

ArevaEPRDCDocsPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Tuesday, July 09, 2013 6:38 PM
To: Snyder, Amy
Cc: Canova, Michael; Hearn, Peter; LENTZ Tony (EXTERNAL AREVA); WADKINS George (EXTERNAL AREVA); CRIBB Arnie (EXTERNAL AREVA); GUCWA Len (EXTERNAL AREVA); VANCE Brian (AREVA)
Subject: I&C Tech Spec Comments Requiring Clarification During Telecon on July 11th
Attachments: Matrix of NRC Comments on Tech Specs 3 03.xlsx

Amy and Pete,

The attached spreadsheet captures the subset of NRC Staff review comments on Technical Specification Section 3.3 – LCO and Bases (preliminary comments provided in early May with updated comments on June 17th) that AREVA requests to be clarified with NRC staff in the telecon this Thursday (July 11th) at 1 pm. AREVA developed this list from the total set of comments provided from the NRC Staff review of the Technical Specifications and bases, and then AREVA determined if the comment required further clarification or discussion with NRC staff in order to proceed. Other NRC staff comments on the Technical Specifications not captured in this list are planned to be either (1) incorporated as requested or (2) feedback provided to the NRC staff as to the reason for not incorporating or incorporating in a different manner than requested. Actions to finalize the Technical Specifications will be completed, and then the Technical Specifications Bases will be revised as necessary for consistency with the Technical Specifications and the additional NRC Staff review comments provided.

Thanks,
Dennis

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From: WILLIFORD Dennis (RS/NB)
Sent: Monday, July 08, 2013 5:13 PM
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Cc: Michael.Canova@nrc.gov; Hearn, Peter; LENTZ Tony (External RS/NB); WADKINS George (External AREVA NP INC.); CRIBB Arnie (EXT); GUCWA Len (External RS/NB); VANCE Brian (RS/NB)
Subject: RE: Questions about I&C Tech Specs- Call on July 11 and AREVA's proposed call the week of July 29th

Amy and Pete,

Just wanted to provide an update on your request for the matrix so NRC staff can review prior to the call this Thursday afternoon on tech specs (clarification of NRC staff comments). We will not be able to provide today but plan to send by COB on Tuesday, July 9th.

We would also like to request that Eileen McKenna participate in Thursday's tech spec discussion.

Thanks,
Dennis

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From: Snyder, Amy [<mailto:Amy.Snyder@nrc.gov>]
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To: WILLIFORD Dennis (RS/NB)
Cc: McKenna, Eileen; Harbuck, Craig; Hearn, Peter; Segala, John; LENTZ Tony (External RS/NB)
Subject: Questions about I&C Tech Specs- Call on July 11 and AREVA's proposed call the week of July 29th

Hi Dennis,

Left you a voice mail earlier and I am following up with this email.
You said for the July 11 call, AREVA plans on going over a matrix that AREVA put together regarding Craig's comments. Staff would like that matrix ahead of time and requests that AREVA send it by Monday, July 8th so that they can review it before the July 11 call.

Regarding AREVA's proposed call sometime during the week of July 29,
Staff would need to know more information about what AREVA proposes ahead of time.
We would need before the call your proposed agenda and any other information you plan on going over- such as your presentation slides, etc.
Also, it is important to understand that staff would be willing to discuss technical position/issue that AREVA either disagrees with staff on or that needs further clarification.
Not sure what you have in mind. Please clarify.

