td>	Reservoir Thurmond		
Descritor Sel Malliner Descritor Sel Malliner Descritor Sel Malliner Des	Physical Operations Observed Data		
Printer State Date Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State Printer State	Operation Set Alt-3_Rev	Description	
Discrete Surchards Operative Research from: Thurmoid Provide Research from: Thurmoid Research from:	Zone-Rules Rel. Alloo, Outages Stor. Gredit	Dec. Sched. Projected Elev	
Turning dissipant dissipant display Turning dis	Induced Surcharge	Operates Release From: Thurmond	
Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis Partment Min Lis		Rule Name: IGHT_Millhaven Min-Pulse Description: Note: No Clyo Pulse	
Public dia Date Detection Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di Si Province di	Thurmond Min L0	Construct I	
End Control During Start End Control	AugustaMin3600	Function of: Date	Define
Description Thrumon Sin Chi AugustaliniSto Description	Flood Control	Limit Type: Minimum + Interp.: Step	
August Min Los August Min Solo Contervatori Date Tormono Min Los August Min Solo Contervatori	AugustaMax20-30K	Downstream Location: Million	8,000
Data Flow 0 Date Flow (db) 0 Date Flow	Thurmond Min L0	Minaven	
Date Floor	AugustaMin3600	Parameter. Flow	
Date Date Date Date Augustating0-30k 0.00	Thurmond IS	Data Elaw (cfc)	7,000
Description Control dim 1.0 And Frain Spawn Obs_Con Control Transfelling Description Find Spawn Obs_Con Desc	- AugustaMax20-30K	01 Jan 5000 0	
II. And magnetaliningson 10 and 1	- 🛅 Thurmond Min L0	02Jan 2000.0	
Image: Construction Space Multiple Construction 104m 20000 10000 Image: Construction Construction 104m 20000 10000 Image: Construction Construction 104m 20000 10000 Image: Construction 104m 200000 100000 <t< td=""><td>AugustaMin3600</td><td>15Jan 5000.0</td><td>6.000</td></t<>	AugustaMin3600	15Jan 5000.0	6.000
Bigson, Massellinow Construction I encodernal (see) encoderna		16Jan 2000.0	
Image: Construction of the construction of	Spawn_MaxRel=Inflow	02Feb 3400.0	
Image: Proceedings 196 mb 34000 Image: Proceedings 34000 1000 Image: Proceedings <td>Environmental Ops</td> <td>15Feb 5000.0</td> <td>6 000</td>	Environmental Ops	15Feb 5000.0	6 000
Image: display_mail Display_mail Display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail Image: display_mail	WET Shoals min	16Feb 3400.0	0,000
Wert_Millhaven_max 10Mar 30000 Wert_Millhaven_Pulse 00Ar 50000 Wert_Opp max 50000 50000 Wert_Opp max <td>Thurmond ROF shoals</td> <td>0 miai 5000.0 02Mar 3400.0</td> <td>5</td>	Thurmond ROF shoals	0 miai 5000.0 02Mar 3400.0	5
We L, Millaven max 30000 WE L, Op min 30000 WE L, Op min 30000 WE L, Op min 30000 We L, Millaven min 50000 We L, Will Marken min 500000	WET_Millhaven_min	15Mar 5000.0	low loss
WET_Cho max	WET_Millhaven_Pulse	16Mar 3400.0	u 4,000-
WET_Cho mak 19Apr 34000 WET_Cho mak 34000 WET_Cho mak<	WET_Clyo min	02Apr 3400.0	
WEL_Soft place 3400.0 Of May 5300.0 AVG_Shaas min 5000.0 DVY_Shaas min 5000.0 DVY_Shaas min 5000.0 DVY_Milhaven min 5000.0 DVY_Milhaven min 1540.0 DVY_MILAVEN Min-Puise 1560.0	WET_Clyo max	15Apr 5000.0	
AVG_Shaasmin 3000 BAVG_Shaasmin 3000 BAVG_Cov nins 3000 BAVG_Cov nins 3000 BAVG_Cov Puise 15.00 DAV_Shaasmin 3000 DAV_Shaasmin 3000 DAV_ShoaisMin 3000 <		16Apr 3400.0	3,000
AVG_Shads max 16May 70000 AVG_Milhaven min 16May 36000 AVG_Milhaven max 50000 AVG_Chy max 15Jun 36000 AVG_Chy max 15Jun 36000 AVG_Chy max 01Jun 36000 AVG_Chy max 01Jun 36000 AVG_Chy max 01Jul 36000 DVT_Shoals max 01Jul 36000 DVT_Shoals max 01Jul 36000 DVT_Shoals max 01Jul 36000 DVT_Shoals max 01Jul 36000 DVT_Milhaven max 15Jul 36000 DVT_Milhaven max 15Jul 36000 DVT_Milhaven max 15Jul 36000 DVT_Milhaven max 15Jul 36000 DVT_Shoals max 01Aug 36000 DVT_Milhaven max 15Jul 36000 DVT_Shoals max 01Aug 36000 DVT_Shoals max 01Aug 36000 DVT_Shoals max 01Aug 36000 DVS_Shoals max 01Aug 36000 DVS_Shoan 01Aug	- AVG_Shoals min	02May 3400.0	
Hills Ards _ Milliawin minit Sidua 3400.0 Dr.Y Shoals Minit Sidua 3400.0 Dr.Y Shoals Minit Sidua 3400.0 Dr.Y Shoals Minitawin minit Sidua 3400.0 Dr.Y Milliawin minit Sidua Sidua Sidua Dr.Y Milliawin minit Sidua Sidua Sidua Sidua Dr.Y Milliawin minit Sidua Sidua Sidua Sidua Dr.Y Milliawin minit Sidua Sidua Sidua Sidua Sidua Sidua Dr.Y Milliawin minit Sidua Sidua Sidua Sidua S		15May 7000.0	
