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Approval Return Status :

Date :  
Comments

Name :

Reference :

	Sign.						
	Sign.						
	Sign.						
	Sign.						
C	Sign.	WANG	LUAN	NEVO	25/08/09	UPDATED ACCORDING TO 5TH DLM DATED 19/05/2009 AND LETTER 1452/CV-DATDSL-VTTB	GFE
B	Sign.	LIN	LUAN	NEVO	26/02/09	UPDATED ACCORDING TO CLIENT COMMENTS	GFA
A	Sign.	LIN	LUAN	NEVO	25/12/08	ORIGINAL ISSUE	GFA
REV		ESTABLISHED	CHECKED	APPROVED	DATE	MODIFICATIONS	STAT.


VIETNAM ELECTRICITY  
SON LA HYDROPOWER PROJECT

6× 400MW Turbine Generator, 90.9rpm, 78m

PACKAGE 4B-CTC:  
SUPPLY OF PLANT ELECTRO-MECHANICAL EQUIPMENT

CONTRACT NO: 4B-CTC/ASLA-APH/2007

PURCHASER:  
SLaMB

  
EVN

ENGINEER:  
PECC1


SUPPLIER:  
ALSTOM  
HYDRO  
CONSORTION

UNIT SEQUENCE  
FLOW CHART

SCALE

SIZE

SUBSUPPLIER:



ALSTOM

HCN-SLA-00-0EA-FF-00-001

EMPLOYER'SDOCNO.  
INTERDOCNO.

REV  
C

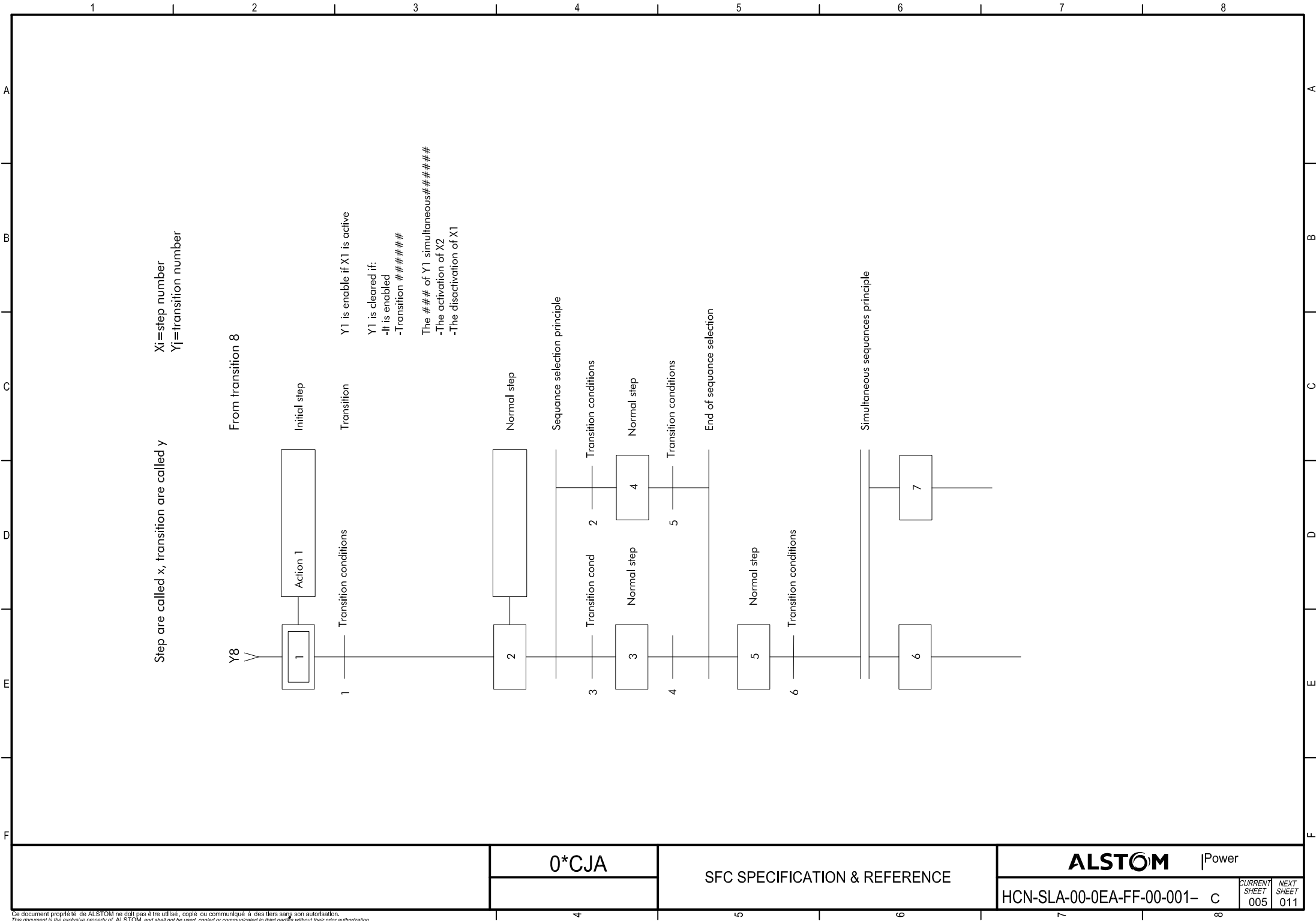
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SFC SPECIFICATION & REFERENCE

ALSTOM

Power

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NOTE:

SEVEN UNIT OPERATION MODES:

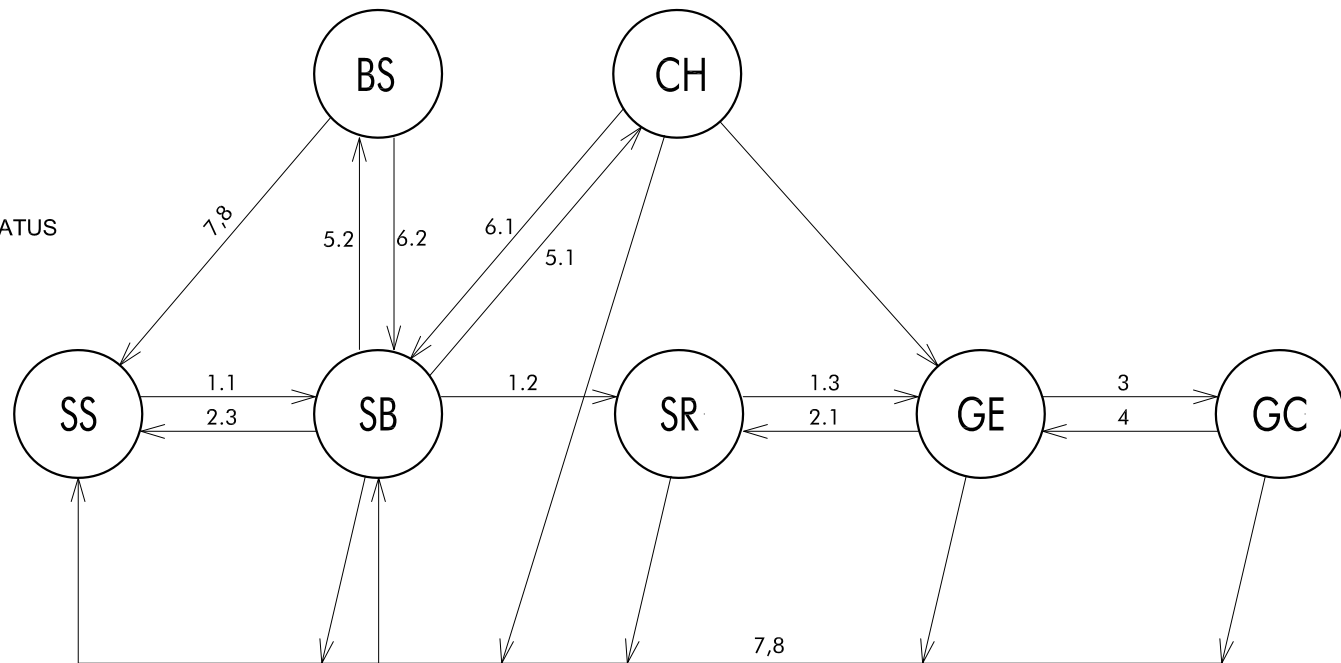
1. STAND STILL (SS)
2. STAND-BY (SB)
3. ROTATING (SR)
4. GENERATING (GE)
5. GENERATOR CONDENSER (GC)
6. LINE CHARGE (CH)
7. BLACK START (BS)

