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SUBJECT: Forwards draft license amend prepared under Tech Spec
         Improvement Project covering instrumentation.

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
           Draft License Amendment Prepared under the
           Technical Specification Improvement Project
           San Onofre Nuclear Generating Station
           Units 2 and 3

Enclosed for your information and preliminary review, is a draft
License Amendment for the Instrumentation Chapter prepared under
the Technical Specification Improvement Project (TSIP).   This
submittal is made pursuant to a discussion between Mr. Brian
Woods of my staff, and Mr. Jose Calvo (NRC) to permit review by
the NRC staff of the San Onofre Units 2 and 3 site specific
application of the CE Restructured Standard Technical
Specifications (RSTS).   This will permit early validation of the
CE RSTS, and familiarity with the San Onofre TSIP to be formally
submitted later.

This submittal is made, of course, with the understanding that
this is only for information at this time and that formal review
of the License Amendment within SCE has not been performed and
changes are likely.

If you have any comments or questions regarding the attached,
please do not hesitate to call.

Very truly yours,

00226

Enclosure

cc: J. B. Martin, Regional Administrator, NRC Region V
     _ C. Caldwell, NRC Senior Resident Inspector, San Onofre
               Units 1, 2 and 3
       L. E. Kokajko, NRC Project Manager, San Onofre Units 2 and 3

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3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation - Operating

LCO 3.3.1   Four RPS Trip Channels, and the associated instrument channels
                     and automatic bypass removal functions, shall be OPERABLE for
                     each function specified below, with Limiting Safety System
                     Settings consistent with the specified Allowable Values.

APPLICABILITY: MODES 1 AND 2

LIMITING SAFETY SYSTEM SETTINGS:

FUNCTION	ALLOWABLE VALUE
1. LINEAR POWER LEVEL - HIGH	≤ 111.0% RTP
2. [a]LOGARITHMIC POWER LEVEL - HIGH	≤ 0.93% RTP
3. [b]PRESSURIZER PRESSURE - HIGH	≤ 2385 psia
4. PRESSURIZER PRESSURE - LOW	≥ 1700 psig
5. CONTAINMENT PRESSURE - HIGH	≤ 3.4 psig
6A. [c]STEAM GENERATOR A PRESSURE - LOW	≥ 729 psia
6B. [c]STEAM GENERATOR B PRESSURE - LOW	≥ 729 psia
7A. STEAM GENERATOR A LEVEL - LOW	≥ 20.0%
7B. STEAM GENERATOR B LEVEL - LOW	≥ 20.0%
8A. STEAM GENERATOR A LEVEL - HIGH	≤ 89.7%
8B. STEAM GENERATOR B LEVEL - HIGH	≤ 89.7%
9. [d]REACTOR COOLANT FLOW - LOW	Ramp: ≤ 0.22 psid/sec. Floor: ≥ 13.2 psid Step 1: ≤ 7.25 psid
10. [e]LOSS OF LOAD (Turbine Stop Valve Control Oil Pressure)	≥ 100 psig
11A. [d]LOCAL POWER DENSITY - HIGH	≤ 21.0 kW/ft
11B. [d]DNBR - LOW	≥ 1.31
12. [f]SEISMIC - HIGH	.48/.60g

LCO 3.3.1 RPS Instrumentation   (continued)

------------------------------------NOTES--
a.   Trip may be bypassed when THERMAL POWER is > 1E-4% RTP. Bypass shall be
      automatically removed when THERMAL POWER is ≤ 1E-4% RTP.

b.   The setpoint may be decreased, to a minimum value of 300 psia, as pressurizer
      pressure is reduced, provided the margin between pressurizer pressure and the
      setpoint is maintained ≤ 400 psi. Trips may be bypassed when pressurizer
      pressure is < 400 psia. Bypass shall be automatically removed when
      Pressurizer Pressure is ≥ 500 psia. The setpoint shall be automatically
      increased to the normal setpoint as pressurizer pressure is increased.

c.   The setpoint may be decreased as steam pressure is reduced, provided the
      margin between steam pressure and the setpoint is maintained ≤ 200 psi. The
      setpoint shall be automatically increased to the normal setpoint as steam
      pressure is increased.

d.   Trip may be bypassed when THERMAL POWER IS < 1E-4% RTP. Bypass shall be
      automatically removed when THERMAL POWER is ≥ 1E-4% RTP.