Thank you
Amy

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Subject: I&C Tech Spec Comments Requiring Clarification During Telecon on July 11th
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Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
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No.	TS	TS Item	Requirement	Comments
2	3.3.1	ACTIONS E	E. One Reactor Trip Breaker inoperable.	#####
14	3.3.1	ACTIONS N	N.1 4 hours N.6 ----- NOTE ----- Only applicable to Function 11.	Audit item 42(13) - Agreed to change to 4 hours from 2 hours to account for end of cycle xenon transient upon thermal power reduction below 10 percent RTP from 100 percent RTP - however, need to check with reactor systems branch to get corroboration.
16	3.3.1	ACTIONS N	Be in MODE 3 with P3 inhibited.	This is conservative, since Function 11 is only applicable in MODE 1 above P3 (> 70% RTP) and P3 is only required to be OPERABLE in MODE 1
17	3.3.1	Table 3.3.1-1	6. Linear Power Density High [1(a)] [(b)] [(b)] [(b)]	#####
22	3.3.1	Table 3.3.1-1	24. Containment Pressure High [1,2,3(c)] [4 divisions] [B,G] [SR 3.3.1.2 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.8 SR 3.3.1.12]	#####
24	3.3.1	Table 3.3.1-1	26. EFWS Actuation Low-Low SG Level [3(c)] [(k)] [(k)] [(k)]	#####
28	3.3.2	APPLICABILITY	#####	Why is this here? it belongs as a footnote to the Mode 5 Applicability of Function 1.c. Also, what is the technical reason for why this allowance is necessary? Is there a precedent for this allowance
39	3.3.2	ACTIONS U	Required Action and associated Completion Time of Condition B or D not met	#####
46	3.3.2	ACTIONS FF	24 hours	#####
48	3.3.2	Table 3.3.2-1	2. EFWS Actuation	Why is EFWS Actuation - SIS Actuation with LOOP not required? It is automatically enabled by P13 inhibited (Hot Leg Temp > 200 deg F)
50	3.3.2	Table 3.3.2-1	4. EFWS Isolation b. Manual (Affected SG) [1,2,3,4(c)(k)] [4 divisions] [I,J] [SR 3.3.2.5]	1,2,3,4(c)(k)
52	3.3.2	Table 3.3.2-1	8. Main Steam Isolation c. High Containment Pressure (All SGs) [1,2,3,4] [4 divisions] [B,D,R] [SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.7]	#####
53	3.3.2	Table 3.3.2-1	9. Main Feedwater Full Load Isolation a. Reactor Trip Initiation (All SGs) [1,2,3(o)] [4 divisions] [B,D,T] [SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.7]	Explain how Condition B applies to Function 9.a which only has a reactor trip initiation signal as input
54	3.3.2	Table 3.3.2-1	9. Main Feedwater Full Load Isolation a. Reactor Trip Initiation (All SGs) [1,2,3(o)] [4 divisions] [B,D,T] [SR 3.3.2.1 SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.7]	#####
56	3.3.2	Table 3.3.2-1	9. Main Feedwater Full Load Isolation c. Manual [1,2,3,4(c)] [4 divisions] [I,J] [SR 3.3.2.5]	#####
57	3.3.2	Table 3.3.2-1	10. Startup and Shutdown System (SSS) Isolation d. High Containment Pressure (All SGs) [1,2,3,4] [(n)] [(n)] [(n)]	#####
59	3.3.2	Table 3.3.2-1	15. SGBD Cross-Tie Valve Opening a. Manual [1,2,3(v)] [4 divisions] [I,J] [SR 3.3.2.5]	Which FSAR Section 7.3 figure depicts this Function? Which FSAR Section 7.3 figure depicts ESF Function 16.a? Is it enabled by P16 Manual Inhibit - Manual (hot leg P < 290 psia) or P16 Manual Validation - Manual (hot leg P > 290 psia)?
60	3.3.2	Table 3.3.2-1	16. SIS Hot Leg Injection Valve Opening a. Manual [1,2,3(w),4] [4 divisions] [F,H,R] [SR 3.3.2.5]	why is P16 inhibited attached to MODE 3, but not MODE 4?
61	3.3.2	Table 3.3.2-1	16. SIS Hot Leg Injection Valve Opening a. Manual [1,2,3(w),4] [4 divisions] [F,H,R] [SR 3.3.2.5]	Condition R is not logical
62	3.3.2	Table 3.3.2-1	16. SIS Hot Leg Injection Valve Opening a. Manual [1,2,3(w),4] [4 divisions] [F,H,R] [SR 3.3.2.5]	Condition R is not logical
63	3.3.2	Table 3.3.2-1	17. MHSI Large Miniflow Valves b. Manual [5(h),6(h)] [3 divisions] [E,L] [SR 3.3.2.5]	Bases page B 3.3.2-34 says two divisions
67	3.3.2	Table 3.3.2-1	(h) When MHSI Large Miniflow Valves and PSRV OPERABILITY are required by LCO 3.4.11, Low Temperature Overpressure Protection (LTOP).	Interlocks. May not apply to Manual function
68	3.3.2	Table 3.3.2-1	(m) With Manual SIS - Loop Level Bypass inhibited.	Where are the OPERABILITY, APPLICABILITY, ACTION, and SURVEILLANCE TS requirements for the Manual SIS - Loop Level Bypass?
70	3.3.2	Table 3.3.2-1	(x) As specified in the COLR.	What happened to Footnote "(x) As specified in the COLR."
71	3.3.3	ACTIONS D	D. Two Input & Acquisition Logic divisions inoperable. D.2 Restore one Input & Acquisition Logic division to OPERABLE status. 72 hours	All four actuated divisions on 1 out of 2 logic; no single failure protection - since many end devices may be impacted, not just in one division - should this time be shorter - say 24 hours
73	3.3.3	ACTIONS U	U. Three or more Input & Acquisition Logic divisions inoperable U.1 Verify P17 is inhibited. 6 hours	#####
76	3.3.3	ACTIONS V	V. Three or more Input & Acquisition Logic divisions inoperable V.1 Verify P17 is validated. 30 hours	#####
78	3.3.3	ACTIONS V	V. Three or more Input & Acquisition Logic divisions inoperable V.1 Verify P17 is validated. 30 hours	Discuss why 30 hour completion time to validate P17?
117	3.3.3	Table 3.3.3-1	18. P17 Automatic Inhibition a. Cold Leg Temperature Higher than Setpoint [4] [4 divisions] [B,D,V] [SR 3.3.3.1 SR 3.3.3.4 SR 3.3.3.5 SR 3.3.3.6 SR 3.3.3.8]	Discuss why 30 hour completion time to validate P17?
119	3.3.3	Table 3.3.3-1	20. Actuation Logic [1,2,3,4] [4 divisions] [W] [SR 3.3.3.6]	Why not SR 3.3.3.7 ADOT, similar to ADOT specified for Functions 3.3.2.20 and 3.3.1.30? Why the EXTENDED SELF TEST for Function 3.3.3.20?
120	3.3.3	Table 3.3.3-1	20. Actuation Logic [5,6] [3 divisions] [W] [SR 3.3.3.6]	Why not SR 3.3.3.7 ADOT, similar to ADOT specified for Functions 3.3.2.20 and 3.3.1.30? Why the EXTENDED SELF TEST for Function 3.3.3.20?
125	3.3.4	ACTIONS E	E.	Make conforming changes to the bases for ACTIONS.
129	3.3.4	Table 3.3.4-1	1. Containment Isolation (Stage 1) a. SIS Actuation [1,2,3,4] [(a)] [(a)] [(a)]	#####