AVG_Millhaven max 34000 AVG_MULTARIANE Pluise 1500 AVG_Cyto puis 34000 DRV_Shoals max 34000 DRV_Shoals max 34000 DRV_Shoals max 34000 DRV_Millaven max 1500 DRV_Millaven max 1500 DRV_Millaven max 1500 DRV_Millaven max 1500 DRV_Voor 34000 DRV_Oop max 1500 DRUCHT_Shoals max 1500 <	AVG Millhaven min	16May 3400.0	2,000
Image: Subset of the second	AVG_Millhaven max	02Jun 3400.0	
16Jun 3400.0 16Jun 3400.0 16Jun 3600.0 16Jun 3600.0 <td>- AVG_Millhaven Pulse</td> <td>15Jun 5000.0</td> <td></td>	- AVG_Millhaven Pulse	15Jun 5000.0	
General Avec Cuby Pulse 30000 General Avec Cuby Pulse 30000 For Y, Shoals Min 50000 For Y, Shoals Max 50000 For Y, Shoals Max 60000 For Y, Minaven max 154ug For Y, Minaven max 154ug For Y, Minaven Min-Pulse 155ep For Y, Minaven Min-Pulse 155ep For Y, Cyo max 01000 For Y, Cyo max 01000 For Y, Cyo max 01000 For Cyo Pulse 02000 For Cyo Pulse 020000 For Cyo Pulse 020000	AVG_CIVO MAN	16Jun 3400.0	1,000
Issee (Croughtfrigger=1(DRV)) 15Jul 900.0 DRV_Shoals Min 15Jul 3400.0 DRV_Shoals max 15Jul 3400.0 DRV_Milhaven max 15Jug 3400.0 DRV_Clyo max 010dt 5000.0 DRV_Clyo max 010dt 5000.0 DRV_Clyo max 010dt 5000.0 DRUCHT_Sheals min 15Jou 500dt DRUCHT_Sheals max 010dv 5000.0 DRUCHT_Sheals max 010dv 5000.0 DRUCHT_Clyo max 020de 2000.0 DRUCHT_Clyo max 020ec 2000.0 DRUCHT_Clyo max 020ec 2000.0 DRUCHT_Clyo max 020ec	AVG_Clyo Pulse	02Jul 3400.0	Jan May Sep
BY _shoals max 1540 3400.0 DY _shoals max 1540 3400.0 DY _Milhaven min 1640 3400.0 DY _Milhaven min 1640 3400.0 DY _Milhaven min 1650 3400.0 DY _Milhaven Min-Pulse 028ep 3400.0 DY _Gly max 0260 3400.0 DY _Gly max 155ep 5000.0 DRY _Gly max 150.0 150.0 1500.0 DRY _Gly max 150.0 150.0 2000.0 DRU GHT _Sheals min 160.0 2000.0 150.0 DRU GHT _Sheals max 150.0 150.0 2000.0 DRU GHT _Sheals max 150.0 150.0 2000.0 DRU GHT _Milhaven min 160.0 2000.0 150.0 2000.0 DRU GHT _Sheals max 160.0 2000.0 150.0 2000.0 DRU GHT _Sheals max 160.0		15Jul 5000.0	Petiod Average Limit Edit
Thurmond ROF shoals 02400 33000 DRY_Millhaven min 15400 36000 Thurmond ROF CRITICAL 018ep 50000 DRY_Millhaven Min 158ep 50000 DRY_V_Millhaven Min 158ep 50000 DRY_Clyo min 158ep 50000 DRY_Clyo max 010d 50000 DRU_Clyo max 010d 50000 DRU_Clyo max 010d 50000 DRU_Clyo max 150d 20000 DRUCHT_Shoals max 01Nov 50000 DRUUCHT_Millhaven min 16Nov 20000 DRUUCHT_Millhaven min 16Nov 20000 DRUUCHT_Millhaven min 16Nov 20000 DRUUCHT_Clyo max 16Dec 50000 DRUUCHT_Clyo max 16Dec 50000	DRY_Shoals max	16Jul 3400.0 01Aug 5000.0	Turiod Andrago Entre Euro
DRV_Milkaven max 15Aug 500.0 DRV_Milkaven min 15Aug 300.0 Thurmond ROF CRITICAL 025ep 500.0 DRV_Milkaven Min-Pulse 155ep 500.0 DRV_Clyo max 010d 020d DRV_Clyo max 010d 5000.0 DRV_Clyo max 010d 5000.0 DRV_Clyo max 010d 5000.0 DROUGHT_Shoals max 010d 5000.0 DROUGHT_Shoals max 010d 5000.0 DROUGHT_Shoals max 010d 2000.0 DROUGHT_Milhaven min 15Nov 5000.0 DROUGHT_Milhaven max 16Nov 2000.0 DROUGHT_Milhaven max 16Nov 2000.0 DROUGHT_Milhaven max 16Nov 2000.0 DROUGHT_Clyo max 010ec 5000.0 DROUGHT_Clyo max 02Dec 2000.0 DROUGHT_Clyo max 02Dec 2000.0 DROUGHT_Clyo max 02Dec 2000.0 DROUGHT_Clyo max 02Dec 2000.0 SpecRel-L2 Beil SpecRel-L2 Beil Advanced Options ElseE for Orught L	Thurmond ROF shoals	02Aug 3400.0	Hour of Day Multiplier Edit
Image: Construct of the second of t	DRY_Millhaven max	15Aug 5000.0	Day of Week Multiplier
Im Turmmond ROF CRTITCAL D2Sep 3400.0 ID RY_City min 15Sep 5000.0 ID RY_City min 15Sep 5000.0 ID RY_City min 15Sep 3400.0 ID RY_City or Lise 010d 5000.0 ID ROUGHT_Shoals max 15Od 5000.0 ID ROUGHT_Milhaven min 15Od 5000.0 ID ROUGHT_Milhaven min 16Nov 2000.0 ID ROUGHT_Milhaven max 16Nov 2000.0 ID ROUGHT_City min 15Nov 2000.0 ID ROUGHT_City max 16Nov 2000.0 ID ROUGHT_City max 15Dec 5000.0 ID SpecRel_L1 Bell 1 1 <td< td=""><td>Thurmond ROR CRITICAL</td><td>01Sep 5000.0</td><td>Seasonal Variation Edit.</td></td<>	Thurmond ROR CRITICAL	01Sep 5000.0	Seasonal Variation Edit.
Image: DRY_Clyo min 158p 5000.0 Image: DRY_Clyo max 158p 3400.0 Image: DRY_Clyo Pulse 000.1 000.0 Image: DRY_Clyo Pulse 000.0 000.0 Image: DRY_Clyo Pulse 010.0 000.0 Image: DRY_Clyo Pulse 010.0 000.0 Image: DRY_ClyO Pulse 010.0 000.0 Image: DRY_ClyO Pulse 000.0 0	Thurmond ROF CRITICAL	02Sep 3400.0	Flow Contingency Edit