e.   Trip may be bypassed when THERMAL POWER IS < 55% RTP. Bypass shall be
      automatically removed when THERMAL POWER is ≥ 55% RTP.

f.   Acceleration, horizontal/vertical, g

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Trip channel or associated instrument channel inoperable for one or more parameters.	A.1 Place inoperable channel in bypass or trip. AND	1 hour
	A.2 Place affected Functional Units listed in Table 3.3.1-1 in bypass or trip. AND	1 hour
	A.3 Place inoperable channel in trip. AND	48 hours
	A.4 Place affected Functional Units in trip.	48 hours

(continued)

ACTIONS   (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two Trip channels or associated instrument channels inoperable for one or more parameters. -----NOTE------- LCO 3.0.4 is not applicable. ----------------	B.1 Place one channel in bypass and place the other channel in trip. AND B.2 Place affected Functional Units listed in Table 3.3.1-1 in bypass or trip. AND B.3 Restore one channel to OPERABLE status. AND B.4 Return affected Functional Units to OPERABLE status.	1 hour 1 hour 48 hours 48 hours
C. One automatic bypass removal function inoperable for one or more RPS functions.	C.1 Disable the bypass function. OR C.2 Place the affected automatic trip channel in trip.	48 hours 48 hours
D. Two automatic bypass removal functions inoperable for one or more RPS functions. ------NOTE------ LCO 3.0.4 is not applicable. ----------------	D.1 Disable the bypass functions OR D.2.1 Place one affected trip channel in bypass and place the other in trip, for each affected trip function. AND D.2.2 Restore one bypass function and the associated trip function to OPERABLE status, for each affected trip.	1 hour 1 hour 48 hours

(continued)

ACTIONS   (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
E. Receipt of a CPC cabinet high temperature alarm.	E.1	Perform a CHANNEL FUNCTIONAL TEST on the affected CPCs.	12 hours
F. Three or more auto restarts of an OPERABLE CPC during a 12-hour period.	F.1	Perform a CHANNEL FUNCTIONAL TEST on the affected CPC. affected calculator.	24 hours
G. Required Actions and associated Completion Times not met.	G.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.1.1	Perform a CHANNEL CHECK of each RPS instrument channel.	12 hours
SR 3.3.1.2	Verify total RCS flow rate as indicated by each Core Protection Calculator (CPC) is less than or equal to the RCS total flow rate. If necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is ≤ the RCS flow rate.	12 hours when THERMAL POWER IS ≥ 70% RTP.
SR 3.3.1.3	Check the CPC auto restart count.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS   (continued)

SURVEILLANCE	FREQUENCY
-----------------------NOTES------------------------------------ The daily Calibration may be suspended during PHYSICS TESTS provided the calibration is performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau. SR 3.0.4 is not applicable. ---	
SR 3.3.1.4 Perform calibration (heat balance only) and adjust the Linear Power Level signals and the CPC addressable constant multipliers to make the CPC delta T power and CPC nuclear power calculations agree with the calorimetric if the absolute difference is ≥ 2%.	24 hours When THERMAL POWER is > 15% RTP
SR 3.3.1.5 Verify Linear Power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the CPCs.	31 days When THERMAL POWER is ≥ 15% RTP
SR 3.3.1.6 Verify total RCS flow rate indicated by each CPC is ≤ the RCS flow determined by calometric calculations.	31 days When THERMAL POWER is ≥ 70% RTP
SR 3.3.1.7 -----------------------NOTE--------------------- The CPC CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC. -- Perform CHANNEL FUNCTIONAL TEST on each channel except Loss of Load and Power Range Neutron Flux.	 92 days
SR 3.3.1.8 -------------------NOTE----------------- Neutron detectors may be excluded from the CHANNEL CALIBRATION. -- Perform CHANNEL CALIBRATION of the Power Range Neutron Flux Channels.	 92 days

(continued)

SURVEILLANCE REQUIREMENTS   (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.9	Perform CHANNEL FUNCTIONAL TEST for the Loss of Load functional unit.	92 days When THERMAL POWER is ≥ 55 % RTP
SR 3.3.1.10	-----------------NOTE----------------- Neutron detectors may be excluded from the CHANNEL CALIBRATION. --- Perform CHANNEL CALIBRATION on each channel.	24 months
SR 3.3.1.11	Using the incore detectors, determine the shape annealing matrix elements to be used by the CPCs.	Once after each refueling prior to exceeding 70% RTP
SR 3.3.1.12	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal function.	Once within 92 days prior to each reactor startup.
SR 3.3.1.14	-----------------NOTE----------------- Neutron detectors may be excluded from RPS RESPONSE TIME TESTING. --- Demonstrate RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