130	3.3.4	Table 3.3.4-1	1. Containment Isolation (Stage 1) d. Manual [5(b)(c),6(b)(d)] [3 divisions] [F] [SR 3.3.4.5]	Why just 3 divisions?
131	3.3.4	Table 3.3.4-1	3. Actuation Logic [5(b)(c),6(b)(d)] [3 divisions] [F] [SR 3.3.4.4 SR 3.3.4.5 SR 3.3.4.7]	Why just 3 divisions? Request discussion with AREVA regarding which automatic containment isolation Functions / valves / systems are supported? Are only manual functions supported
144	3.3.5	ACTIONS F	F. Required Action and associated Completion Time of Condition B, D, or E not met.	For Conditions B and D, Functions 1a, 2abcDEF-MODES 1,2,3,4.
161	3.3.5	Table 3.3.5-1	1.b. Manual [1,2,3,4] [2 divisions (Divisions 1 and 4 only)] [E,F] [SR 3.3.5.5]	Why SR 3.3.5.5 EXTENDED SELF TEST and not SR 3.3.5.6 ADOT?
162	3.3.5	Table 3.3.5-1	2.c. ADM at Shutdown with RCP in Operation [5(c)(d)] [3 divisions] [C,H] [SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3 SR 3.3.5.4 SR 3.3.5.5 SR 3.3.5.7 SR 3.3.5.8]	Why not also MODE 6(c)?
163	3.3.5	Table 3.3.5-1	2.d. ADM at Shutdown with RCP in Operation with Calculation [5(c)(d)] [3 divisions] [C,H] [SR 3.3.5.1 SR 3.3.5.2 SR 3.3.5.3 SR 3.3.5.4 SR 3.3.5.5 SR 3.3.5.7 SR 3.3.5.8]	Why not also MODE 6(c)?
164	3.3.5	Table 3.3.5-1	2.f. Manual [1,2,3,4] [2 divisions (Divisions 1 and 4 only)] [E,G] [SR 3.3.5.5]	Why SR 3.3.5.5 EXTENDED SELF TEST and not SR 3.3.5.6 ADOT?
165	3.3.5	Table 3.3.5-1	2.f. Manual [5,6] [1 division (Division 1 or 4)] [H] [SR 3.3.5.5]	Why SR 3.3.5.5 EXTENDED SELF TEST and not SR 3.3.5.6 ADOT?
167	3.3.5	Table 3.3.5-1	3. Actuation Logic [5,6(e)] [1 division (Division 1 or 4)] [H] [SR 3.3.5.5 SR 3.3.5.6 SR 3.3.5.8]	Why not include MODE 6(c)? Or better yet, just say MODE 6?
168	3.3.5	Table 3.3.5-1	3. Actuation Logic [5,6(e)] [1 division (Division 1 or 4)] [H] [SR 3.3.5.5 SR 3.3.5.6 SR 3.3.5.8]	Why just one division?
170	3.3.6	Table 3.3.6-1	1. RCP Trip a. Low Delta Pressure across RCP and SIS Actuation for a Period of Time [1,2,3,4] [4 divisions,(a)] [B,G,F] [SR 3.3.6.1 SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.4 SR 3.3.6.6 SR 3.3.6.7]	This needs explaining; why is footnote (a) needed? What does it mean about LCO 3.3.2 - SI actuation?
171	3.3.6	Table 3.3.6-1	3. Actuation Logic [1,2,3,4] [4 divisions] [E,F] [SR 3.3.6.4 SR 3.3.6.5 SR 3.3.6.7]	Each RCP has two breakers, each breaker is controlled by one actuation division, so each RCP is supported by two actuation divisions - the Bases for ACTION E needs to make this point clear
172	3.3.6	Table 3.3.6-1	(a) See LCO 3.3.2, Engineered Safety Feature Actuation System (ESFAS) Instrumentation for Input & Acquisition Logic division OPERABILITY, ACTION, and Surveillance Requirements.	Why needed for Function 1.a?
173	3.3.6	Table 3.3.6-1	Table	Why are previous functions 1.a, 1.c and 1.d omitted?
196	3.3.9	ACTIONS G	24 hours	With no control of EFWS, how to get to RHR cooling of RCS?
197	3.3.9	SURVEILLANCE REQUIREMENTS	SURVEILLANCE	Where is SR to verify automatic control settings are properly loaded into software memory?
198	3.3.9	SURVEILLANCE REQUIREMENTS	SR 3.3.9.2 Perform SENSOR OPERATIONAL TEST.	Why is SCP not referenced?
199	3.3.9	SURVEILLANCE REQUIREMENTS	SR 3.3.9.3 Perform CALIBRATION.	Why is SCP not referenced?