SEVEN UNIT STABLE STATUS:

- SS: STAND STILL STABLE STATUS
- SB: STAND-BY STABLE STATUS
- SR: ROTATING STABLE STATUS
- GE: GENERATING STABLE STATUS
- GC: GENERATOR CONDENSER STABLE STATUS
- CH: LINE CHARGE STABLE STATUS
- BS: BLACK START STABLE STATUS
- INIT: INITIAL STABLE STATUS

SEQUENCES:

- 1: SS -> SB -> SR -> GE
- 2: GE -> SR -> SB -> SS
- 3: GE -> GC
- 4: GC -> GE
- 5: SB -> CH/BS
- 6: CH/BS -> SB  
(SAME AS 7.1 & 7.2 CH/BS -> NMS -> SB)
- 7: MECHANICAL SHUTDOWN (MS)
- 8: ELECTRICAL SHUTDOWN (ES)
- 9: NORMAL OR MECHANICAL STOP (NMS)



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UNIT OPERATION MODE TRANSITIONS  
DIAGRAM

ALSTOM

Power

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CURRENT SHEET 011	NEXT SHEET 012
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	1	2	3	4	5	6	7	8	
A	STANDSTILL STABLE STATUS CONDITIONS (SS)								A
	<u>UNIT MECHANICAL STATUS:</u>				<u>UNIT ELECTRICAL STATUS:</u>				
	Brakes are released				Breaker of electrical brake is switched OFF				0*BAC00GS102=0
	and GOV oil station is OFF(Isolated valve closed)				and Unit circuit breaker is opened				0*BAC00GS101=0
B	and Wicket gates are closed				and Unit no electrical fault				
	and Wicket gates lock is applied				and Excitation filed breaker is opened				
	and Dewatering valve, keeping up dewatering valve are closed				and Earthing switch open before operating unit				
	and Wearing ring seal water flow is OFF(abnormal)				and Disconnecter switch is opened				
	and Upper bearing oil mist suction system is not applied				<u>UNIT OTHER CONDITIONS:</u>				
C	and Thrust bearing oil mist suction system is not applied				Unit mechanical starting condition				
	and Braking dust suction system is not applied				and Unit electrical starting condition				
	and Collector ring dust suction system is not applied				and Unit permanent starting condition				
	and Penstock dewater valve & spiral case dewater valve are closed								
	and Draft tube water level normal								
	and Unit (RV14) Speed = 0								
D	and Unit no Mechanical fault								
E									
F									
				0*CJA	STANDSTILL STATUS CONDITIONS			ALSTOM  Power	
								HCN-SLA-00-0EA-FF-00-001- C	CURRENT SHEET 012NEXT SHEET 013
				4	5	6	7	8	

	1	2	3	4	5	6	7	8	
A	<div>STAND-BY STABLE STATUS CONDITIONS (SB)</div>								A
	<u>UNIT STANDBY STATUS CONDITIONS :</u>				<u>UNIT ADDITIONAL CONDITIONS:</u>				
B	Governor oil station on				Unit mechanical starting conditions				B
	and Unit cooling water system on				and Unit electrical starting conditions				
	and Turbine guide bearing out water flow normal				and Unit permanent starting conditions				
	and Thrust bearing out water flow normal								
	and Air pipe outlet water flow normal								
C	and Upper guide bearing out water flow normal								C
	and Mechanical braking applied								
	and Upper bearing oil mist sunction running								
	and Thrust bearing oil mist suction running								
	and Brake system dust suction running								
	and Collector ring dust suction running								
D	and Generator heater off								D
	and Servomotor lock device released								
	and Wicket gate full closed								
E									E
F									F
			0*CJA		STAND-BY STATUS CONDITIONS		ALSTOM  Power		
							HCN-SLA-00-0EA-FF-00-001- C		
							CURRENT SHEET 013		
							NEXT SHEET 014		

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1	2	3	4	5	6	7	8
A	<div>ROTATING STABLE STATUS CONDITIONS (SR)</div> <div>ROTATING STATUS CONDITIONS:  GCB is open 0*BAC00GS101=0 and Governor system wicket gate lock released and Governing system is ON(Isolated valve open) and Speed is more than 95% and Excitation system is off</div>			<div>LINE CHARGE STABLE STATUS CONDITIONS (CH)</div> <div>LINE CHARGE STATUS CONDITIONS:  500KV GIS CB 80ABD0*GS121 CLOSED and 400V CB 0*BFA01GS101 OPEN and GCB 0*BAC00GS101 is CLOSED and Governing system is ON and Speed is more than 95% and Voltage is more than 95% and Wicket gate is open and Wearing ring water flow is OFF and Dewatering valve, keeping up dewatering valve are closed</div>			
B							
C	<div>GENERATING STABLE STATUS CONDITIONS (GE)</div> <div>GENERATING STATUS CONDITIONS:  GCB is closed 0*BAC00GS101=1 and Governing system is ON(Isolated valve open) and Speed is more than 95% and Voltage is more than 95% and Excitation system is ON and Wicket gate is open and Wearing ring seal water flow is OFF(abnormal) and Dewatering valve, keeping up dewatering valve are closed</div>			<div>BLACK START STABLE STATUS CONDITIONS (BS)</div> <div>BLACK START STATUS CONDITIONS:  500KV GIS CB 80ABD0*GS121 OPEN and 400V CB 0*BFA01GS101 CLOSED and GCB 0*BAC00GS101 is CLOSED and Governing system is ON and Speed is more than 95% and Voltage is more than 95% and Wicket gate is open and Wearing ring water flow is OFF and Dewatering valve, keeping up dewatering valve are closed and Diesel Generator stopped</div>			
D							
E	<div>GENERATOR CONDENSER STABLE STATUS CONDITIONS (GC)</div> <div>GENERATOR CONDENSER STATUS CONDITIONS:  GCB is closed 0*BAC00GS101=1 and Wearing ring seal water flow is ON(normal) and Draft tube water level low and Governing system is ON(Isolated valve open) and Speed is more than 95% and Voltage is more than 95% and Wicket gate is closed</div>						
F							
			0*CJA	SR,GE,GC,BS,CH STATUS CONDITIONS		ALSTOM  Power	
						HCN-SLA-00-0EA-FF-00-001- C	CURRENT SHEET 014 NEXT SHEET 015
			4	5	6	7	8

	1	2	3	4	5	6	7	8	
	STARTUP CONDITIONS FOR GE MODE OPERATION			STARTUP CONDITIONS FOR CH MODE OPERATION					
A	STARTUP CONDITIONS FOR GE MODE OPERATION:			STARTUP CONDITIONS FOR CH MODE OPERATION:					A
	(1) STATUS OF THE UNIT			(1) STATUS OF THE UNIT					
	(2) AND OTHER CONDITIONS			(2) AND OTHER CONDITIONS					
	(1) STATUS OF THE UNIT:			(1) STATUS OF THE UNIT:					
	UNIT IN STABLE STATUS OF "STANDSTILL"			UNIT IN STABLE STATUS OF "STANDSTILL"					
	OR UNIT IN STABLE SB/SR/GC/CH STATUS			(2) OTHER CONDITIONS (FOR UNIT1):					
	AND STARTUP CONDITIONS FOR GE MODE OPERATION FROM SB/SR/GC/CH MODE			AND ABSENCE OF 500kV LINE VOLTAGE					
	(2) OTHER CONDITIONS:			AND LINE DIS 80ABD01_GS303 CLOSED					
	PRESENCE OF MTR 18KV SIDE VOLTAGE			AND UNIT1 LINE CB GS111or GS121 CLOSED					
	AND 500kV GIS RELATED DS & CB CLOSED			AND 400V UNIT AUX. POWER SUPPLY VOLTAGE OK					
	AND 500kV BUSBAR VOLTAGE ON			AND RESERVOIR WATER LEVEL IS NORMAL					
	AND ADEQUATE WATER LEVEL OF RESERVOIRS FOR GENERATING OPERATION								
B									B
	STARTUP CONDITIONS FOR GC MODE OPERATION			STARTUP CONDITIONS FOR BS MODE OPERATION					
	STARTUP CONDITIONS FOR GC MODE OPERATION:			STARTUP CONDITIONS FOR BS MODE OPERATION:					
	(1) STATUS OF THE UNIT			(1) STATUS OF THE UNIT					
	(2) AND OTHER CONDITIONS			(2) AND OTHER CONDITIONS					
	(1) STATUS OF THE UNIT:			(1) STATUS OF THE UNIT:					
	UNIT IN STABLE STATUS OF "STANDSTILL"			UNIT IN STABLE STATUS OF "STANDSTILL"					
	OR UNIT IN STABLE STATUS OF SB/SR/GE			(2) OTHER CONDITIONS (FOR UNIT1):					
	AND STARTUP CONDITIONS FOR GC MODE OPERATION FROM SB/SR/GE MODE			AND ABSENCE OF 500kV LINE VOLTAGE					
	(2) OTHER CONDITIONS:			AND UNIT1 LINE CB GS111 OPEN					
	PRESENCE OF MTR 18KV SIDE VOLTAGE			AND UNIT1 LINE CB GS121 OPEN					
	AND 500kV GIS RRELATED DS & CB CLOSED			AND 400V UNIT AUX. POWER SUPPLY VOLTAGE OK					
	AND 500kV BUSBAR VOLTAGE ON			AND RESERVOIR WATER LEVEL IS NORMAL					
	AND PRESSURE OF DEWATERING AIR TANK IS MORE THAN SPECIFIED VALUE								
C									C
	0*CJA			STARTUP CONDITIONS FOR GE,GC,CH/BS MODE OPERATION		ALSTOM  Power			
						HCN-SLA-00-0EA-FF-00-001- C			
						CURRENT SHEET 015			NEXT SHEET 016
D									D
E									E
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### CONTROLLER MECHANICAL FAULT CONDITIONS:

### 1) FAULT FROM GOVERNOR:

GOVERNOR OIL SUMP TANK TOO LOW LEVEL(CL004S)  
OR 125% SECOND OVERSPEED DETECTION  
OR GOVERNOR OIL PRESSURE TANK PRESSURE TOO LOW  
OR GOVERNOR PRESSURE TANK OIL LEVEL(CL052S) TOO LOW  
OR GOVERNOR PRESSURE TANK OIL PRESSURE LOW(CP052S)  
OR GOVERNOR PRESSURE TANK OIL PRESSURE TOO HIGH(CP057S)  
OR GOVERNOR PRESSURE TANK OIL LEVEL LOW(CL053S)  
OR MAIN AND STANDBY GOVERNOR OIL PUMPS AT FAULT  
OR GOV RD29 TADT MAJOR FAULT  
OR SHARE PIN BROKEN

## 2) FAULT FROM TURBINE:

- OR MAIN SHAFT SEAL INPUT WTR FLOW(CF402S) TOO LOW
- OR DRAFT TUBE WATER LEVEL TOO HIGH
- OR ACTIVE POWRE TO HIGH IN GC MODE
- OR WEARING SEAL FLOW DELAY IN CONDENSER TOO LOW
- OR VIBRATION LEVEL FOR EACH LOCATION INSTALLED IN TURBINE & GENERATOR
- OR HEAD COVER WTR LVL STOP UNIT TOO HIGH
- OR TURB GUIDE BRG OIL LEVEL(CL402S) TOO LOW
- OR THRUST BEARING OIL LVL(CL302S) TOO LOW
- OR UPPER GUIDE BRG OIL LVL(CL312S) TOO LOW

### 3) FAULT FROM MONITORING SYSTEM :

BEARING VIBRATION GROUP TOO HIGH  
OR SHAFT DISPLACEMENT GROUP TOO HIGH  
OR AIR GAP ALARM GROUP TOO HIGH

#### 4) FAULT FROM UNIT COOLING WATER SYSTEM :

THRUST BRG OUT WTR FLOW LOW TIME DELAY TRIP  
OR TURB GDE BRG OUT WTR FLW LOW TIME DELAY TRIP  
OR AIR PIPE OUTLET WTR FLOW LOW TIME DELAY TRIP  
OR UNIT COL WTR OUT PP PRES LOW TIME DELAY TRIP  
OR UP GUDE BRG OUT WTR FLOW LOW TIME DELAY TRIP

### 5) TEMPERATURE MONITORING :

- OR AIR COOLER INLET TEMP TOO HIGH
- OR UPPER GUIDE BEARING OIL TEMP TOO HIGH
- OR UPPER GUIDE BEARING OUTLET COOLING WATER TEMP TOO HIGH
- OR STATOR WINDING TEMP TOO HIGH
- OR STATOR CORE TEMP TOO HIGH
- OR AIR COOLER HOT AIR TEMP TOO HIGH
- OR AIR COOLER COOL AIR TEMP TOO HIGH
- OR HEAT EXCHANGER OUTLET COOL WATER TEMP TOO HIGH
- OR THRUST BEARING OIL TEMP TOO HIGH
- OR THRUST BEARING OUTLET COOL WATER TEMP TOO HIGH
- OR TURBINE GUIDE BEARING OIL TEMP TOO HIGH
- OR TURBINE GUIDE BEARING OUTLET COOL WATER TEMP TOO HIGH
- OR SHAFT SEAL TEMP TOO HIGH
- OR GOVERNOR SUMP TANK OIL TEMP TOO HIGH

6) FAULT FROM OTHER SYSTEM :

INTAKE GATES FAULT  
OR TAILRACE GATE FAULT  
OR POWER HOUSE FLOODING LEVEL TOO HIGH  
OR UNIT STARTING UP SEQUENCE OVERTIME

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MECHANICAL STOPPING REQUEST CRITERIA

 					
HCN-SLA-00-0EA-FF-00-001- C	<table border="1"> <tr> <td>CURRENT SHEET</td> <td>NEXT SHEET</td> </tr> <tr> <td>016</td> <td>017</td> </tr> </table>	CURRENT SHEET	NEXT SHEET	016	017
CURRENT SHEET	NEXT SHEET				
016	017				

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CURRENT SHEET	NEXT SHEET
016	017

	1	2	3	4	5	6	7	8	
A	<div>ELECTRICAL SHUTDOWN REQUEST CRITERIA</div>								A
	<u>CONTROLLER EMERGENCY FAULT CONDITIONS:</u>								
	1) ELECTRICAL FAULT FROM GENERATOR AND MAIN TRANSFORMER AND EXCITATION				3) FAULT FROM OTHER SYSTEM				
B	GENERATOR FIRE DETECTION OR MTR FIRE DETECTION OR MTR BUCHHOLZ 2nd STAGE FAULT OR EXCITATION TRANSFORMER 2ND TEMPED OR 2ND STAGE EXCITATION TRIPPED OR EXCITATION ROTOR EARTH FAULT OR EXCITATION FIELD FLASH FAILURE TRIP OR EXC REGULATOR1&2 WATCHDOG FAULT OR MAIN TRF. OIL PRESSURE 1OR 2 TOO HIGH OR MTR WINDING THERMAL OVERLOAD OR MAIN TRF. OIL THERMAL OVERLOAD				UNIT GCB POSITION DISCREPANCY FOR 3-PHASE OR FAULT OR 18KV/400V TRANSFORMER TEMP TOO HIGH OR UNIT EMERGENCY STOP BUTTON TRIP OR UNIT LCU WATCHDOG FAULT TRIP OR UNIT MECHANICAL STOP SEQUENCE OVERTIME OR POWER HOUSE FLOODING LEVEL TOO HIGH				B
	2) FAULT FROM GVERNOR SYSTEM				4) PROTECTION SYSTEM TRIP				
C	GOVERNOR EMERGENCY STOP PUSH BUTTON OR GOVERNOR MAIN AND STANDBY T-SLG UPC MAJOR FAULT OR GOVERNOR POWER MODULES FAULT OR SHAFT CURRENT ISOLATING DEVICE FAULT OR SHAFT CURRENT OUTPUT TOO HIGH OR OVERSPEED POSITION(CG022S) DETECTED OR RV09 140% OVERSPEED PROTECTION TRIP				OR UNIT P922-IPB WATCHDOG OR UNIT P345 WATCHDOG & UNIT P343 WATCHDOG OR UNIT PROTECTION I P631 WATCHDOG & UNIT PROTECTION II P631 WATCHDOG OR P634 FOR MAIN TRF WATCHDOG OR P633-1 FOR MTR WATCHDOG OR UNIT P633 FOR 6.3KV WATCHDOG OR UNIT P141FOR 6.3KV WATCHDOG OR 400V TRANSFORMER P141-1 WATCHDOG & 400V TRANSFORMER P141-2 WATCHDOG OR UNIT P633-87GT WATCHDOG OR ROTOR GROUNDING PROT WATCHDOG OR EXC TRF OVERCURENT PROT WATCHDOG OR EXCITATION TRF. P141 WATCHDOG				C
D									D
E									E
F									F
			0*CJA		ELECTRICAL SHUTDOWN REQUEST CRITERIA			ALSTOM  Power	
					HCN-SLA-00-0EA-FF-00-001- C			CURRENT SHEET 017	NEXT SHEET 018