TABLE 3.3.1-1 (Page 1 of 1)

Instrument Channel/Functional Unit Reference

INSTRUMENTATION CHANNEL	FUNCTIONAL UNITS
1. Excore Linear Power	Linear High Power High (RPS) DNBR Low (RPS) Local Power Density High (RPS)
3. Hot Leg Temperature	DNBR Low (RPS) Local Power Density High (RPS)
4. Cold Leg Temperature	DNBR Low (RPS) Local Power Density High (RPS)
5. Pressurizer Pressure (Narrow Range)	Pressurizer Pressure High (RPS) Local Power Density High (RPS) DNBR Low (RPS)
5. Pressurizer Pressure (Wide Range)	Pressurizer Pressure Low (RPS) Safety Injection (SIAS) Containment Isolation (CIAS)
6. Containment Pressure (Narrow Range)	Containment High Pressure (RPS) Safety Injection (SIAS) Containment Isolation (CIAS)
Containment Pressure (Wide Range)	Containment Spray (CSAS)
7. Steam Generator Pressure	SG Pressure Low (RPS) Main Steam Isolation (MSIS) SG Pressure Low (EFAS) SG Pressure Difference (EFAS)
8. Steam Generator Level	SG Level Low (RPS) SG Level High (RPS) Emergency Feedwater (EFAS)
9. Target CEA Position	DNBR Low (RPS) Local Power Density High (RPS)
10. RCS Flow (RCP Speed)	DNBR Low (RPS) Local Power Density High (RPS) Low Reactor Coolant Flow (RPS)
11. Turbine Stop Valve Oil Pressure	Loss of Load (RPS)
12. Seismic Accelerator	Seismic Trip (RPS)

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation - Shutdown

LCO 3.3.2   Four RPS Trip Channels, and the associated instrument channels and automatic bypass removal functions, shall be OPERABLE for each function specified below, with Limiting Safety System Settings consistent with the specified Allowable Values.

APPLICABILITY: MODES 3, 4, and 5; with all Reactor Trip Circuit Breakers (RTCBs) open or all CEAs incapable of withdrawal.

LIMITING SAFETY SYSTEM SETTINGS:

FUNCTION	ALLOWABLE VALUE
1. [a]LOGARITHMIC (Log) POWER LEVEL - HIGH	≤ 0.93 % RTP

--NOTES--
a.   Trip may be bypassed when THERMAL POWER is > 1E-4% RTP. Bypass shall be automatically removed when THERMAL POWER is ≤ 1E-4% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One RPS Log Power channel inoperable.	A.1	Place inoperable channel in bypass or trip.	1 hour
		AND	
	A.2	Place inoperable channel in trip.	48 hours
B. Two RPS Log Power channels inoperable.	B.1	Place one channel in bypass and place the other in trip.	1 hour
		AND	
	B.3	Restore one channel to OPERABLE status.	48 hours

ACTIONS   (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One automatic bypass removal function inoperable.	C.1	Disable the bypass function.	48 hours
	OR		
	C.2	Place the affected automatic trip channel in trip.	48 hours
D. Two automatic bypass removal functions inoperable. ------NOTE------ LCO 3.0.4 is not applicable. ----------------	D.1	Disable the bypass functions	1 hour
	OR		
	D.2.1	Place one affected trip channel in bypass and place the other in trip, for each affected trip function. AND	1 hour
	D.2.2	Restore one bypass function and the associated trip function to OPERABLE status, for each affected trip.	48 hours
E. Required Actions and associated Completion Times not met.	E.1	Open all RTCBs.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.2.1 Perform a CHANNEL CHECK of each Log Power channel.	12 hours
SR 3.3.2.2 Perform a CHANNEL FUNCTIONAL TEST on each Log Power channel.	92 days
SR 3.3.2.3 Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal function.	Once within 92 days prior to each reactor startup.
-------------------NOTE------------------------------------ Neutron detectors may be excluded from CHANNEL CALIBRATIONS -- SR 3.3.2.4 Perform a CHANNEL CALIBRATION on each Log Power channel.	24 months