DRY_Clyo max 3400.0 DRY_Clyo Pulse 3400.0 DRY_Clyo Pulse 010d DROUGHT_Shoals min 010d DROUGHT_Shoals max 010d DROUGHT_Shoals max 160d DROUGHT_Shoals max 011Nov DROUGHT_Millhaven min 150d DROUGHT_Millhaven max 011Nov DROUGHT_Millhaven max 010ec DROUGHT_Clyo max 0000.0 DROUGHT_Clyo max 15Nov DROUGHT_Clyo max 15Dec DROUGHT_Clyo max 15Dec DROUGHT_Clyo max 15Dec DROUGHT_Clyo pulse 16Dec SpecRel_12 Bell 16Dec SpecRel_12 Seasonal 1 SpecRel_2 Seasonal 1	DRY_Millhaven Min-Pulse	15Sep 5000.0	
Image: Specific Construction 020ct 3400.0 Image: Specific Construction 020ct 3400.0 Image: Specific Construction 020ct 3400.0 Image: Specific Construction 020ct 3200.0 Image: Specific Construction 020ct 3200.0 Image: Specific Construction 01Nov 0200.0 Image: Specific Construction 02Dec 0200.0 Image: Specific Construction 02Dec 0200.0 Image: Specific Construction 01Nov 02Dec Image: Specific Construction 01Nov 02Dec Image: Specific Construction 01Nov 02Dec Image: Specific Construction 01Nov 01Nov Image: Specific Construction 01Nov 01Nov Image:	DRY_Clyo max	010ct 3400.0	
Image: Construction of the second	DRY_Clyo Pulse	02Oct 3400.0	
IDROUGHT_Shoals max 2000.0 IDROUGHT_Shoals max 01Nov 5000.0 IDROUGHT_Millhaven min 15Nov 2000.0 IDROUGHT_Millhaven max 15Nov 2000.0 IDROUGHT_Millhaven max 16Nov 2000.0 IDROUGHT_Millhaven max 16Nov 2000.0 IDROUGHT_Millhaven max 16Nov 2000.0 IDROUGHT_Clyo min 16Nov 2000.0 IDROUGHT_Clyo Pulse 16Dec 5000.0 IDROUGHT_Clyo Pulse 16Dec 2000.0 IBDE IDROUGHT_Clyo Pulse 16Dec 2000.0 IBDE IESE IF (Drought Level 1) 16Dec 2000.0 ID SpecRel-L1 Bell IDS SpecRel-L3 Seasonal IDS SpecRel-L3 Seasonal IDS SpecRel-L3 Seasonal Level 1 AugustaMax20-30K - Advanced Options Advanced Options	DROUGHT Shoals min	150ct 5000.0	
Image: Constraint of the second sec	DROUGHT_Shoals max	01Nov 5000.0	
15Nov 5000.0 DROUGHT_Millhaven max 15Nov Thurmond ROR CRITICAL 00000 Thurmond ROF CRITICAL 00000 Thurmond ROF CRITICAL 02Dec DROUGHT_Clyo min 02Dec DROUGHT_Clyo max 02Dec DROUGHT_Clyo max 02Dec DROUGHT_Clyo max 010Ec DROUGHT_Clyo max 010Ec DROUGHT_Clyo pulse 00000 + IF (Normal or Flood Control) 010Ec - Weekly System Power 010Ec - ELSE IF (Drought Level 1) 010Ec - SpecRel-L2 Bell 010Ec - SpecRel-L3-Seasonal 010Ec - Level 1 - AugustaMax20-30K	Thurmond ROF shoals	02Nov 2000.0	
Image: Second	DROUGHT_Milhaven min	15Nov 5000.0	
Image: Construction of the construction of	Thurmond ROR CRITICAL	01Dec 5000.0	
Incode High Control 150 ec 5000.0 ID ROUGHT_Clyo min 160 ec 2000.0 ID ROUGHT_Clyo max 160 ec 2000.0 ID ROUGHT_Clyo max 100 ec 100 ec ID ROUGHT_Clyo max 100 ec 100 ec ID ROUGHT_Clyo max 100 ec 100 ec ID Rought Level 1 100 ec 100 ec ID Rought Level 2 100 ec 100 ec	Thurmond ROF CRITICAL	02Dec 2000.0	
Image: Control of the control of th	DROUGHT_Clyo min	15Dec 5000.0 16Dec 2000.0	
Cly SystemDroughtOps F (Rormal or Flood Control) Weekly System Power ELSE IF (Drought Level 1) SpecRel-L1 Bell SpecRel-L2 Bell SpecRel-L2 Bell SpecRel-L3-Seasonal Level 1 Advanced Options	DROUGHT_Clyo max	200.0	
Gostantinogatopy and the second and the secon	DROUGHT_Clyo Pulse		
Weekly System Power → ELSE IF (Drought Level 1) □ SpecRel-L1 Bell → ELSE (Drought Level 2) □ SpecRel-L2 Bell → ELSE (Drought Level 3) □ SpecRel-L3-Seasonal Level 1 ▲ Advanced Options			
→ ELSE IF (Urought Level 1) → ELSE IF (Drought Level 2) → ELSE IF (Drought Level 2) → SpecRel-L3 Bell → ELSE (Drought Level 3) ↓ □ SpecRel-L3-Seasonal Level 1 → Advanced Options	Weekly System Power		
→ ELSE IF (Drought Level 2) → ELSE (Drought Level 2) → ELSE (Drought Level 3) → ELSE (Drought Level 3) ↓ SpecRel-L3-Seasonal Level 1 → Advanced Options	ELSE IF (Drought Level 1)		
SpecRel-L2 Bell SecRel-L2 Bell SecRel-L3-Seasonal Level 1 AugustaMax20-30K AugustaMax20-30K SecRel-L3-Seasonal SecRel-L3-Season	ELSE IF (Drought Level 2)		
P - ELSE (Livugin Level 3) D SpecRel-L3-Seasonal Level 1 Advanced Options	DecRel-L2 Bell		
Advanced Options	ELSE (Drought Level 3)		
AugustaMax20-30K + Advanced Options	Level 1		
	AugustaMax20-30K +		Advanced Options
UN Cancel Appy			OK Cancel Apply