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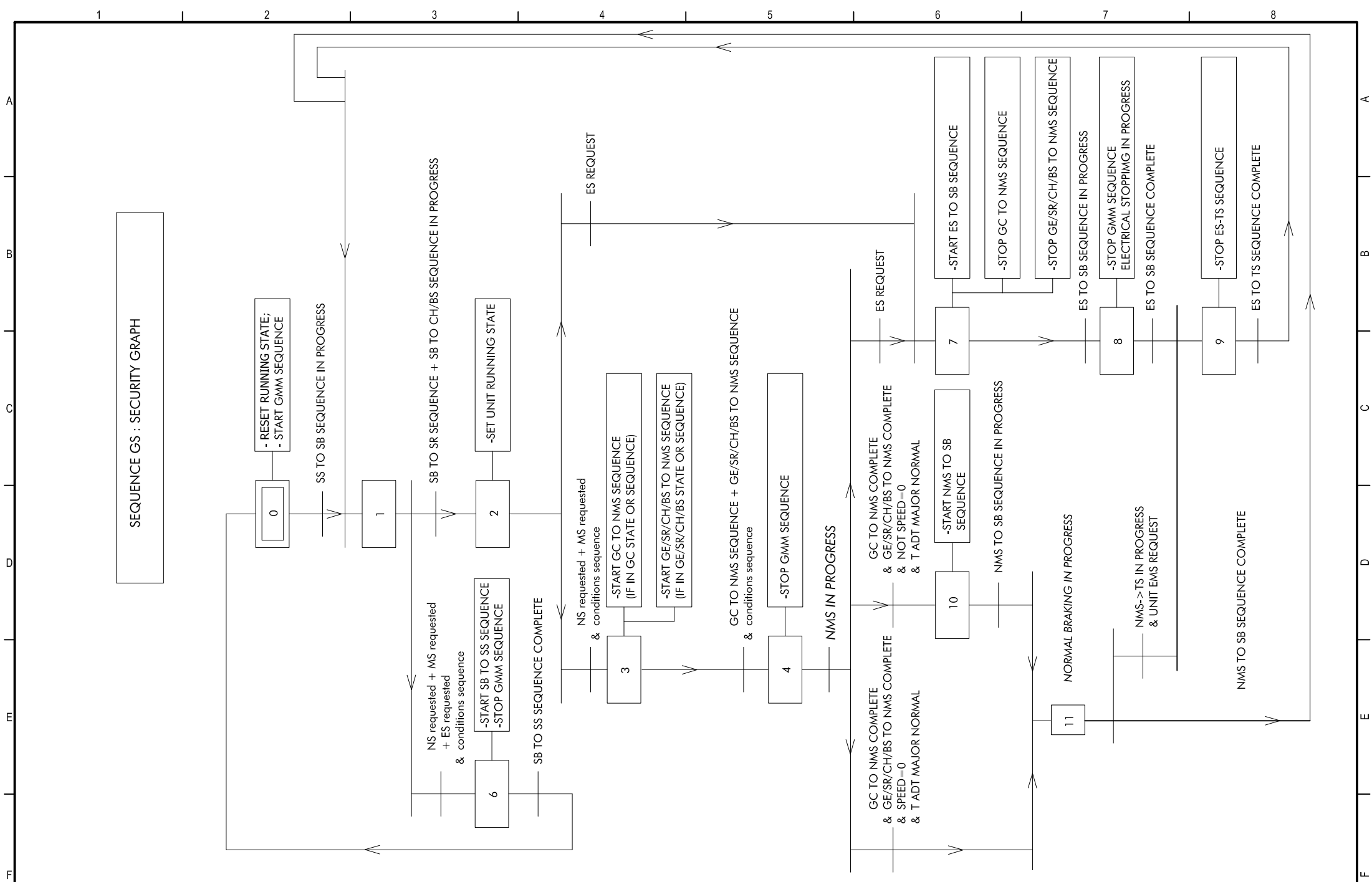
1	2	3	4	5	6	7	8	
A	<div>INTAKE GATE SHUTDOWN CONDITIONS CRITERIA</div>							A
	<div>INTAKE GATE SHUTDOWN CONDITIONS :</div>							
	<div>MECHANICAL OVERSPEED</div>							
	<div>OR 140% OVERSPEED TRIP</div>							
	<div>OR P-TANK C-ISOLATING VALVE OIL LEVEL TOO LOW</div>							
B	<div>OR WICKET GATE CLOSE OVER TIME FAIL</div>							B
	<div>OR SHEAR PIN BROKEN CONTACTOR</div>							
	<div>OR POWER HOUSE FLOODING LEVEL TOO HIGH</div>							
	<div>OR SPEED DOWN OVERTIME</div>							
C								C
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			0*CJA	EMERGENCY SHUTDOWN REQUEST CRITERIA			ALSTOM  Power	
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A	<div>MECHANICAL STARTING CONDITION CRITERIA</div>								A
	<u>UNIT MECHANICAL STANDBY STATUS:</u>								
B	Bearing vibration group no high		and Governor pump(1-3) control level is remote		and Unit cooling water system PLC is normal				B
	and Shaft displacement group no high		and Governor pump(1-3) control power is normal		and Unit cooling water strainer				
	and Air gap alarm group no high		and Governor pump(1-3) motor is normal		AT001,AT002,AT003,AT004 is normal				
	and Itake gate is full opened		and Sump tank oil moisture is normal		and Unit cooling water in PP pressure is normal				
	and Tailace gate is full opened		and GOV pump1,2,3 oil filter clog no blocked		and Thrust guide bearing oil level no low				
C	and Main or secondary T-SLG in operation		and GOV oil cooler clog no blocked		and Thrust guide bearing oil moisture 2ND normal				C
	and R300N-A main T-SLG is running		and GOV DI-oil filter clog no blocked		and Upper guide bearing oil level no low				
	and R129N main T-SLG UPC minor normal		and P-tank buildup oil level is normal		and Upper guide bearing oil moisture 2ND normal				
	and R300N-A standby T-SLG local auto is running		and P-tank buildup oil pressure is normal		and Unit heater is normal & available				
	and R129N standby T-SLG UPC minor normal		and Head cover control Local PLC is normal		and Maintance seal pressure is normal				
	and RV17 115% overspeed no detected		and Shaft seal valve no fault		and Brake air source pressure is normal				
D	and RD129 TADT minor is normal		and Turbine guide bearing oil level is normal		and oil mist & dust sunction system are normal				D
	and PS1 power module is normal		& no low & no high		& available				
	and PS2 power module is normal		and Turbine guide bearing oil moisture 2ND is normal		and Thrust guide bearing oil level no low				
	and R29N main T-SLG UPC major is normal		and Shaft seal input water flow is normal		and Thrust guide bearing oil moisture 2ND normal				
	and R29S standby T-SLG UPC major is normal		and Shaft seal input water pressure is normal		and Upper guide bearing oil level no low				
E	and RD29 TADT major is normal		and Wearing ring seal valve AA420 is auto		and Upper guide bearing oil moisture 2ND normal				E
	and GOV oil station is normal								
F			0*CJA		MECHANICAL STARTING CRITERIA		ALSTOM  Power		F
							HCN-SLA-00-0EA-FF-00-001- C		
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	1	2	3	4	5	6	7	8	
A	ELECTRICAL STARTING CONDITION CRITERIA								A
	ELECTRICAL STARTING CONDITIONS CRITERIA :								
B	<div> <div> Shaft current isolating device is normal  and Shaft current output no high  and 18KV/0.4KV transformer temp no high  and 0.4KV busbar voltage is normal  and Unit synchrinizer device is ready  and Excitation TRF 1ST temp no high  and Under/over excitation no fault  and Excitation stator current limiation nofault  and Excitation U/F limiation no fault  and Excitation thyristor bridge no fault  and 2nd stage electrical braking no fault  and 1st stage excitaion is normal  and Excitation no overcurrent fault  and Excitation regulator watchdog normal  and Excitation system is remote  and Electrical braking cubicle door is closed </div> <div> GCB &amp; DS control level is remote  and GCB cooling unit outlet temperature no high  and GCB SF6 gas refill no active  and GCB long time pmup motor running no active  and GCB pahse sequence relay no detected  and GCB DC control power is normal  and GCB pump motor power supply is normal  and DS&amp;ES control power is normal  and GCB transmit relay power supply is normal  and ES &amp; DS motor protection switch no trip  and GCB blocking opening &amp; closing no active  and GCB SF6 gas blocking no active  and GCB cooling water voltage normal  and EBCB control level is remote  and GCB cooling water system no fault </div> <div> and P345 CTS connected  and P345 VTS connected  and Unit P345 watchdog normal  and Unit Protection I P631 watchdog normal  and Electrical trip DC power  and Unit P634 for MTR watchdog normal  and 0.4KV TRF P141-1/2 watchdog normal  and 6.3KV TRF P633 watchdog normal  and P343 VTS connected  and P343 CTS connected  and P343 watchdog nornal    and Unit Protection II P631 watchdog normal  and Unit P633-1 for MTR watchdog normal  and Unit P391 watchdog normal  and Excitation TRF P141 watchdog normal  and Unit protection ELEC TRIP DC PWR disappear  and Grounding protection watchdog noraml  and Exc TRF overcurrent watchdog normal  and Main TRF cooling system normal &amp; available  and Main TRF cooling fan /pump group normal  and Main TRF online monitor system normal  and Main TRF oil level normal  and Main TRF operation normal  and Main TRF. buchholtz 1st stage normal  and Main TRF oil terminal overload normal  and Main TRF winding thermal normal </div> </div>								B
C									C
D									D
E									E
F									F
				0*CJA	ELECTRICAL STARTING CRITERIA			ALSTOM  Power	
								HCN-SLA-00-0EA-FF-00-001- C	<div> <div>CURRENT SHEET</div> <div>020</div> </div> <div> <div>NEXT SHEET</div> <div>021</div> </div>
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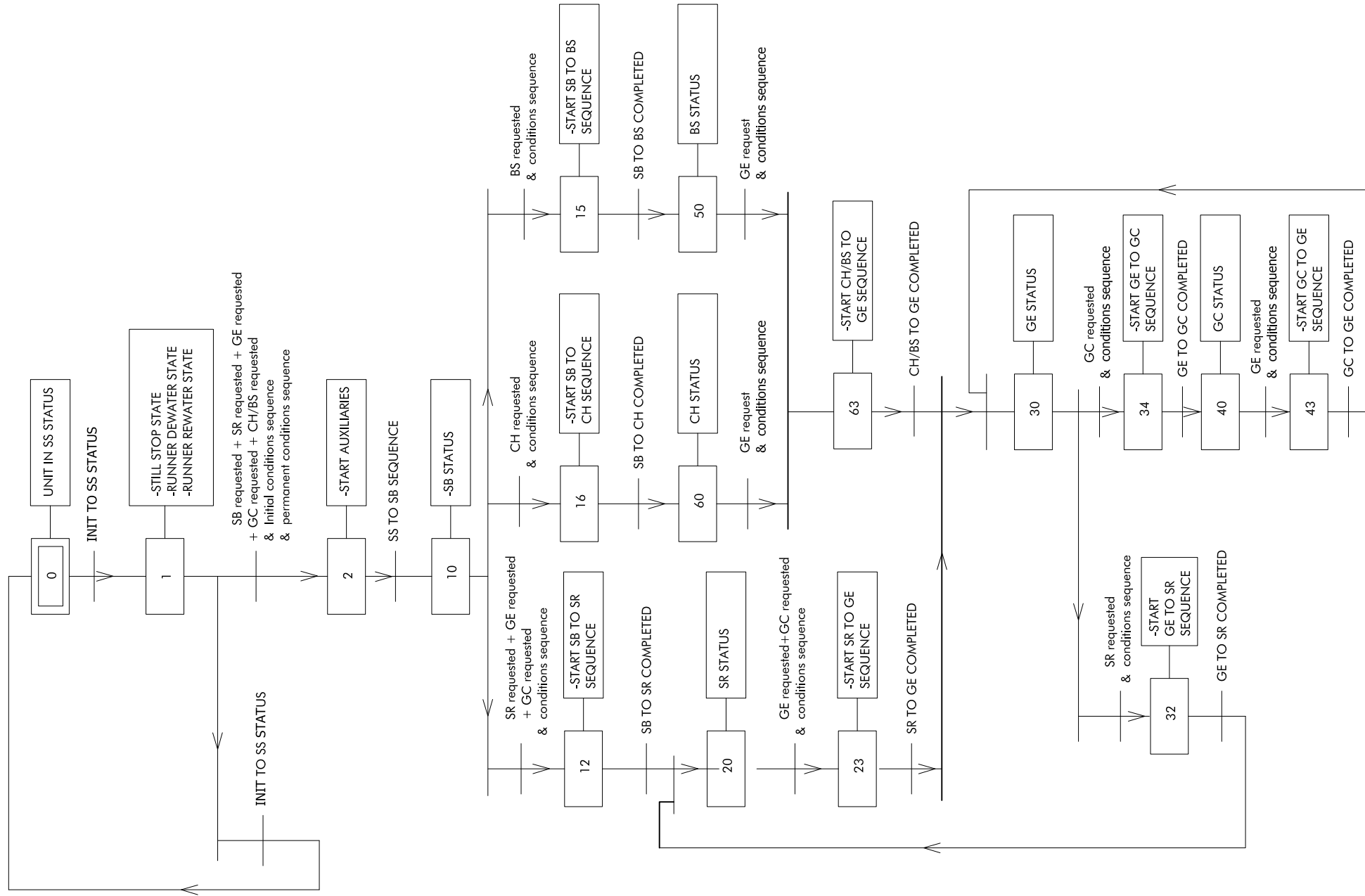
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1 2 3 4 5 6 7 8