3.2 INSTRUMENTATION

3.3.3 Control Element Assembly Calculators

LCO 3.3.3   Two Control Element Assembly Calculators (CEACs) shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One CEAC inoperable.	A.1	Perform SR 3.1.5.1 (CEA alignment verification)	Once per 4 hours
		AND	
	A.2	Restore inoperable CEAC to OPERABLE status.	7 days
B. Required Actions and associated Completion Time of Condition A not met. OR Both CEACs inoperable.	B.1	Ensure the DNBR requirements of LCO 3.2.5 are met [and the Reactor Power Cutback (RPCB) system is disabled.	1 hour
		AND	
	B.2	Ensure all full length and part length CEA groups are fully withdrawn, and maintained fully withdrawn except during surveillance testing pursuant to SR 3.1.5.3 and SR 3.1.5.4 (CEA motion tests) [or for control, when CEA group #6 may be inserted to a maximum of 127.5 inches].	4 hours
		AND	
		(continued)	

ACTIONS   (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3	Ensure the "RSPT/CEAC Inoperable" addressable constant in each CPC is set to indicate that both CEACs are inoperable.	4 hours
	AND		
	B.4	Ensure the CEA Drive Mechanism Control System is placed in "OFF" and maintained in "OFF" except during CEA motion permitted by Required Action B.2.	4 hours
	AND		
	B.5	Perform a CEA alignment verification per SR 3.1.5.1.	Once per 4 hours
C. Receipt of a CPC cabinet high temperature alarm.	C.1	Perform a CHANNEL FUNCTIONAL TEST on the affected CEAC.	12 hours
D. Three or more auto restarts of an OPERABLE CEAC during a 12 hour period.	D.1	Perform a CHANNEL FUNCTIONAL TEST on the affected CEAC.	24 hours
E. Required Actions and associated Completion Time of Conditions B, C, or D not met.	E.1	Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.3.1 Perform a CHANNEL CHECK.	12 hours
SR 3.3.3.2 Check the CEAC auto restart count.	12 hours
SR 3.3.3.3 Perform a CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.3.4 Perform a CHANNEL CALIBRATION.	24 months
SR 3.3.3.5 Perform a CHANNEL FUNCTIONAL TEST which includes injection of simulated process signals into the channel as close to the sensors as practical to verify OPERABILITY including alarm and trip functions.	24 months
SR 3.3.4.6 Verify the isolation characteristics of each CEAC isolation amplifier and each optical isolator for CEAC to CPC data transfer.	24 months

3.3 INSTRUMENTATION

3.3.4 Reactor Protection System (RPS) Logic and Trip Initiation

LCO 3.3.4   Six channels of RPS Matrix Logic, Four channels of RPS Initiation
                   Logic, Four channels of Reactor Trip Circuit Breakers (RTCBs),
                   and Two channels of Manual Trip shall be OPERABLE.

APPLICABILITY: MODES 1, and 2, and
                   MODES 3, 4, and 5; with any RTCBs closed and any CEAs capable
                   of being withdrawn.

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One Matrix Logic channel inoperable	A.1	Restore inoperable channels to OPERABLE status.	48 hours
B. One channel of Manual Trip, RTCBs, or Initiation Logic inoperable.	B.1	Open the affected RTCBs.	1 hour
C. Two channels of RTCBs or Initiation Logic affecting the same trip leg inoperable.	C.1	Open the affected RTCBs.	Immediately
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3. AND	6 hours
	D.2	Open all RTCBs.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.4.1 Perform a CHANNEL FUNCTIONAL TEST on each RPS Logic channel and RTCB channel.	92 days
SR 3.3.4.2 Perform a CHANNEL FUNCTIONAL TEST on the RTCBs including separate verification of the undervoltage and shunt trips on each RTCB.	24 months
SR 3.3.4.3 Perform a CHANNEL FUNCTIONAL TEST on each RPS manual trip channel.	24 months

3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Instrumentation

LCO 3.3.5   Four ESFAS Trip Units, the associated instrument channels and automatic bypass removal functions, and six ESFAS Matrix Logic channels shall be OPERABLE for each function specified below, with trip setpoints consistent with the specified Allowable Values.