Annex B - Screen 105 (ALT3, Drought Condition, Millhaven, Min-Pulse Rule)


Annex B - Screen 106 (ALT3, Drought Condition, Clyo, Min Rule)



Annex B - Screen 107 (ALT3, Drought Condition, Clyo, Max Rule)

Reservoir Editor - Network: Daily Operations		
Reservoir Edit Operations Zone Rule IF_Block		
Reservoir Thurmond		
Physical Operations Observed Data		
Operation Set Alt-3_Rev	▼ Description	
Zone-Rules Rel, Allac, Outages Star, Gredit I	Dec. Sched. Projected Elev	
Induced Surcharge	Operates Release From: Thurmond	
AugustaMax20-30K	Rule Name: DROUGHT_Clyo Pulse Description:	
Thurmond Min L0	Function of. Date	Define
Flood Control		Donno
Thurmond IS	Einit Type. Minimum 👻 Interp Step 💌	14,000
	Downstream Location: Clyo	
AugustaMin3600	Parameter: Flow +	
Conservation	Data Elaw (cfa)	12,000
AugustaMax20-30K	01Jan 0.0 +	
Thurmond Min L0	01Feb 7500.0	
Augustaminsteel April Fish Spawn Ops_Con	08Feb 0.0 15Apr 12000.0	10,000
IF (Pool <= TargetMin)	30Apr 7500.0	
E { Environmental Ops	07May 0.0	
➡ ➡ IF (DroughtTrigger=-1(WET))	23Sep 0.0	8,000
Thurmond ROF shoals		(cts)
WET_Millhaven_min		MO
WET_Milhaven_Pulse		a 6,000-
WET_Clyo min		
WET Clyo max		4 000
➡ ➡ ELSE IF (DroughtTrigger=0(AVG))		4,000
AVG_Shoals min		
Thurmond ROF shoals		2 000-
AVG_Millhaven min		2,000
AVG_Millhaven Pulse		
AVG_Clyo min		
AVG_Ciyo Miax		Jan May Sep
ELSE IF (DroughtTrigger=1(DRY))		Envirod Automatical Limit
DRY_Shoals Min		Penod Average Limit Edit
Thurmond ROF shoals		Hour of Day Multiplier Edit
DRY_Millhaven max		Day of Week Multiplier
Thurmond ROR CRITICAL		Seasonal Variation Edit.
Thurmond ROF CRITICAL		Flow Contingency Edit
DRY_Clyo min		
DRY_Clyo max		
B → ELSE (DroughtTrigger<=2)		
DROUGHT_Shoals min		
DROUGHT_Shoals max Thurmond ROF shoals		
DROUGHT_Millhaven min		
DROUGHT_Millhaven max Thurmond BOB CBITICAL		
Thurmond ROF CRITICAL		
DROUGHT_Millhaven Min-Pulse DROUGHT_Cive min		
DROUGHT_Clyo max		
DROUGHT_Clyo Pulse		
⇒ → IF (Normal or Flood Control)		
Weekly System Power		
SpecRel-L1 Bell		
ELSE IF (Drought Level 2)		
SpecRel-L3-Seasonal		
Level 1	-	Advanced Options
		OK Cancel Apply

Annex B - Screen 108 (ALT3, Drought Condition, Clyo, Pulse Rule)



Annex B - Screen 109 (ALT3, Normal\Flood Control, Weekly System Power Rule)



Annex B - Screen 110 (ALT3, Drought Level 1, SpecRel Bell Rule)



Annex B - Screen 111 (ALT3, Drought Level 2, SpecRel Bell Rule)



Annex B - Screen 112 (ALT3, Drought Level 3, SpecRel Bell Rule)

ALT-4



Annex B - Screen 113 (ALT4, Thurmond, Induced Surcharge Pool Rule Stack)



Annex B - Screen 114 (ALT4, Thurmond, Flood Control Rule Stack)



Annex B - Screen 115 (ALT4, Thurmond, Conservation Rule Stack)



Annex B - Screen 116 (ALT4, Thurmond, Trigger Level 1 Rule Stack)

Reservoir Editor - Network: Daily Operations			
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			
Physical Operations Observed Data			
Operation Set Alt-4	Description Opset for Al	t-4, 3600 at LVL1	
Zone-Rules Reli Allaci, Quiages Stan Credit)	Jec. Scheol Projected Elev		
Thurmond IS	Storage Zone Level 2	Description	
	Function of Date		Define
Flood Control	Date	Top Elevation (ft)	350
AugustaMax20-30K	01Apr 150ct	324.0	340-
AugustaMin3600	15Dec	322.0	€ 335
Conservation			of a 330 325
Thurmond Min L0			^w 320-
April Fish Spawn Ops_Con			315-
Spawn_MaxRel=Inflow			Jan Mar May Jul Sep Nov
→ IF (Normal of Flood Control) → IF Thurmond Min 3800			
Weekly System Power			
■ SpecRel 3600-3100 ■ ■ ELSE IF (Drought Level 2)			
SpecRel 3600-3100 ELSE (Drought Level 3)			
Evel 1			
AugustaMax20-30K			
☐ { } April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow G-{ } SystemDroughtOps Alt-4			
ELSE IF (Drought Level 1)			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
■ Level 2			
AugustaMin3600			
SystemDroughtOps Alt-4			
Weekly System Power			
ELSE IF (Drought Level 2)			
ELSE (Drought Level 3)			
Level 3			
i⊡ ➡ IF (Pool <= TargetMin)			
Image: SystemDroughtOps Alt-4 Image: Image: Flood Control			
Thurmond Min 3800			
ELSE IF (Drought Level 1) SpecRel 3600-3100 ELSE IF (Drought Level 2)	Zone Sort Elevation		
	1		
			OK Cancel Apply

Annex B - Screen 117 (ALT4, Thurmond, Trigger Level 2 Rule Stack)



Annex B - Screen 118 (ALT4, Thurmond, Trigger Level 3 Rule Stack)



Annex B - Screen 119 (ALT4, Thurmond, Inactive Pool Definition)



Annex B - Screen 120 (ALT4, Conservation Pool, Thurmond Min 3800 cfs Rule)



Annex B - Screen 121 (ALT4, Conservation Pool, Weekly System Power Rule)



Annex B - Screen 122 (ALT4, Conservation Pool, Drought Level , 1 SpecRel 3600-3100 cfs Rule)



Annex B - Screen 123 (ALT4, Conservation Pool, Drought Level 2, SpecRel 3600-31000 cfs Rule)



Annex B - Screen 124 (ALT4, Conservation Pool, Drought Level 3, SpecRel 3600- 3100 cfs Rule)