SEQUENCE GMM : GENERAL MAIN MANAGEMENT



A  
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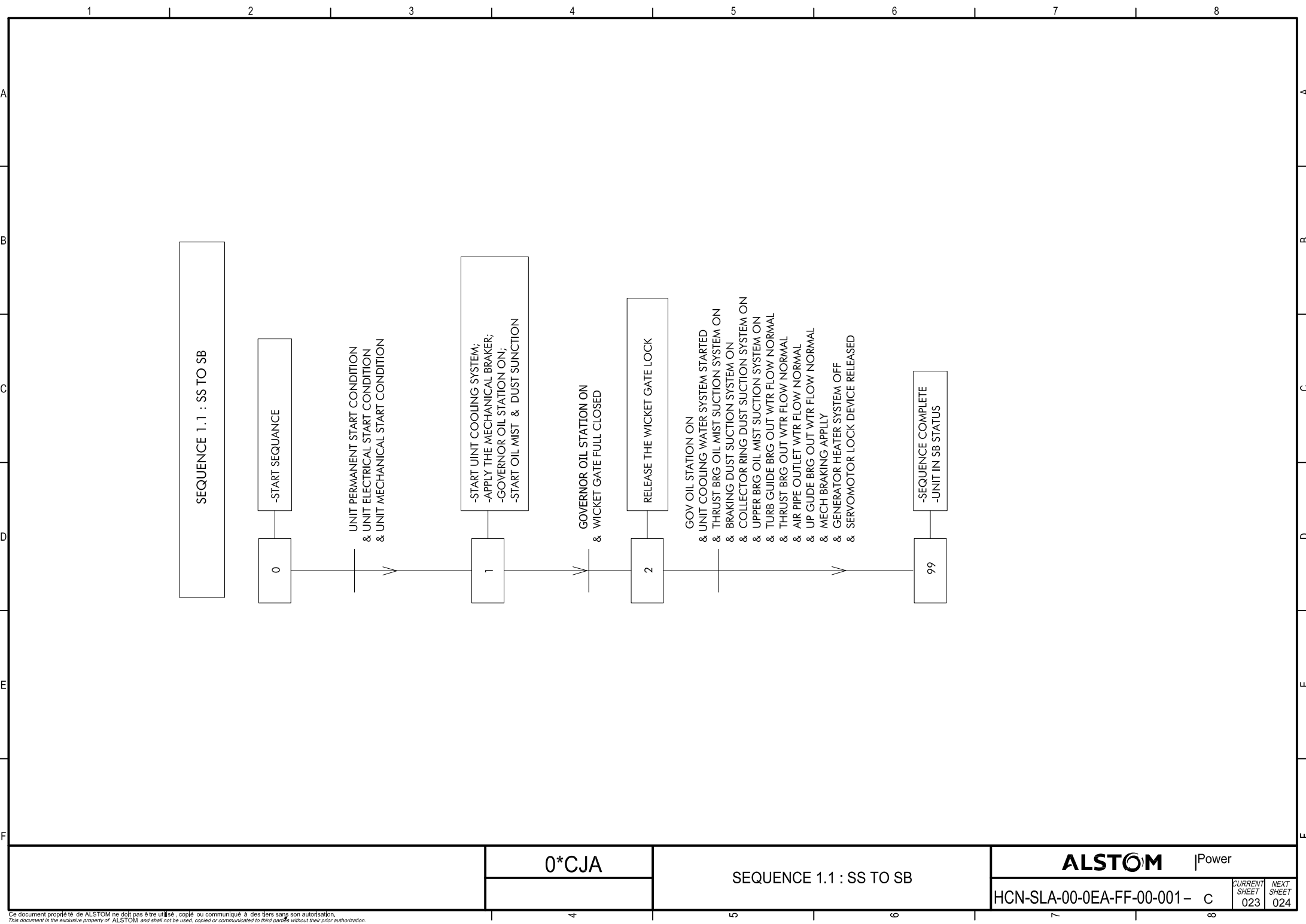
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SEQUENCE GMM :  
GENERAL MAIN MANAGEMENT