200	3.3.9	SURVEILLANCE REQUIREMENTS	SR 3.3.9.4 Perform EXTENDED SELF TESTS.	Why is SCP not referenced?
212	3.3.10	ACTIONS C	C.1 Enter applicable Conditions and Required Actions of LCO 3.7.7, "Component Cooling Water (CCW) System" for division(s) made inoperable by EAS instrumentation.	LCO 3.7.7 uses "trains" instead of "divisions."
228	3.3.10	Table 3.3.10-1	#####	How is this interlock implemented?
229	3.3.10	Table 3.3.10-1	9. Safety Injection / Residual Heat Removal System a. RHR Suction Valve Interlock [1,2,3,4] [4 divisions] [H] [SR 3.3.10.2]	How is this distinct from P14?
230	3.3.11	Table 3.3.11-1	FUNCTION	After NRC review of ICE1's Chapter 7 evaluation accepting the PAM function list selection methodology, this table will be resolved
233	3.3.13	ACTIONS D	30 days	This could include a loss of three or four manual actuation switches for a given function >>> Discuss whether less time should be allowed for two, three, and four inoperable switches for a given function
234	3.3.13	ACTIONS E	E.1 Be in MODE 1 with D3 inhibited.	The D3 permissive is automatically inhibited below 70% RTP; inhibition of the D3 permissive automatically disables Function 1.b, Reactor Trip on Low-Low RCS Flow Rate in One Loop
235	3.3.13	ACTIONS F	F.1 Be in MODE 1 with D2 inhibited.	The D2 permissive can be manually inhibited when the reactor power level is below 10% RTP; inhibition of the D2 permissive automatically disables all of the DAS functions except the Reactor Trip on Low-low RCS Flow in On Loop.
236	3.3.13	Table 3.3.13-1	1. Reactor Trip b. Low-Low Reactor Coolant System (RCS) Flow Rate in One Loop [1(b)] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2 SR 3.3.13.5]	Only DAS function with Applicability of MODE 1 > 70% RTP.
237	3.3.13	Table 3.3.13-1	1. Reactor Trip b. Low-Low Reactor Coolant System (RCS) Flow Rate in One Loop [1(b)] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2 SR 3.3.13.5]	This DAS function has Applicability of MODE 1 > 70% RTP, so why not specify Condition E instead of Condition F?
239	3.3.13	Table 3.3.13-1	10. Permissives a. D2 - Power Range Flux Measurement Higher than First Setpoint [1] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2]	Setpoint - is this the correct terminology?
240	3.3.13	Table 3.3.13-1	10. Permissives a. D2 - Power Range Flux Measurement Higher than First Setpoint [1] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2]	Why all of MODE 1?
241	3.3.13	Table 3.3.13-1	10. Permissives b. D3 - Power Range Flux Measurement Higher than Second Setpoint [1] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2]	Setpoint - is this the correct terminology?
242	3.3.13	Table 3.3.13-1	10. Permissives b. D3 - Power Range Flux Measurement Higher than Second Setpoint [1] [4 divisions] [B,C,F] [SR 3.3.13.1 SR 3.3.13.2]	Why all of MODE 1?
243	3.3.13	Table 3.3.13-1	11. Diverse Logic [1(a)] [4 divisions] [B,C,E,F] [SR 3.3.13.3 SR 3.3.13.5]	#####
251	3.3.14	ACTIONS B	4 hours	#####
253	B 3.3.1	BACKGROUND	B 3.3.1-2 Each of the DCS sensors, function processors, or trip actuation devices can be placed in lockout, which renders the component inoperable	Where is the "function processor" term defined in the Bases or Ch 7?