ALT-5



Annex B - Screen 125 (ALT5, Induced Surcharge Pool Rule Stack)



Annex B - Screen 126 (ALT5, Flood Control Pool Rule Stack)



Annex B - Screen 127 (ALT5, Conservation Pool Rule Stack)



Annex B - Screen 128 (ALT5, Trigger Level 1 Rule Stack)



Annex B - Screen 129 (ALT5, Trigger Level 2 Rule Stack)



Annex B - Screen 130 (ALT5, Trigger Level 3 Rule Stack)

ALT-5



Annex B - Screen 131 (ALT5, Induced Surcharge Rule Stack)

Reservoir Editor - Network: ALT50:Daily Operations				×
Reservoir Edit Operations Zone Rule IF_Block				
Reservoir Thurmond				K 4 6 of 6 1 H
Physical Operations Observed Data				
Operation Set Alt-5 Deg	cription			
Zone-Rules Rel. Allac. Outages Star Gredit Dec. Sched. 1	Projected Elev			
Induced Surcharge Thurmond IS	Storage Zone Flood	Control Descri	iption	
	Function of Date			Define
	Date	Top Elevation (ft)	350	
Flood Control	01Jan	335.0 *	345-	
I Thurmond IS I Augus aMax20-30K			340-	
Thurmond Min L0			E 330	
RS Min 3600			atti 325-	
Thurmond IS			320	
			315-	
AugustaMin3600 SRS Min 3600			Jan Mar May Ju	ul Sep Nov
□-{} April Fish Spawn Ops_Con → IF (Pool <= TargetMin)				
Spawn_MaxRel=Inflow				
Thurmond ROR CRITICAL				
Thurmond ROR CRITICAL				
Thurmond ROF CRITICAL				
ELSE IF (NOV thru JAN)				
Winter JST ROF 200				
ELSE (NON-CRITICAL PERIOD)				
Thurmond ROR NON CRITICAL				
□ → IF (DroughtTrigger=1(DRY))				
DRY_Shoals Min DRY_Millhaven Min-Pulse				
DRY_Clyo min DRY Shoals max				
DRY_Millhaven max				
ELSE IF (DroughtTrigger=2)				
DROUGHT_Shoals min DROUGHT_Millhaven min				
DROUGHT_Clyo min DROUGHT_Shoals max				
DROUGHT_Millhaven max				
ELSE IF (DroughtTrigger=3)				
DROUGHT_Shoals min DROUGHT_Millhaven min				
DROUGHT_Clyo min DROUGHT Shoals max				
DROUGHT_Millhaven max				
Level 1				
MugustaMax20-30K MgustaMin3600				
GRS Min 3600				
	-	-		
Thurmond ROR CRITICAL	Zone Sort Elevation			
			OK Cano	Apply

Annex B - Screen 132 (ALT5, Flood Control Pool Rule Stack)

Reservoir Editor - Network: ALT50:Daily Operations			
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			
Physical Operations Observed Data			
Operation Set Alt-5	cription		
Zone-Rules Reli Allac, Outages Star Gradi Dec. Sonad P	rojected Elev		
Induced Surcharge	Storage Zone Conserva	tion Descript	ion
Mumoru IS AugustaMax20-30K	Function of Date		Define
Thurmond Min L0 Min L0			350
SRS Min 3600	Date 01.Jan	Top Elevation (ft) 326.0	345-
Thurmond IS	01Apr	330.0	340
Thurmond Min L0	15Dec	326.0	€ 335
			5 330
Conservation			a 325 320
Multi AugustaMax20-30K			315
Thurmond Min L0 AugustaMin3600			310
SRS Min 3600			Jan Mar May Jul Sep Nov
➡ IF (Pool <= TargetMin)			
Spawn_MaxRel=Inflow SEASONAL ROC JST			
Thurmond ROF CRITICAL			
Thurmond ROF CRITICAL			
Thurmond ROF CRITICAL			
ELSE IF (NOV thru JAN)			
Thurmond ROR CRITICAL			
ELSE (NON-CRITICAL PERIOD) Thurmond ROF NON CRITICAL			
Thurmond ROR NON CRITICAL			
□ → IF (DroughtTrigger=1(DRY))			
DRY_Shoals Min DRY_Millhaven Min-Pulse			
DRY_Clyo min			
DRY_Millhaven max			
IST Spec 4000-2800 ELSE IF (DroughtTrigger=2)			
DROUGHT_Shoals min			
DROUGHT_Clyo min			
DROUGHT_Shoals max DROUGHT_Millhaven max			
DROUGHT_Shoals min			
DROUGHT_Milliaven min DROUGHT_Clyo min			
DROUGHT_Shoals max			
■ JST Spec 3600-2800			
Weekly System Power			
AugustaMax20-30K			
🖬 AugustaMin3600 🖻 SRS Min 3600			
E - { } April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
E SEASONAL ROC JST E F (FEB)			
Thurmond ROR CRITICAL	Zone Sort Elevation		
		~	
			OK Cancel Apply

Annex B - Screen 133 (ALT5, Conservation Pool Rule Stack)



Annex B - Screen 134 (ALT5, Trigger Level 1 Rule Stack)



Annex B - Screen 135 (ALT5, Trigger Level 2 Rule Stack)