ALSTOM |Power

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SHEET 022  
NEXT  
SHEET 023



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SEQUENCE 1.1 : SS TO SB

ALSTOM

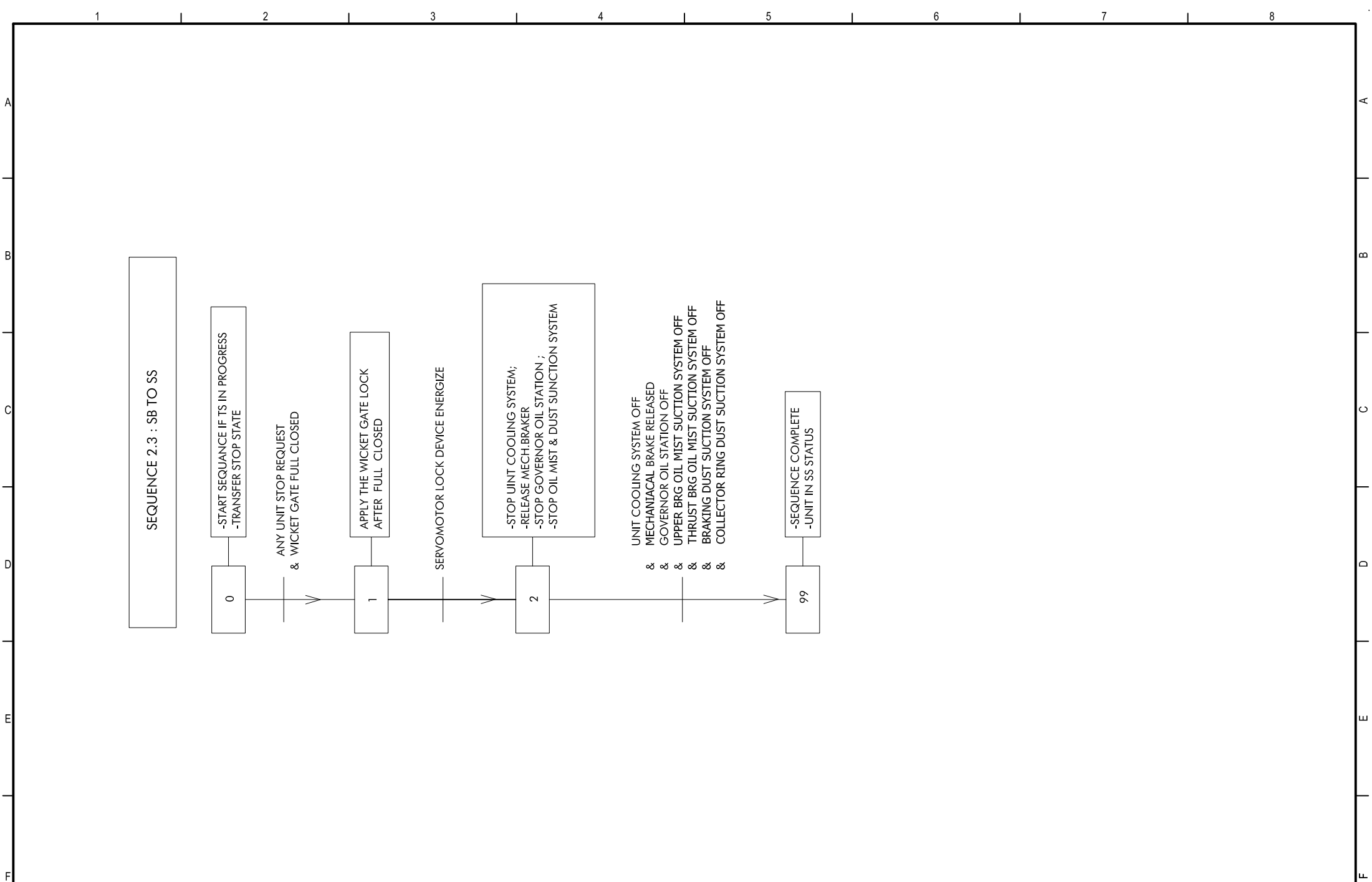
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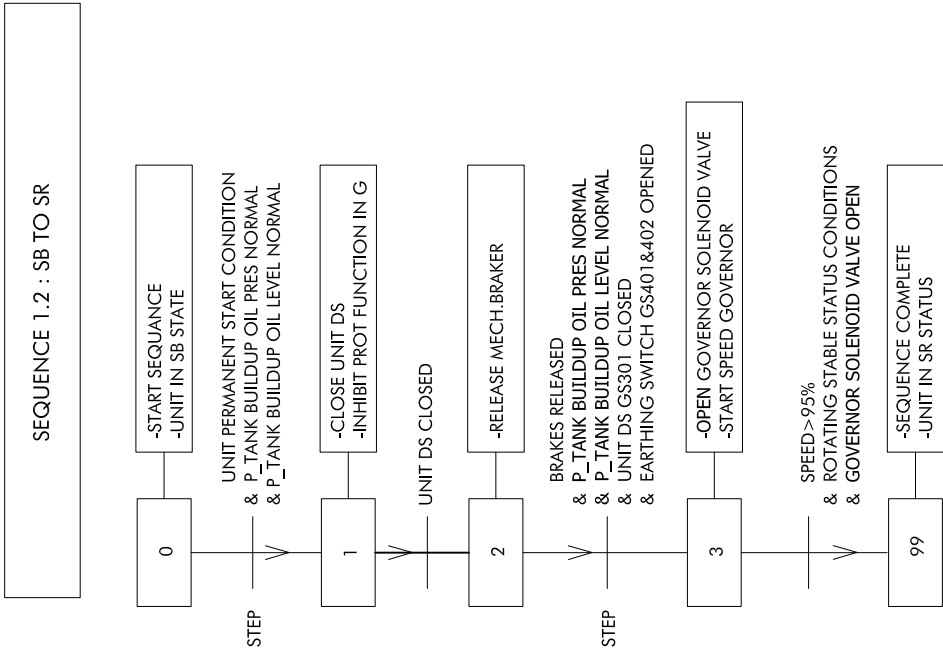
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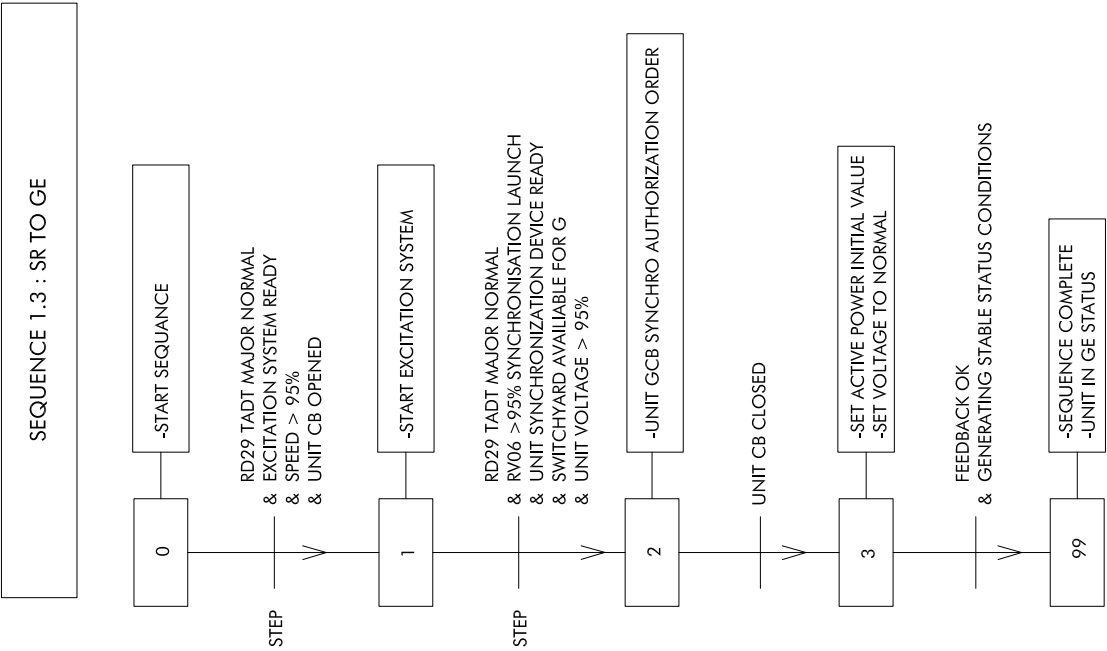
NEXT SHEET024