254	B 3.3.1	BACKGROUND	B 3.3.1-3 The Nominal Trip Setpoint (NTSP) is a predetermined setting for a protective device chosen to ensure automatic actuation prior to the process variable reaching the Analytical Limit and thus ensuring that the SL would not be exceeded.	Analytical Limit-Where previously defined?
255	B 3.3.1	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.1-23 24. Containment Pressure - High This trip is also necessary to actuate the Containment Isolation (Stage 1) - High Containment Pressure ESF function.	CI_Stage 1-Why not reference the LCO and Function number?
259	B 3.3.1	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.1-25 28. Reactor Trip Breakers Two RTBs per division (Divisions 2 and 3 only) are required to be OPERABLE in: – MODES 1 and 2, and – MODES 3 with the RCSL System capable of withdrawing an RCCA or one or more RCCAs not fully inserted.	RTB removed MODES 4 and 5, need to discuss with AREVA
260	B 3.3.1	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.1-26 29. Reactor Trip Contactors Four RTCs in each of twenty-three sets per division (Divisions 1 and 4 only) are required to be OPERABLE in: – MODES 1 and 2, and – MODE 3 with the RCSL System capable of withdrawing an RCCA or one or more RCCAs not fully inserted.	RTC removed MODES 4 and 5, need to discuss with AREVA
261	B 3.3.1	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.1-26 30. Actuation Logic Four divisions of the Actuation Logic are required to be OPERABLE in: – MODES 1 and 2, and – MODE 3 with the RCSL System capable of withdrawing an RCCA or one or more RCCAs not fully inserted.	MODES 5 and 6 are removed, during irradiated fuel movement is removed. See interim Rev 4 page B 3.3.1-100. Must discuss this change with AREVA _Other details about ALUs are found where? _Where did this information go: "Three of four ALUs for two divisions are required to be OPERABLE in: – MODES 5, 6, and – During movement of irradiated fuel assemblies. Does AREVA agree with the following statement:
263	B 3.3.1	ACTIONS E.1	B 3.3.1-28 Condition E applies when one Reactor Trip Breaker or one Reactor Trip Contactor in a set is inoperable.	Condition E. "One Reactor Trip Contactor in a set inoperable." applies when: ** just one set has one inoperable contactor; ** 2 up to 11 sets in electrical Division 1 have one inoperable contactor each; ** 2 up to 12 sets in electrical Division 4 have one inoperable contactor each; and ** 2 up to 23 sets have one inoperable contactor each, with affected sets in electrical Divisions 1 and 4. For example, the last line above corresponds to the Condition of "One PS RT Actuation Logic Division inoperable" - except that this is also addressed by Condition M. "One Actuation Logic Division inoperable." Since required Action E.1 "Restore [reactor trip device] to OPERABLE status. 72 hours" is more restrictive than Required Action M.1 "Verify OPERABILITY of other Actuation Logic divisions." 6 hours", there appears to be an inconsistency. . . unless Condition E adds "for reasons other than one Action Logic division inoperable."
266	B 3.3.1	SURVEILLANCE REQUIREMENTS	B 3.3.1-40 SR 3.3.1.11 Instrument Calibration This test verifies the channel responds to a measured parameter within the necessary range and accuracy. CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests.	Somewhere, the use of the word "channel" for component string that includes the sensor, output signal processing and conditioning, distribution (SCDS), and input to APU / CU / DAU, needs to be stated to avoid misinterpretation. Also note that for nuclear instrumentation, a single division input can be based on numerous "channel" inputs, not necessarily distinguished by the power supply divisor
267	B 3.3.2	BACKGROUND	B 3.3.2-1 Single failures upstream of the Actuation Logic Units (ALU) layer that could result in an invalid signal being used in the ESF function are accommodated by modifying the vote in the ALU layer. Each ESF function is evaluated on a case-by-case basis to determine whether the vote is modified toward actuation or no actuation. In cases where inappropriate actuation of an ESF function could challenge plant safety, the function is modified toward no actuation. Otherwise, the function is modified toward actuation.	THIS IS A GLOBAL COMMENT How the voting logic is modified based on number of faulty Input & Actuation Logic divisions for all types of instrument functions NEEDS TO BE STATED IN THE BASES
268	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-4 Permissives that enable a credited function are included in the Technical Specifications.	Global Comment: Why not also include the permissives that disable PS Functions that are assumed to be unavailable or blocked by the accident analyses
270	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-5 1. Safety Injection System (SIS) Actuation b. SIS Actuation - Low Delta Psat Three divisions are required to be OPERABLE in MODE 4 with P12 permissive validated and P15 permissive inhibited.	Explain why only three are required.
271	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-7 1. Safety Injection System (SIS) Actuation d. SIS Actuation - Manual This Function mitigates the following postulated accidents or AOOs: – Loss of Residual Heat Removal during mid-loop operations	Does this require manual SIS Loop Level Bypass to be inhibited?