Reservoir Editor - Network: ALT50:Daily Operations			X
<u>Reservoir</u> Edit <u>Operations</u> <u>Zone</u> <u>R</u> ule IF_Block			
Reservoir Thurmond			H A 6 of 6 H H
Physical Operations Observed Data			
Ogeration Set Alt-5	cription		
Zone-Rules Rel. Allac, Outages Star Credif Dec. Sched F	rojected Elev		
➡ IF (DroughtTrigger=1(DRY))	Storage Zone Level 3	Descript	lion
DRY_Milhaven Min-Pulse DRY_Clyo min	Function of Date		Define
DRY_Shoals max DRY_Millhaven max	Date	Top Elevation (ft)	350
□ JST Spec 4000-2800	01Apr	322.0	340-
DROUGHT_Shoals min	15Dec	322.0 320.0	€ 335
DROUGHT_Milliaven mill DROUGHT_Clyo min			ê 330
DROUGHT_Shoals max DROUGHT Millhaven max			à 325
□ JST Spec 3800-2800			315
DROUGHT_Shoals min			310 310
DROUGHT_Millhaven min DROUGHT_Clyo min			Jan Mar May Jul Sep Nov
DROUGHT_Shoals max			
□ JST Spec 3600-2800			
Weekly System Power			
AugustaMax20-30K			
- Di AugustaMin3600 - Di SRS Min 3600			
E - {} April Fish Spawn Ops_Con			
□ □ Spawn_MaxRel=Inflow			
E → F (FEB)			
Thurmond ROR CRITICAL			
ELSE IF (APRIL)			
Thurmond ROR CRITICAL			
Thurmond ROF CRITICAL			
Winter JST ROF 200			
Thurmond ROF NON CRITICAL			
Environmental Ops Alt-5			
DRY_Shoals Min			
DRY_Clyo min			
DRY_Shoals max DRY_Millhaven max			
DROUGHT_Shoals min			
DROUGHT_Millnaven min			
DROUGHT_Shoals max DROUGHT Millhaven max			
JST Spec 3800-2800			
DROUGHT_Shoals min			
DROUGH I_Milihaven min DROUGHT_Clyo min			
DROUGHT_Shoals max DROUGHT_Millhaven max			
■ JST Spec 3600-2800		-	
Weekly System Power	Zone Sort Elevation		
maclive	11	1	
			OK Cancel Apply

Annex B - Screen 136 (ALT5, Trigger Level 3 Rule Stack)



Annex B - Screen 137 (ALT5, Inactive Pool Definition)



Annex B - Screen 138 (ALT5, Conservation Seasonal Rate of Change, Thurmond, Rate of Rise Critical Rule)



Annex B - Screen 139 (ALT5, Conservation Seasonal Rate of Change, Thurmond, Rate of Fall Critical Rule)



Annex B - Screen 140 (ALT5, Conservation Seasonal Rate of Change, Thurmond, Rate of Fall Non-Critical Rule)



Annex B - Screen 141 (ALT5, Conservation Seasonal Rate of Change, Thurmond, Rate of Rise Non-Critical Rule)


Annex B - Screen 142 (ALT5, Dry Conditions, Shoals, Min Rule)

Reservoir Editor - Network: ALT50:Daily Operations			
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond - Description			
Physical Operations Observed Data			
Operation Set Alt-5	ription		
Zone-Rules Rel, Allac, Outages Star Credit Dec. Sched. Pr	ojected Elev		
🛃 Induced Surcharge 🔗	Operates Release From	n: Thurmond	
- 🖻 Thurmond IS	Rule Name: poy usu	Description:	
AugustaMax20-30K		laven min-Puise Description.	Modified to accomodate Ciyo May 15 []
	Function of: Date		Define
SRS Min 3600	Limit Type: Minimum	▼ Interp.: Step ▼	
Flood Control			14,000
AugustaMar20-30K	Downstream Location:	Millhaven	
Thurmond Min L0	Parameter:	Flow	
AugustaMin3600	-		12,000-
SRS Min 3600	Date	Flow (cfs)	
Conservation	01Jan	5000.0 ×	
AugustaMay20-30K	02Jan	2000.0	11-11-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-
Thurmond Min L0	16 Jan	2000.0	10,000-
AugustaMin3600	01Feb	5000.0	
- 🔲 SRS Min 3600	02Feb	3400.0	
April Fish Spawn Ops_Con	15Feb	5000.0	8,000-
	16Feb	3400.0	6
E-{} SEASONAL ROC JST	01Mar 02Mar	3400.0	5
Ē- ➡ IF (FEB)	15Mar	5000.0	
Thurmond ROR CRITICAL	16Mar	3400.0	ш 6,000Ч
Thurmond ROF CRITICAL	01Apr	5000.0	anna ann an a
Thurmond ROE CRITICAL	02Apr	3400.0	
Thurmond ROR CRITICAL	15Apr	3400.0	4,000
ELSE IF (OCTOBER)	01May	5000.0	
Thurmond ROF CRITICAL	02May	3400.0	
Thurmond ROR CRITICAL	15May	12000.0	2 000
Winter JST ROF 200	19May	3400.0	2,000
Thurmond ROR CRITICAL	02.lun	3400.0	
ELSE (NON-CRITICAL PERIOD)	15Jun	5000.0	
Thurmond ROF NON CRITICAL	16Jun	3400.0	lon Mou Con
Environmental Ons Alt-5	01Jul	5000.0	Jan way Jep
⇒ IF (DroughtTrigger=1(DRY))	15 Jul	5000.0	Period Average Limit Edit.
DRY_Shoals Min	16Jul	3400.0	Liour of Dou Multiplion
DRY_Millhaven Min-Pulse	01Aug	5000.0	Hour of Day Multiplier
DRY_Ciyo min	02Aug	3400.0	Day of Week Multiplier Edit
DRY_Millhaven max	15Aug	3400.0	Seasonal Variation Edit
	01Sep	5000.0	Flow Contingency Edit.
➡ ➡ ELSE IF (DroughtTrigger=2)	02Sep	3400.0	
DROUGHT_Shoals min	15Sep	5000.0	
DROUGHT_Clyo min	01Oct	5000.0	
DROUGHT_Shoals max	02Oct	3400.0	
DROUGHT_Millhaven max	15Oct	5000.0	
■ JST Spec 3800-2800	16Oct	2000.0	
DROUGHT Shoals min	01Nov	5000.0	
DROUGHT_Millhaven min	15Nov	5000.0	
DROUGHT_Clyo min	16Nov	2000.0	
DROUGHT_Shoals max	01Dec	5000.0	
IST Spec 3600-2800	02Dec	2000.0	
ELSE IF (DroughtTrigger<1)	15Dec	5000.0	
Weekly System Power	15000	2000.0	
Level 1			
AugustaMax20-30K			
SRS Min 3600			
F { } April Fish Spawn Ops_Con			
i → IF (Pool <= TargetMin)			
Spawn_MaxRel=Inflow			
E (FEB)			
Thurmond ROR CRITICAL		+	Advanced Options
			Cancel Apply

Annex B - Screen 143 (ALT5, Dry Conditions, Millhaven, Min-Pulse Rule)



