

2.1.3.24 Pushbutton Behaviour

2.1.3.24.1 LogN Sensor Trip Disabled Pushbutton/ LogN Sensor Trip Disabled Pushbutton Stuck

Determines the behaviour of the LogN Sensor Trip Disabled Pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

(Reference [10]; Appendix G, item 15)

2.1.3.24.1.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix A: m_LogNdisabled	Appendix B: -	Appendix C: Table 2.6.1.1-1

2.1.3.24.1.2 Output Units/Type

Output	Type
Appendix D: f_LogNdisabled	Appendix E: y_pbdesign
Appendix F: f_StuckLogNdisa bled	Appendix G: boolean

2.1.3.24.1.3 f_LogNdisabled/ f_StuckLogNdisabled

Appendix H:	Result	
Condition	f_LogNdisabled	f_StuckLogNdisabled
m_LogNdisabled = e_NotPressed	e_pbNotDebounced	False
[m_LogNdisabled = e_Pressed] & NOT [(m_LogNdisabled = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_LogNdisabled = e_Pressed) Held for k_Debounce] & NOT [(m_LogNdisabled = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_LogNdisabled = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.2

LogN Sensor Trip Enabled Pushbutton/ LogN Sensor Trip Enabled Pushbutton Stuck

Determines the behaviour of the LogN Sensor Trip Enabled Pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.2.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix I: m_LogNenabled	Appendix J: -	Appendix K: Table 2.6.1.1-1

2.1.3.24.2.2 Output Units/Type

Output	Type
Appendix L: f_LogNenabled	Appendix M: y_pbdesign
Appendix N: f_StuckLogNenab bled	Appendix O: boolean

2.1.3.24.2.3 f_LogNenabled/ f_StuckLogNenabled

Appendix P:	Result	
Condition	f_LogNenabled	f_StuckLogNenabled
m_LogNenabled= e_NotPressed	e_pbNotDebounced	False
[m_LogNenabled= e_Pressed] & NOT [(m_LogNenabled = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_LogNenabled = e_Pressed) Held for k_Debounce] & NOT [(m_LogNenabled = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_LogNenabled = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.3

NOP Abnormal 1 Cancelled Pushbutton/ NOP Abnormal 1 Cancelled Pushbutton Stuck

Determines the behaviour of the NOP Abnormal 1 Cancelled pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.3.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix Q: m_NOPspAbn1 OFF	Appendix R: -	Appendix S: Table 2.6.1.1-1

2.1.3.24.3.2 Output Units/Type

Output	Type
Appendix T: f_NOPspAbn1OFF	Appendix U: y_pbdesign
Appendix V: f_StuckNOPspAbn1 OFF	Appendix W: boolean

2.1.3.24.3.3 f_NOPspAbn1OFF/ f_StuckNOPspAbn1OFF

Appendix X:	Result	
Condition	f_NOPspAbn1OFF	f_StuckNOPspAbn1OFF
m_NOPspAbn1OFF = e_NotPressed	e_pbNotDebounced	False
[m_NOPspAbn1OFF = e_Pressed] & NOT [(m_NOPspAbn1OFF = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspAbn1OFF = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspAbn1OFF = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspAbn1OFF = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.4

NOP Abnormal 1 Requested Pushbutton/ NOP Abnormal 1 Requested Pushbutton Stuck

Determines the behaviour of the NOP Abnormal 1 Requested pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.4.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix Y: m_NOPspAbn1 ON	Appendix Z: -	Appendix AA: Table 2.6.1.1-1

2.1.3.24.4.2 Output Units/Type

Output	Type
Appendix BB: f_NOPspAbn1O N	Appendix CC: y_pbdesign
Appendix DD: f_StuckNOPspAb n1ON	Appendix EE: boolean

2.1.3.24.4.3 f_NOPspAbn1ON/ f_StuckNOPspAbn1ON

Appendix FF:	Result	
Condition	f_NOPspAbn1ON	f_StuckNOPspAbn1ON
m_NOPspAbn1ON = e_NotPressed	e_pbNotDebounced	False
[m_NOPspAbn1ON = e_Pressed] & NOT [(m_NOPspAbn1ON = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspAbn1ON = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspAbn1ON = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspAbn1ON = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.5

NOP Abnormal 2 Cancelled Pushbutton/ NOP Abnormal 2 Cancelled Pushbutton Stuck

Determines the behaviour of the NOP Abnormal 2 Cancelled pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.5.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix GG: m_NOPspAbn2 OFF	Appendix HH: -	Appendix II: Table 2.6.1.1-1