272	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-8 2. Emergency Feedwater System (EFWS) Actuation	Why is EFWS Actuation - SIS Actuation with LOOP not required? It is automatically enabled by P13 inhibited (Hot Leg Temp > 200 deg F)
273	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-8 2. Emergency Feedwater System (EFWS) Actuation Four divisions of the EFWS Actuation - Low-Low SG Level (Affected SG) Function are required to be OPERABLE in: – MODE 3 with P13 permissive inhibited.	Why is "when the SGs are relied upon for heat removal" in B 3.3.1 ASALA, Fn 6.a of interim Rev 4 not included here? Is it because RHR cannot be started before entering MODE 4 from MODE 3
274	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-9 2. Emergency Feedwater System (EFWS) Actuation b. EFWS Actuation - Manual (Affected SG) Two divisions of the EFWS Actuation – Manual (Affected SG) Function are required to be OPERABLE in MODE 4 with P13 permissive inhibited and the SGs are relied upon for heat removal.	Why only two divisions? Two sets of three switches - two EFW trains, each one to its associated SG
277	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-12 5. Partial Cooldown Actuation a. Partial Cooldown Actuation – Automatic on SIS Actuation The sensors and NTSPs associated with this Function are described above for each individual automatic SIS Actuation Function (i.e., 1.a, 1.b, and 1.c).	Need to discuss how the applicabilities of these functions match/support applicability of Function 5.a. In particular, is Function 5.a needed in "MODE 4 when the SGs are relied upon for heat removal with P14 permissive inhibited"? Does Function 1.c really support Function 5.a? What disables Function 5.a. -- automatic partial cooldown actuation on SIS actuation -- below MODE 3? "Manual validation of the P14 permissive disables the Function when the hot leg pressure is less than approximately 46 psia and the hot leg temperature is less than approximately 350°F."
278	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-14 6. Main Steam Relief Isolation Valve Opening b. Partial Cooldown Actuation – Manual Reset This manual system-level reset enables the Partial Cooldown Actuation – Manual Function.	Need to discuss this statement with AREVA. 1. Should this be specified under Function 5 for Partial Cooldown Actuation - Manual => Function 5.b or 5.c depending on disposition of above comments. 2. If this function behaves like a manual permissive (but is not based on a sensor logic input and an auto voted actuation logic signal) to enable the Function 5.b, why not include it as part of Function 5.b or at least give it the same Applicability if listed separately?
279	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-16, 17 7. Main Steam Relief Train Isolation a. Main Steam Relief Train (MSRT) Isolation – Low SG Pressure (Affected SG) Four divisions of the MSRT Isolation - Low SG Pressure (Affected SG) Function are required to be OPERABLE in: – MODE 3 with P12 permissive inhibited.	Interim rev 4 also had MODE 4 with P12 permissive inhibited - why removed? Is this the reason: Cannot go below 350 deg F at 2005 psia RCS pressure? Thus MODE 4 entry not possible with P12 inhibited and not manually validated'
280	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-21 9. Main Feedwater Full Load Isolation a. Main Feedwater Full Load Isolation – Reactor Trip Initiation (All SGs) The sensors and NTSPs associated with this Function are described in LCO 3.3.1, "Reactor Trip Instrumentation," for each individual automatic reactor trip Function.	Since ESF Function 9.a requires only a reactor trip initiation signal as input, why specify the CALIBRATION SR 3.3.2.3 here for all RT Function Input & Acquisition Logic divisions, when LCO 3.3.1 already does this? Also, which other SRs specified on page 3.3.2-19 (table 3.3.2-1) are not needed for Fn 9.a?
281	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-25 10. Startup and Shutdown System (SSS) Isolation c. SSS Isolation – High SG Level for Period of Time (Affected SGs)	Where is the time delay period stated and maintained? Which SR verifies its value? How is time delay calculated? What specific Functions does Table 3.3.2-1 Footnote (n) refer to in LCO 3.3.4? As depicted on Figure 7.2-23, both Function 1a and Function 2a cause a reactor trip initiation signal
282	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-26 10. Startup and Shutdown System (SSS) Isolation d. SSS Isolation – High Containment Pressure (All SGs) Four divisions of the SSS Isolation - High Containment Pressure (All SGs) Function are required to be OPERABLE in MODES 1, 2, 3, and 4.	Function 1.b Containment Isolation (Stage 1) on High Containment [Equipment Compartment] Pressure and/or Function 1.d Containment Isolation (Stage 1) - Manual (only in MODES 1, 2, 3, and 4) AND/OR Function 2.a Containment Isolation (Stage 2) on High-High Containment [Service Compartment] Pressure and/or Function 2.b Containment Isolation (Stage 2) - Manual
283	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-26 10. Startup and Shutdown System (SSS) Isolation d. SSS Isolation – High Containment Pressure (All SGs) This Function utilizes the following sensors: – Containment Equipment Compartment Pressure sensors, and – Containment Service Compartment Pressure (Narrow Range) sensors,	Which SRs govern testing and calibration of "Containment Equipment Compartment Pressure sensors" and "Containment Service Compartment Pressure (Narrow Range) sensors"? These sensors are not explicitly named in LCO 3.3.1 Fn 24, LCO 3.3.2 Fn 10.d or LCO 3.3.4 Fns 1.b and 2.a.
284	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-28 11. PSRV Opening b. PSRV Opening – Manual	Can this control be used in MODES 1, 2, and 3 also? If so, where is this functionality described and specified'

