Table 7.1-8—SAS Variables included within the Scope of Safety Analysis

Safety Function	Variables to be Monitored	Range of Variables
EFW Level Control	SG Level (WR)	0-100% MR
EFWS pump overflow protection	EFW Pump Discharge Flow	0-450 gpm
Steam generator MSRCV regulation during pressure control	Pressurizer Pressure (NR)	1615-2515 psia
	Hot Leg Pressure (WR)	15-3015 psia
	Hot Leg Temperature (WR)	32-662 °F
	Hot Leg Temperature (NR)	536°F–662°F
	Hot Leg Loop Level	0-30.71 in
	Neutron Flux-Self Powered Neutron Detectors	0.5–200% NP
	Cold Leg Temperature (NR)	32°F - 662°F
	RCP Speed	800 -1600 rpm
	RCS Loop Flow	0-120% NF
	RCCA position	0–100% Insertion
	Pressurizer Pressure (NR)	1615-2515 psia
	Neutron Flux-Power Range Detectors	0.5–200% NP
	Neutron Flux-Intermediate Range Detectors	5 x 10E-6–60% NP
	Pressurizer Level	0-100% MR
	SG Pressure	15–1615 psia
	SG Level (NR)	0-100% MR
	Containment Service Compartment Pressure (NR)	-3 psig to +7 psig
	Containment Equipment Compartment Pressure	-3 psig to +7 psig
	Cold Leg Temperature (WR)	32°F - 662°F

Notes:

NP = Nuclear Power, NF = Nominal Flow, MR = Measuring Range.

Table 7.1-9—Prioritization Scheme Analysis
Sheet 1 of 2

Signal Types	Effect on PACS	Effect on Plant
Concurrent and Conflicting	The PACS module provides the actuation for the actuation signal with the highest priority. For concurrent and conflicting SICS commands (SICS open and close), the PACS module will not provide any actuation outputs. For other systems' commands the PACS module will be configured to either an OPEN/ON priority or CLOSE/OFF priority depending on the actuator.	The actions of the system with the highest priority are executed. Priority is defined such that safety-related actions have higher priority than non-safety, therefore the plant will continue to operate in a safe manner.
Non-concurrent	For PS, SAS, and PAS signals: The PACS module provides the actuation for the actuation signal present at that moment in time. Once the actuation signal is removed, the PACS removes its actuation signal to the actuator. For SICS signals: The PACS module provides the actuation for the SICS actuation signal. The PACS latches its output to provide an actuation signal until the device reaches its final limit position. Once the device reaches its final limit position the PACS unlatches its output and does not provide an actuation signal. During this time period when the PACS module output is latched, if the SICS actuation signal is removed, the PACS module will continue provide an actuation signal until the device reaches its final limit position. During this time period when the PACS module output is latched and the SICS actuation signal is removed, if the PACS receives a conflicting SICS actuation signal, then the PACS module will stop its previous actuation and provide actuation signal for the new SICS actuation signal.	The actions of the system providing the actuation signal present at that moment in time are executed. If this action brings the plant to a unsafe state, then once the plant reaches a protection setpoint, the higher priority safety system shall provide an concurrent signal to maintain the plant in a safe state.

Table 7.1-9—Prioritization Scheme Analysis
Sheet 2 of 2

Signal Types	Effect on PACS	Effect on Plant
Combination of Both Concurrent and Non-concurrent (e.g. Overlapping signals for a period of time)	For the time period where the signals are concurrent, the PACS module behaves as described in the concurrent and conflicting signals section. For the time period where the signals are non-concurrent the PACS module behaves as described in the non-concurrent signal section.	For the time period where the signals are concurrent and conflicting: The actions of the system with the highest priority are executed. Priority is defined such that safety-related actions have higher priority than non-safety, therefore the plant will continue to operate in a safe manner. For the time period where the signals are non-concurrent: The actions of the system providing the actuation signal present at that moment in time are executed. If this action takes the plant towards an unsafe state, then once the plant reaches a protection setpoint (before the unsafe state), the higher priority safety system shall provide an concurrent signal to maintain the plant in a safe state.

Table 7.1-10—PACS Priority Module Signal Descriptions

Input Signal	Description	Source
SFON1	Safety ON/OPEN command	PS/DAS
SFON2	Safety ON/OPEN command	SAS
SFOFF1	Safety OFF/CLOSE command	PS/DAS
SFOFF2	Safety OFF/CLOSE command	SAS
AVON	Operational ON/OPEN command	PAS (AV42)
AVOFF	Operational OFF/CLOSE command	PAS (AV42)
MNON	Manual ON/OPEN command	SICS
MNOFF	Manual OFF/CLOSE command	SICS
STOP	STOP command to remove actuation orders in mid-travel	SICS
OPDIS	Operational I&C Disable	SICS
TLOFF	Checkback from CLOSE limit switch (limit switch has responded)	Actuator
TLON	Checkback from OPEN limit switch (limit switch has responded)	Actuator
TRQNOFF	Checkback from CLOSE torque switch (torque switch has NOT responded)	Actuator
TRQNON	Checkback from OPEN torque switch (torque switch has NOT responded)	Actuator
OFFTL	Termination of CLOSE command when limit switch responds (see Table 7.1-11)	Parameter
ONTL	Termination of OPEN command when limit switch responds (see Table 7.1-11)	Parameter
TRQSF	Termination of command when torque switch responds (see Table 7.1-11)	Parameter
Output Signal	**Description**	**Source**
CBOFF	Checkback to SICS for the CLOSE limit switch	PACS
CBON	Checkback to SICS for the OPEN limit switch	PACS
CMDOFF	OFF/CLOSE actuation signal	Actuator
CMDON	ON/OPEN actuation signal	Actuator

Table 7.1-11—PACS Priority Module Command Termination Parameters

TRQSF	ONTL	Operational Commands Termination	Safety Commands Termination
0	0	By torque switch only, not by limit switch	By torque switch and limit switch
0	1	By torque switch or by limit switch	Only by limit switch, not by torque switch
1	0	By torque switch only, not by limit switch	Only by torque switch, not by limit switch
1	1	By torque switch or by limit switch	By torque switch or by limit switch
TRQSF	**OFFTL**	**Operational Commands Termination**	**Safety Commands Termination**
0	0	By torque switch only, not by limit switch	By torque switch and limit switch
0	1	By torque switch or by limit switch	Only by limit switch, not by torque switch
1	0	By torque switch only, not by limit switch	Only by torque switch, not by limit switch
1	1	By torque switch or by limit switch	By torque switch or by limit switch

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