2.1.3.24.5.2 Output Units/Type

Output	Type
Appendix JJ: f_NOPspAbn2OFF	Appendix KK: y_pbdesign
Appendix LL: f_StuckNOPspAbn 2OFF	Appendix MM: boolean

2.1.3.24.5.3 f_NOPspAbn2OFF/ f_StuckNOPspAbn2OFF

Appendix NN:	Result	
Condition	f_NOPspAbn2OFF	f_StuckNOPspAbn2OFF
m_NOPspAbn2OFF = e_NotPressed	e_pbNotDebounced	False
[m_NOPspAbn2OFF = e_Pressed] & NOT [(m_NOPspAbn2OFF = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspAbn2OFF = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspAbn2OFF = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspAbn2OFF = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.6

NOP Abnormal 2 Requested Pushbutton/ NOP Abnormal 2 Requested Pushbutton Stuck

Determines the behaviour of the NOP Abnormal 2 Requested pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.6.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix OO: m_NOPspAbn2 ON	Appendix PP: -	Appendix QQ: Table 2.6.1.1-1

2.1.3.24.6.2 Output Units/Type

Output	Type
Appendix RR: f_NOPspAbn2ON	Appendix SS: y_pbdesign
Appendix TT: f_StuckNOPspAbn2ON	Appendix UU: boolean

2.1.3.24.6.3 f_NOPspAbn2ON/ f_StuckNOPspAbn2ON

Appendix VV:	Result	
Condition	f_NOPspAbn2ON	f_StuckNOPspAbn2ON
m_NOPspAbn2ON = e_NotPressed	e_pbNotDebounced	False
[m_NOPspAbn2ON = e_Pressed] & NOT [(m_NOPspAbn2ON = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspAbn2ON = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspAbn2ON = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspAbn2ON = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.7

NOP Low Power Cancelled Pushbutton/ NOP Low Power Cancelled Pushbutton Stuck

Determines the behaviour of the NOP Low Power Cancelled pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.7.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix WW: m_NOPspLPOFF F	Appendix XX: -	Appendix YY: Table 2.6.1.1-1

2.1.3.24.7.2 Output Units/Type

Output	Type
Appendix ZZ: f_NOPspLPOFF F	Appendix AAA: y_pbdesign
Appendix BBB: f_StuckNOPsp LPOFF	Appendix CCC: boolean

2.1.3.24.7.3 f_NOPspLPOFF/ f_StuckNOPspLPOFF

Appendix DDD:	Result	
Condition	f_NOPspLPOFF	f_StuckNOPspLPOFF
m_NOPspLPOFF = e_NotPressed	e_pbNotDebounced	False
[m_NOPspLPOFF = e_Pressed] & NOT [(m_NOPspLPOFF = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspLPOFF = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspLPOFF = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspLPOFF = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.8

NOP Low Power Requested Pushbutton/ NOP Low Power Requested Pushbutton Stuck

Determines the behaviour of the NOP Low Power Requested pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.8.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix EEE: m_NOPspLPON	Appendix FFF: -	Appendix GGG: Table 2.6.1.1-1

2.1.3.24.8.2 Output Units/Type

Output	Type
Appendix HHH: f_NOPspLPON	Appendix III: y_pbdesign
Appendix JJJ: f_StuckNOPspLPON	Appendix KKK: boolean

2.1.3.24.8.3 f_NOPspLPON/ f_StuckNOPspLPON

Appendix LLL:	<i>Result</i>	
<i>Condition</i>	f_NOPspLPON	f_StuckNOPspLPON
m_NOPspLPON = e_NotPressed	e_pbNotDebounced	False
[m_NOPspLPON = e_Pressed] & NOT [(m_NOPspLPON = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_NOPspLPON = e_Pressed) Held for k_Debounce] & NOT [(m_NOPspLPON = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_NOPspLPON = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.9

Pressurizer Low Level Parameter Trip Conditioning Cancelled Pushbutton/ PLL Conditioning Cancelled Pushbutton Stuck

Determines the behaviour of the PLL Parameter Trip Conditioning Cancelled pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.9.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix MMM: m_PLLcondOFF	Appendix NNN: -	Appendix OOO: Table 2.6.1.1-1

2.1.3.24.9.2 Output Units/Type

Output	Type
Appendix PPP: f_PLLcondOFF	Appendix QQQ: y_pbdesign
Appendix RRR: f_StuckPLLcondOFF	Appendix SSS: boolean