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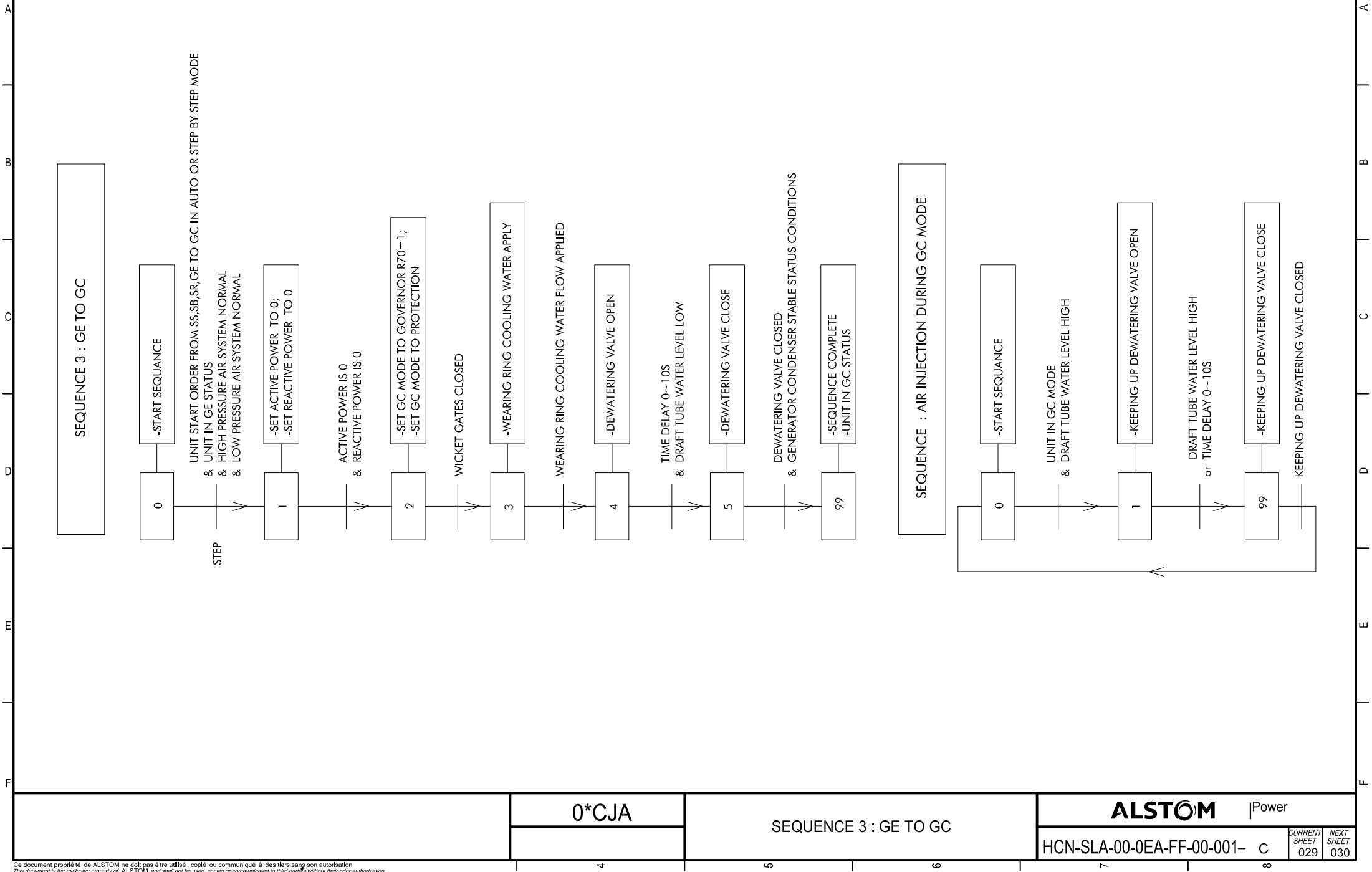