285	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.2-31 15. Steam Generator Blowdown Cross-Tie Valve Opening B 3.3.2-35	Cannot locate this manual function in B 3.3.1 of interim rev 4; request AREVA to discuss and point out where Chapter 15 and Sections 7.3 and 10.4 discuss this manual function. Request that AREVA verify that document 51-9060507-002 lists this manual function in the table on page A-22, for the function titled "SG Transfer Lines Manual Actuation", that (i) meets Criterion 3, (ii) mitigates a SGTR, (iii) is Applicable in MODES 1, 2 and 3, with permissive P18 validated (Hot Leg Temperature < 193 def F) which makes no sense, and (iv) supports LCO 3.7.22. Request that the bases discussion and this table description be revised to be consistent with FSAR 7.3 and 15 discussions, and with each other; also ensure Bases for P18 in B 3.3.3 is consistent with these
286	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	19. Operational I&C Disable Switch a. Operational I&C Disable Switch - Manual Three divisions of the Operational I&C Disable Switch - Manual switches are required to be OPERABLE in MODES 5 and 6 and during the movement of irradiated fuel assemblies. B 3.3.2-35	Why three only?
287	B 3.3.2	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	20. Actuation Logic Three divisions of the Actuation Logic are required to be OPERABLE in MODES 5 and 6 and during the movement of irradiated fuel assemblies. B 3.3.2-37 D.1, D.2, and D.3	Why three only?
290	B 3.3.2	ACTIONS	Condition D applies when two Input & Acquisition Logic divisions are inoperable	Explain how this Condition applies to Function 9.a which only has four divisions of reactor trip initiation signal as input Condition E is listed as applicable to the following ESF Functions 1.d, which specifies 3 manual divisions in MODE 4 11.b, which specifies 3 manual divisions in MODES 5(h),6(h) 17.b, which specifies 3 manual divisions in MODES 5(h),6(h) 19.a, which specifies 3 manual divisions in MODES 5,6,(z) (h) When MHSI Large Miniflow Valves and PSRV OPERABILITY are required by LCO 3.4.11, Low Temperature Overpressure Protection (LTOP). (z) During movement of irradiated fuel assemblies.
292	B 3.3.2	ACTIONS	B 3.3.2-38 E.1 and E.2 Condition E applies when one required Manual division is inoperable	This sentence does not reflect ACTION 1, which omits adjective "required". Condition E is listed as applicable to the following functions: 1.d, which specifies 4 manual divisions in MODES 1,2,3 5.b(c), which specifies 4 manual divisions in MODES 1,2,3 6.c, which specifies 4 manual divisions in MODES 1,2,3,4(k) 7.b, which specifies 4 manual divisions in MODES 1,2,3(a) 8.d, which specifies 4 manual divisions in MODES 1,2,3,4 12.a, which specifies 4 manual divisions in MODES 1,2,3 13.b, which specifies 4 manual divisions in MODES 1,2,3,4 14.c, which specifies 4 manual divisions in MODES 1,2,3,4 16.a, which specifies 4 manual divisions in MODES 1,2,3(w),4 18.a, which specifies 2 manual divisions in MODES 1,2,3,4,5 18.b, which specifies 2 manual divisions in MODES 1,2,3,4,5 It seems that Functions 18.a and 18.b, which require only 2 manual divisions, should not reference Condition F
293	B 3.3.2	ACTIONS	B 3.3.2-38 F.1 Condition F applies when one required Manual division is inoperable	
294	B 3.3.2	ACTIONS	B 3.3.2-43 T.1 Condition T addresses the failure of three or more Input & Acquisition Logic divisions or the inability to complete the remedial measures in the time allowed by Required Actions B.1, D.1, D.2, or D.3.	Explain how this Condition applies to Function 9.a which only has four divisions of reactor trip initiation signal as input
295	B 3.3.3	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.3-3 3. P5 Automatic Validation a. P5 Automatic Validation - Intermediate Range Flux Measurement Higher than Setpoint Four divisions of the P5 Automatic Validation - Intermediate Range Flux Measurement Higher than Setpoint Function are required to be OPERABLE in MODE 2.	This needs to be "MODES 1 and 2" in order to bound the supported Function's Applicability of "MODES 1 and 2 with P5 validated" This is an example of the changes that need be made when the stated Applicability for the permissive function does not bound or match those of all of its supported PS Functions. AREVA should make all changes as needed to conform to this criterion.
297	B 3.3.3	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.3-5 5. P7 Automatic Validation a. P7 Automatic Validation - No RCPs in Operation Three divisions of the P7 Automatic Validation - No RCPs in Operation Function are required to be OPERABLE in MODE 5.	Why just three? Global comment regarding requiring fewer than design number of Input & Actuation Logic divisions: Add a footnote which states "(c) With verification that Actuation Logic voting is modified
299	B 3.3.3	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.3-5 6. P7 Automatic Inhibition a. P7 Automatic Inhibition - RCP in Operation Three divisions of the P7 Automatic Validation - RCP in Operation Function are required to be OPERABLE in MODE 5.	Why just three? Global comment regarding requiring fewer than design number of Input & Actuation Logic divisions: Add a footnote which states "(c) With verification that Actuation Logic voting is modified