Annex B - Screen 144 (ALT5, Dry Conditions, Thurmond, 4000-2800 cfs Rule)

voir Edit Operations Zone Rule IF_Block			
ervoir Thurmond			
sical Operations Observed Data			
eration Set Alt-5	escription		
ne-Rules Rel. Alloc. Outages Stor Gradif Dec. Sched.	Projected Elev		
Induced Surcharge	Operates Release From	n: Thurmond	
AugustaMax20-30K	Rule Name: DRY_Clyc	min Description:	
III Thurmond Min L0 AugustaMin3600	Function of: Date		Define
I SRS Min 3600 Flood Control	Limit Type: Minimum	Interp.: Step ▼	6.200
Thurmond IS AugustaMax20-30K	Downstream Location:	Clyo	
Thurmond Min L0 AugustaMin3600	Parameter:	Flow -	6 000
B SRS Min 3600 Conservation	Date	Flow (cfs)	0,000
Thurmond IS	E 15Mar	6000.0	
Thurmond Min L0	150ct	5000.0	5,800
RS Min 3600			
t j Aprii Fish Spawn Ops_Con → IF (Pool <= TargetMin)			5,600
Spawn_MaxRel=Inflow SEASONAL ROC JST			w (cfs
			윤 5,400
Thurmond ROF CRITICAL			5,200
Thurmond ROR CRITICAL			5.000
Winter JST ROF 200			
			4 900
Thurmond ROR NON CRITICAL			Jan May Sep
F (Proughtrigger=1(DRY))			Period Average Limit Edit
DRY_Milhaven Min-Pulse			Hour of Day Multiplier Edit
DRY_Shoals max			Day of Week Multiplier Edit
DRY_Millhaven max JST Spec 4000-2800			Flow Contingency
➡ ELSE IF (DroughtTrigger=2) ■ DROUGHT_Shoals min			
DROUGHT_Millhaven min DROUGHT_Clyo min			
DROUGHT_Shoals max DROUGHT_Millhaven max			
■ JST Spec 3800-2800			
DROUGHT_Shoals min			
DROUGHT_Clyo min			
DROUGHT_Shidas filax			
Im Weekly System Power			
🔲 AugustaMax20-30K 🗎 AugustaMin3600			
SRS Min 3600 April Fish Spawn Ops_Con			
i→ → IF (Pool <= TargetMin)			
SEASONAL ROC JST ⇒ ↓ F (FEB)			
Thurmond ROR CRITICAL	-	+	Advanced Options

Annex B - Screen 145 (ALT5, Dry Conditionsk, Clyo, Min Rule)

eservoir Editor - Network: ALISUDaily Operations			
ervoir Thurmond			
sical Operations Observed Data			
eration Set Alt-5 🔹	Description		
ne-Rules Ref. Alloc. Outages Stor Gradif Dec. Sched	Projected Elev		
Induced Surcharge	Operates Release From	: Thurmond	
AugustaMax20-30K	Rule Name: DRY_Sho	als max Description:	
AugustaMin3600	Function of: Date		Define
Flood Control	Limit Type: Maximum	Interp.: Step ▼	20,200
I Thurmond IS AugustaMax20-30K	Downstream Location:	Augusta_Shoals	
 Thurmond Min L0 AugustaMin3600 	Parameter:	Flow	20,150-
Conservation	Date	Flow (cfs)	
Thurmond IS AugustaMax20-30K	E		20,100
Thurmond Min L0			
SRS Min 3600			20,050
→ F(Pool <= TargetMin)			(a)
[] SEASONAL ROC JST			き 20,000 含
Thurmond ROR CRITICAL			E
			19,950 -
Thurmond ROF CRITICAL			10 000-
Thurmond ROF CRITICAL			19,900
ELSE IF (NOV thru JAN)			19.850
Thurmond ROR CRITICAL			
ELSE (NON-CRITICAL PERIOD) Thurmond ROF NON CRITICAL			19,800
Thurmond ROR NON CRITICAL Environmental Ops Alt-5			Jan May Sep
➡ IF (DroughtTrigger=1(DRY)) □ DRY_Shoals Min			Period Äverage Limit Edit.
DRY_Millhaven Min-Pulse DRY_Clyo min			Hour of Day Multiplier Edit
DRY Shoals max			Seasonal Variation Edit.
■ JST Spec 4000-2800			Flow Contingency Edit
DROUGHT_Shoals min DROUGHT_Millbayen min			
DROUGHT_Clyo min DROUGHT_Clyo min			
DROUGHT_Silvars max			
DROUGHT_Shoals min DROUGHT_Millhaven min			
DROUGHT_Clyo min			
DROUGHT_Millhaven max			
ELSE IF (DroughtTrigger<1) Weekly System Power			
Level 1 AugustaMax20-30K			
AugustaMin3600 SRS Min 3600			
{ } April Fish Spawn Ops_Con			
Spawn_MaxRel=Inflow			
			Advanced Option
	*		Advanced Options

Annex B - Screen 146 (ALT5, Dry Conditions, Shoals, Max Rule)



Annex B - Screen 147 (ALT5, Dry Conditions, Millhaven, Max Rule)



Annex B - Screen 148 (ALT5, Drought Conditions, Millhaven, Min Rule)



Annex B - Screen 149 (ALT5, Drought Conditions, Thurmond, 3800-2800 cfs Rule)

Reservoir Editor - Network: ALT50:Daily Operations			X
Reservoir Edit Operations Zone Rule IF_Block			
Reservoir Thurmond			
Physical Operations Observed Data			
Operation Set Alt-5 De	scription		
Zone-Rules Rel, Allac, Outages Star Gredit Dec. Sched.	Projected Elev		
Induced Surcharge	Operates Release From	Thurmond	
AugustaMax20-30K	Rule Name: DROUGHT	Shoals max Description:	
Thurmond Min L0	Function of a		
AugustaMin3600	Punction of. Date		Define
Flood Control	Limit Type: Maximum	Interp.: Step ▼	20 200
Thurmond IS	Downstream Location:	Augusta Shoals	20,200
AugustaMax20-30K	Parameter	Flow	
AugustaMin3600	Landmotor	FIOW	20,150-
- 🕞 SRS Min 3600	Date	Flow (cfs)	
Conservation	01Jan	20000.0 *	
- AugustaMax20-30K			20,100
Thurmond Min L0			
Augustamin3600 SRS Min 3600			20.050
			6
B {} SEASONAL ROC JST			\$ 20,000
⊨ ➡ IF (FEB)			E
Thurmond ROR CRITICAL			10.050
⇒ ELSE IF (APRIL)			19,300
Thurmond ROF CRITICAL			
ELSE IF (OCTOBER)			19,900-
Thurmond ROF CRITICAL			
Thurmond ROR CRITICAL			
Winter JST ROF 200			19,850-
Thurmond ROR CRITICAL			
Thurmond ROF NON CRITICAL			19.800
Thurmond ROR NON CRITICAL			Jan May Sep
Environmental Ops Alt-5			Device Average Limit
DRY_Shoals Min			Pendo Average Limit Edit
DRY_Millhaven Min-Pulse			Hour of Day Multiplier
DRY_Ciyo min			Day of Week Multiplier
DRY_Millhaven max			Seasonal Variation Edit
IST Spec 4000-2800			Flow Contingency Edit
DROUGHT_Shoals min			
DROUGHT_Millhaven min DROUGHT_Olive aris			
DROUGHT_Ciyo min			
DROUGHT_Millhaven max			
■ JST Spec 3800-2800			
DROUGHT_Shoals min			
DROUGHT_Millhaven min			
DROUGHT_Clyo min			
DROUGHT_Millhaven max			
□ JST Spec 3600-2800			
Weekly System Power			
Level 1			
AugustaMax20-30K			
SRS Min 3600			
E {} April Fish Spawn Ops_Con			
-{} SEASONAL ROC JST			
► ➡ IF (FEB)			
		· ·	Advanced Options
			OK Cancel Apply