2.1.3.24.9.3 f_PLLcondOFF/ f_StuckPLLcondOFF

Appendix TTT:	Result	
Condition	f_PLLcondOFF	f_StuckPLLcondOFF
m_PLLcondOFF = e_NotPressed	e_pbNotDebounced	False
[m_PLLcondOFF = e_Pressed] & NOT [(m_PLLcondOFF = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_PLLcondOFF = e_Pressed) Held for k_Debounce] & NOT [(m_PLLcondOFF = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_PLLcondOFF = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.10

Pressurizer Low Level Parameter Trip Conditioning Requested Pushbutton/ PLL Conditioning Requested Pushbutton Stuck

Determines the behaviour of the PLL Parameter Trip Conditioning Requested pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.10.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix UUU: m_PLLcondON	Appendix VVV: -	Appendix WWW: Table 2.6.1.1-1

2.1.3.24.10.2 Output Units/Type

Output	Type
Appendix XXX: f_PLLcondON	Appendix YYY: y_pbdesign
Appendix ZZZ: f_StuckPLLcondON	Appendix AAAA: boolean

2.1.3.24.10.3 f_PLLcondON/ f_StuckPLLcondON

Appendix BBBB:		Result	
Condition		f_PLLcondON	f_StuckPLLcondON
m_PLLcondON = e_NotPressed		e_pbNotDebounced	False
[m_PLLcondON = e_Pressed] & NOT [(m_PLLcondON = e_Pressed) Held for k_Debounce]		e_pbNotDebounced	False
[(m_PLLcondON = e_Pressed) Held for k_Debounce] & NOT [(m_PLLcondON = e_Pressed) Held for k_pbStuck]		e_pbDebounced	False
(m_PLLcondON = e_Pressed) Held for k_pbStuck		e_pbStuck	True

Assumption: A-30.

2.1.3.24.11

Steam Generator Low Level Parameter Trip Conditioning Cancelled Pushbutton/ SGLL Conditioning Cancelled Pushbutton Stuck

Determines the behaviour of the SGLL Parameter Trip Conditioning Cancelled pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.11.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix CCCC: m_SGLLcondOFF F	Appendix DDDD: -	Appendix EEEE: Table 2.6.1.1-1

2.1.3.24.11.2 Output Units/Type

Output	Type
Appendix FFFF: f_SGLLcondOFF	Appendix GGGG: y_pbdesign
Appendix HHHH: f_StuckSGLLcondOFF F	Appendix IIII: boolean

2.1.3.24.11.3 f_SGLLcondOFF/ f_StuckSGLLcondOFF

Appendix JJJJ:	Result	
Condition	f_SGLLcondOFF	f_StuckSGLLcondOFF
m_SGLLcondOFF = e_NotPressed	e_pbNotDebounced	False
[m_SGLLcondOFF = e_Pressed] & NOT [(m_SGLLcondOFF = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_SGLLcondOFF = e_Pressed) Held for k_Debounce] & NOT [(m_SGLLcondOFF = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_SGLLcondOFF = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.

2.1.3.24.12

Steam Generator Low Level Parameter Trip Conditioning Requested Pushbutton/ SGLL Conditioning Requested Pushbutton Stuck

Determines the behaviour of the SGLL Parameter Trip Conditioning Requested pushbutton, including debouncing and stuck behaviour.

(On and Off pushbuttons are debounced separately.)

2.1.3.24.12.1 Inputs/Natural Language Expressions

Input	NL Expression	Reference
Appendix KKKK: m_SGLLcondON N	Appendix LLLL: -	Appendix MMMM: Table 2.6.1.1-1

2.1.3.24.12.2 Output Units/Type

Output	Type
Appendix NNNN: f_SGLLcondON	Appendix OOOO: y_pbdesign
Appendix PPPP: f_StuckSGLLcondON	Appendix QQQQ: boolean

2.1.3.24.12.3 f_SGLLcondON/ f_StuckSGLLcondON

Appendix RRRR:	Result	
Condition	f_SGLLcondON	f_StuckSGLLcondON
m_SGLLcondON = e_NotPressed	e_pbNotDebounced	False
[m_SGLLcondON = e_Pressed] & NOT [(m_SGLLcondON = e_Pressed) Held for k_Debounce]	e_pbNotDebounced	False
[(m_SGLLcondON = e_Pressed) Held for k_Debounce] & NOT [(m_SGLLcondON = e_Pressed) Held for k_pbStuck]	e_pbDebounced	False
(m_SGLLcondON = e_Pressed) Held for k_pbStuck	e_pbStuck	True

Assumption: A-30.