304	B 3.3.3	ACTIONS	B 3.3.3-25 U.1 Condition U addresses the failure of three or more Input & Acquisition Logic divisions or the inability to complete the remedial measures in the time allowed by Required Actions B.1, D.1, or D.2. In this condition, the P17 Manual Validation Cold Leg Temperature Lower than Setpoint Function is inoperable and the plant must be brought to a plant condition in which the supported ESFAS functions are not required to be OPERABLE. To achieve this status, actions must be taken to verify that P17 is inhibited.	1. Increase cold leg temperature above the P17 setpoint (entering MODE 4 if initially in MODE 5), which automatically resets the P17 manual validation switch and generates a P17 inhibited signal. 2. Possibly use LCO 3.3.2 Function 19.a Operational I&C Disable Switch - Manual? (I do not know if this is possible as a way of inhibiting P17.) Alternatively, replace Required Action U.1 of Condition U of LCO 3.3.3 with a Required Action that is identical to LCO 3.3.2 Required Action N.1 or L.1; Since P17 Validated enables LCO 3.3.2 Functions: -- 11.a PSRV Opening – High Hot Leg Pressure Requires 4 Input & Acquisition Logic (I&AL) divisions in MODE 4(g)(h) Conditions B, D, N Required Action N.1 Declare affected PSRVs and MHSI Large Miniflow Valves inoperable and enter applicable Conditions and Required Actions of LCO 3.4.11, "LTOP." Requires 3 Input & Acquisition Logic (I&AL) divisions in MODES 5(g)(h) and 6(g)(h) Conditions C, L Required Action L.1 Declare affected PSRVs and MHSI Large Miniflow Valves inoperable and enter applicable Conditions and Required Actions of LCO 3.4.11, "LTOP." -- 17.a MHSI Large Miniflow Valves - Interlock Requires 4 Input & Acquisition Logic (I&AL) divisions in MODE 4(g)(h) Conditions B, D, N Requires 2 Input & Acquisition Logic (I&AL) divisions in MODES 5(g)(h) and 6(g)(h) Conditions K, L
306	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-3 1. Emergency Feedwater System (EFWS) Pump Flow Overflow Protection	Is this term used in Fig. 7.3-12 or ANP-10309P? If not, then remove it. see Fn 1.a below
307	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-4 2. EFWS Level Control a. EFWS Level Control - Manual Four divisions of this Function are required to be OPERABLE in MODES 1, 2, and 3.	Why not two divisions in MODE 4 when the SGs are relied upon for heat removal?
308	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-5 4. MSRCV Pressure Control a. MSRCV Pressure Control - Automatic Four divisions of this Function are required to be OPERABLE in MODES 1, 2, and 3.	Why not four divisions in MODE 4 when the SGs are relied upon for heat removal?
309	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-6 4. MSRCV Pressure Control a. MSRCV Pressure Control - Automatic There is no NTSP associated with this Function.	What about Max1p SP MSRT (Fig. 7.3-12) - shouldn't this be included? What sensors are used in the Fig. 7.3-9—MSRT Setpoint Formation?
310	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-6 4. MSRCV Pressure Control a. MSRCV Pressure Control - Automatic There are no permissives associated with this Function	What about P14 Validated (Fig. 7.2-33) which uses sensors HOT LEG1 [2 3 4] TEMP WR HOT LEG1 [2 3 4] PRESS WR and is used in MSRT Setpoint formation (Fig. 7.3-9)
311	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-6 4. MSRCV Pressure Control b. MSRCV Pressure Control - Manual There is no NTSP associated with this Function.	What about Max1p SP MSRT (Fig. 7.3-12) - shouldn't this be included? What sensors are used in the Fig. 7.3-9—MSRT Setpoint Formation?
312	B 3.3.9	APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	B 3.3.9-6 4. MSRCV Pressure Control b. MSRCV Pressure Control - Manual There are no permissives associated with this Function	What about P14 Validated (Fig. 7.2-33) which uses sensors HOT LEG1 [2 3 4] TEMP WR HOT LEG1 [2 3 4] PRESS WR and is used in MSRT Setpoint formation (Fig. 7.3-9)
314	B 3.3.9	ACTIONS	B 3.3.9-9 G.1 The Completion Time of 24 hours to reach MODE 4 without reliance upon a steam generator for heat removal is reasonable, based on operating experience, to reach the required power level from full power conditions in an orderly manner and without challenging plant systems.	The unit is already in MODE 4; why mention power level reduction from full power; only a unit cooldown to allow switching to RHR for RCS cooling is relevant; is 24 hours not excessive for this cooldown and switchover? Does the STS provide any Completion Time precedent?
316	B 3.3.11	ACTIONS	B 3.3.11-12 E.1 and E.2 -----REVIEWER'S NOTE----- The following Bases applies to plants that have developed, tested and obtained NRC approval to utilize a pre-planned alternate method of monitoring the normal PAM function when one or more required PAM functions have less than the minimum required channels OPERABLE.	Global Comment for all GTS and GTS Bases Should Reviewer's Notes be in brackets to unambiguously indicate that they are COL information?