Annex B - Screen 150 (ALT5, Drought Conditions, Shoals, Max Rule)

ervoir Edit Operations Zone Rule IE Block			
servoir Thurmond			
nysical Operations Observed Data			
peration Set Alt-5 D	escription		[
Zone-Rules Rel, Allac, Outages Star Gradif Day, Sched.	Projected Elev		
Induced Surcharge	Operates Release From	n: Thurmond	
AugustaMax20-30K	Rule Name: DROUGH	T_Millhaven max Description:	
AugustaMin3600	Function of: Date		Define
Flood Control	Limit Type: Maximum		5,050
AugustaMax20-30K	Parameter:	Millhaven	6.010
AugustaMin3600	Dette		5,040
Conservation	E 01Jan	Flow (CIS) 5000.0 ×	5,030
Thumstallas			5 0 20
AugustaMin3600			5,020
April Fish Spawn Ops_Con			5,010-
Spawn_MaxRel=Inflow			£ 5,000
FIF (FEE) For the property of the pro			Flow
			4,990
			4,980
			4,970-
Winter JST ROF 200			4,960
			4 950
Thurmond ROR NON CRITICAL			Jan May Sep
F (DroughtTrigger=1(DRY)) DRY Shoals Min			Period Average Limit Edit
DRY_Millhaven Min-Pulse			Hour of Day Multiplier Edit
DRY_Shoals max			Seasonal Variation Edit
■ JST Spec 4000-2800			Flow Contingency Edit
DROUGHT_Shoals min DROUGHT_Milbaven min			
DROUGHT_Clyo min			
CROUGHT_Millhaven max			
ELSE IF (DroughtTrigger=3)			
DROUGHT_Millhaven min DROUGHT_Killhaven min			
DROUGHT_Shoals max			
■ JST Spec 3600-2800			
Weekly System Power			
AugustaMax20-30K			
SRS Min 3600			
IF (Pool <= TargetMin) Spawn MaxRel=Inflow			
A SEASONAL ROC JST IF (FEB)			
			(

Annex B - Screen 151 (ALT5, Drought Conditions, Millhaven, Max Rule)



Annex B - Screen 152 (ALT5, Drought Conditions, Thurmond, 3600-2800 Rule)

ALT-6



Annex B - Screen 153 (ALT6, Induced Surcharge Pool Rule Stack)

Reservoir Editor - Network: ALT60:Daily Operations				
Reservoir Edit Operations Zone Rule IF_Block				
Reservoir Thurmond				6 of 6 1 H
Physical Operations Observed Data				
Operation Set Alt-6 Des	cription			
Zone-Rules Rel, Allac, Outages Star Gradif Dao, Sonad R	rojected Elev			
Induced Surcharge	Storage Zone Flood C	control Descri	ption	
AugustaMax20-30K Thurmond Min L0	Function of Date			Define
AugustaMin3600 SRS Min 3600	Date	Top Elevation (ft)	350	
Flood Control	01Jan	335.0 *	345-	
AugustaMax20-30K Thurmond Min L0			€ 335	
AugustaMin3600			6 330-	
Conservation			a 325 320	
AugustaMax20-30K Thurmond Min L0			315-	
AugustaMin3600			310 Jan Mar May Jul	Sep Nov
E → April Fish Spawn Ops_Con				
Spawn_MaxRel=Inflow				
Thurmond ROF CRITICAL				
Thurmond ROF CRITICAL				
→ ELSE IF (OCTOBER) Thurmond ROE CRITICAL				
Thurmond ROR CRITICAL				
Winter JST ROF 200				
ELSE (NON-CRITICAL PERIOD)				
Thurmond ROR NON CRITICAL				
IF (DroughtTrigger≈1(DRY))				
DRY_Shoals Min				
DRY_Clyo min				
■ DRY_Millhaven max				
□ JST Spec 5875-2800				
DROUGHT_Millhaven min				
DROUGHT_Shoals max DROUGHT_Millhaven max				
► → ELSE IF (DroughtTrigger=3)				
DROUGHT_Shoals min				
DROUGHT_Clyo min				
DROUGHT_Millhaven max				
Level 1				
AugustaMax20-30K AugustaMin3600				
BRS Min 3600				
□ → IF (Pool <= TargetMin)				
E-{} SEASONAL ROC JST		-	1	
Thurmond ROR CRITICAL	Zone Sort Elevation			
			OK Const	Amelu
			UK Cancel	Abbit

Annex B - Screen 154 (ALT6, Flood Control Pool Rule Stack)



Annex B - Screen 155 (ALT6, Conservation Pool Rule Stack)



Annex B - Screen 156 (ALT6, Thurmond, Trigger Level 1 Rule Stack)



Annex B - Screen 157 (ALT6, Thurmond, Trigger Level 2 Rule Stack)



Annex B - Screen 158 (ALT6, Thurmond, Trigger Level 3 Rule Stack)



Annex B - Screen 159 (ALT6, Drought Level 1, Thurmond, 6875-2800 cfs Rule)



Annex B - Screen 160 (ALT6, Drought Level 2, Thurmond, 5875-2800 cfs Rule)



Annex B - Screen 161 (ALT6, Drought Level 3, Thurmond, 6875-2800 cfs Rule)