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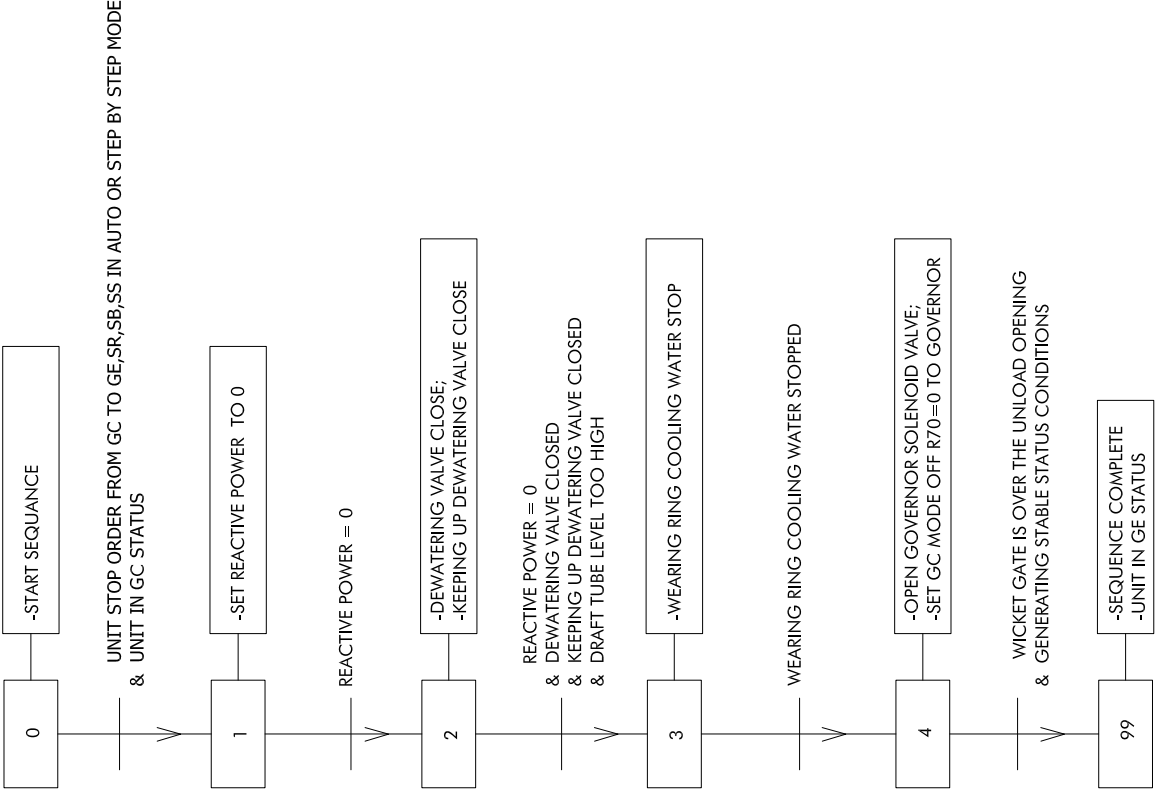
A  
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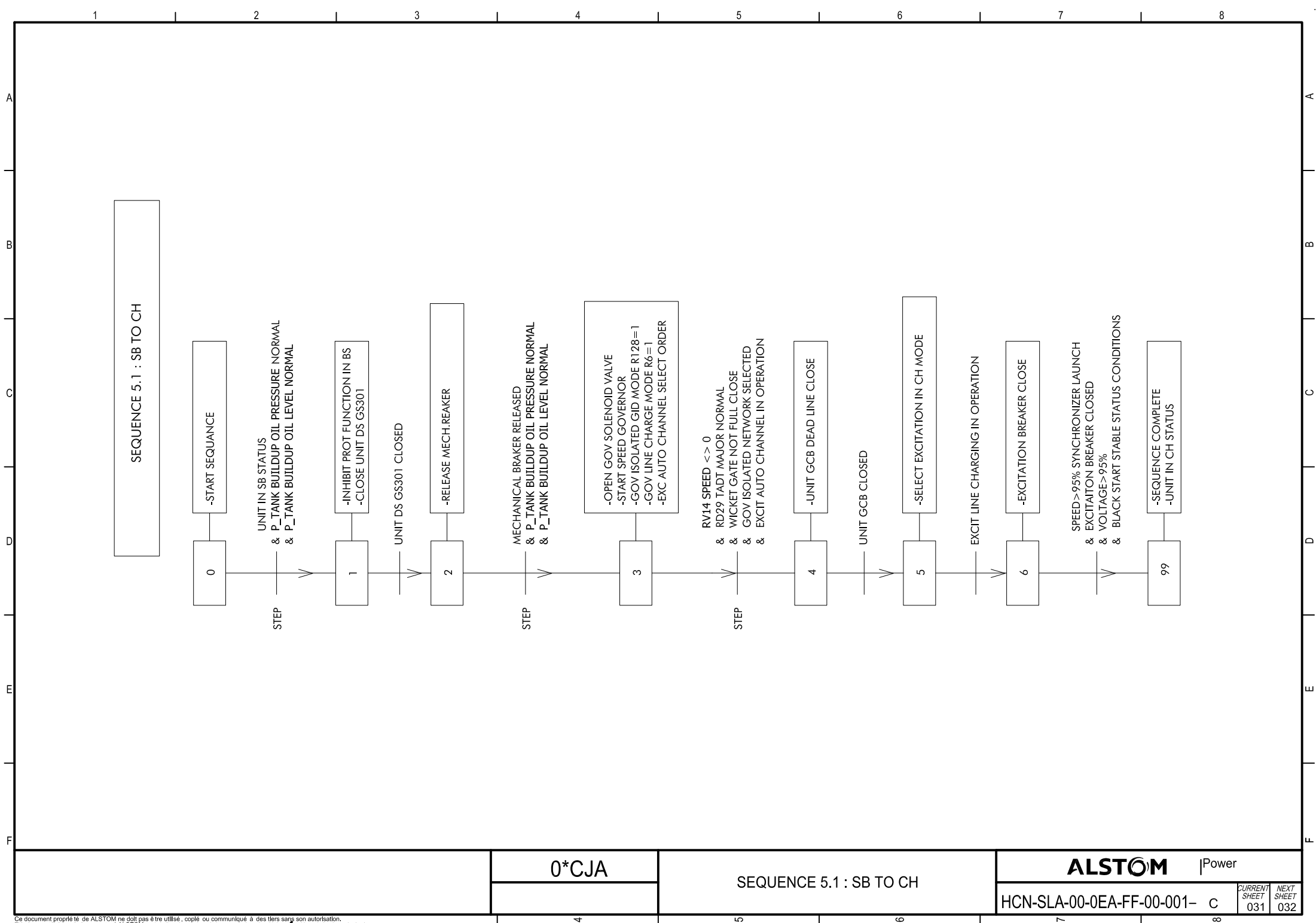


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SEQUENCE 4 : GC TO GE

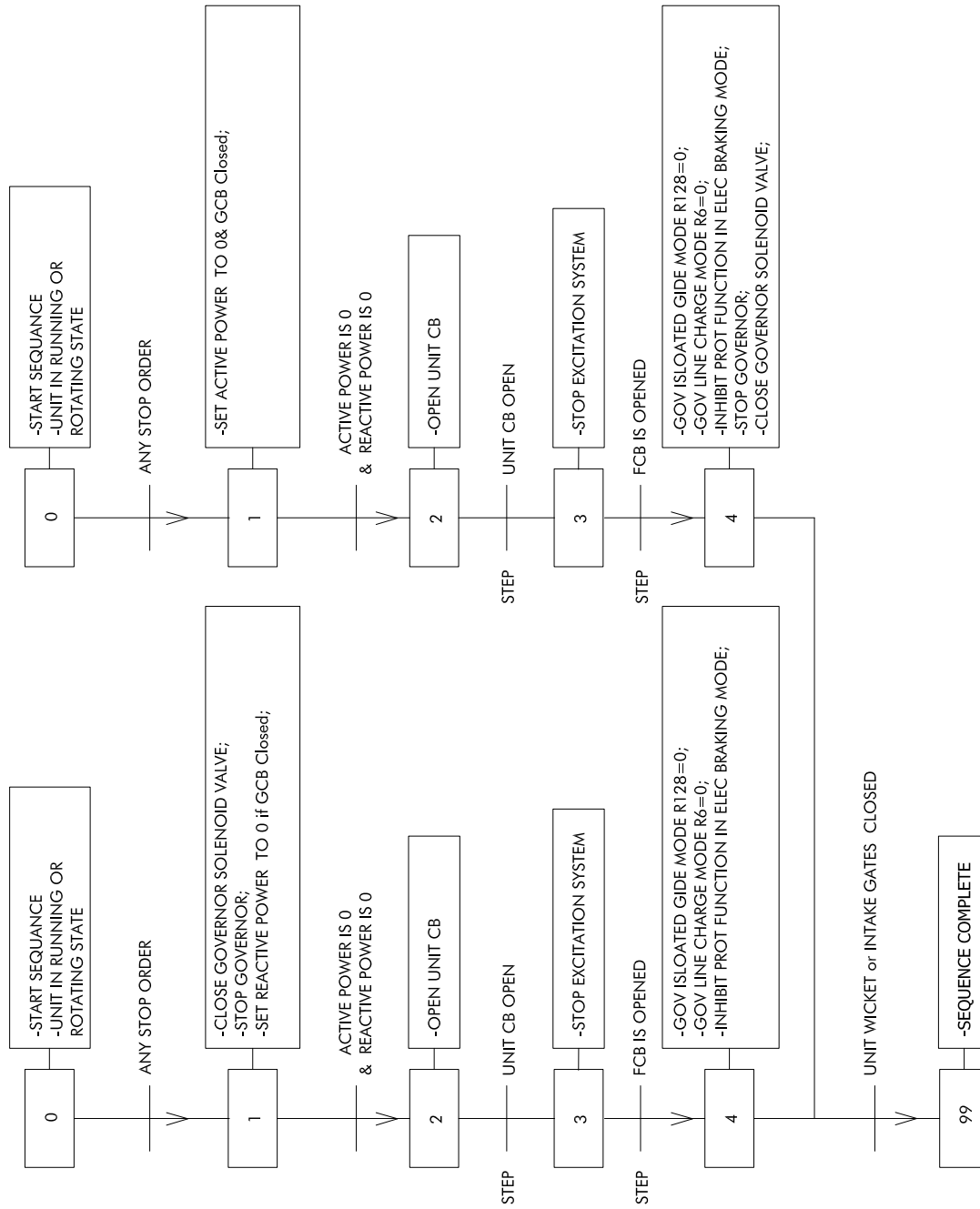








# SEQUENCE 7.1 : GE/SR/CH/BS TO NMS



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SEQUENCE 7.1 : GE/SR/CH/BS TO NMS

ALSTOM |Power

HCN-SLA-00-0EA-FF-00-001- C

CURRENT SHEET 033 NEXT SHEET 034