APPLICABILITY: MODES 1, 2, and 3

ESFAS INSTRUMENTATION TRIP VALUES:

FUNCTION	ALLOWABLE VALUE
1. SAFETY INJECTION ACTUATION SIGNAL (SIAS)	
a. Containment Pressure - High	≤ 3.7 psig
b. ¹Pressurizer Pressure - Low	≥ 1700 psia
2. CONTAINMENT SPRAY ACTUATION SIGNAL (CSAS)	
a. Containment Pressure - High High	≤ 15.0 psig
b. Automatic SIAS	N.A.
3. CONTAINMENT ISOLATION SIGNAL (CIAS)	
a. Containment Pressure - High	≤ 3.7 psig
b Manual SIAS	N.A.
4. MAIN STEAM ISOLATION SIGNAL (MSIS)	
a. ²Steam Generator (SG) Pressure - Low	≥ 729 psig
5. RECIRCULATION ACTUATION SIGNAL (RAS)	
a. Refueling Water Tank - Low	≥ 17.73 and ≤ 19.27%
6A. EMERGENCY FEEDWATER ACTUATION SIGNAL SG#A (EFAS-1)	
a. Steam Generator Level - Low	≥ 20.0%
b. SG Pressure Difference - High (SG-A > SG-B)	≤ 140.0 psi
c. Steam Generator Pressure - Low	≥ 729 psig
6B. EMERGENCY FEEDWATER ACTUATION SIGNAL SG#B (EFAS-2)	
a. Steam Generator Level - Low	≥ 20.0%
b. SG Pressure Difference - High (SG-B > SG-A)	≤ 140.0 psi
c. Steam Generator Pressure - Low	≥ 729 psig
7. CONTAINMENT COOLING (CCAS)	
a. Manual CCAS	N.A.
b. Manual SIAS	N.A.

LCO 3.3.5 ESFAS Instrumentation   (continued)

-------------------------------------NOTES-------------------------------

1. The setpoint may be decreased, to a minimum value of 300 psia, as pressurizer
   pressure is reduced, provided the margin between pressurizer pressure and the
   setpoint is maintained ≤ 400 psi. Trips may be bypassed when pressurizer
   pressure is < 400 psia. Bypass shall be automatically removed when Pressurizer
   Pressure is ≥ 400 psia. The setpoint shall be automatically increased to the
   normal setpoint as pressurizer pressure is increased.

2. The setpoint may be decreased as steam pressure is reduced, provided the margin
   between steam pressure and the setpoint is maintained ≤ 200 psi. The setpoint
   shall be automatically increased to the normal setpoint as steam pressure is
   increased.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESFAS Functional Unit or associated instrument channel inoperable for one or more parameters.	A.1 Place inoperable channel in bypass or trip. AND	1 hour
	A.2 Place affected Functional Units listed in Table 3.3.1-1 in bypass or trip. AND	1 hour
	A.3 Place inoperable channel in trip. AND	48 hours
	A.4 Place affected Functional Units in trip.	48 hours

(continued)

ACTIONS   (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Two ESFAS Functional Units or associated instrument channels inoperable for one or more parameters. ------NOTE------ LCO 3.0.4 is not applicable. ----------------	B.1 AND	Place one inoperable channel is in bypass and place the other inoperable channel in trip.	1 hour
	B.2 AND	Place affected Functional Units listed in Table 3.3.1-1 in bypass or trip.	1 hour
	B.3 AND	Restore one channel to OPERABLE status.	48 hours
	B.4	Return affected Functional Units to OPERABLE status.	48 hours
C. One automatic bypass removal function inoperable for one or more ESFAS functions.	C.1 OR	Disable the bypass function.	48 hours
	C.2	Place the affected ESFAS channel in trip.	48 hours
D. Two automatic bypass removal functions inoperable for one or more ESFAS functions. ------NOTE------- LCO 3.0.4 is not applicable. -----------------	D.1 OR	Disable the bypass functions	1 hour
	D.2.1 AND	Place one affected ESFAS channel in bypass and place the other in trip, for each affected ESFAS function.	1 hour
	D.2.2	Restore one bypass function and the associated trip function to OPERABLE status, for each affected trip.	48 hours

(continued)

ACTIONS   (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. One Matrix Logic channel inoperable.	E.1	Restore inoperable channel to OPERABLE status.	48 hours
F. Required Actions and associated Completion Time not met.	F.1 AND F.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.5.1	Perform a CHANNEL CHECK of each ESFAS channel.	12 hours
SR 3.3.5.2	Perform a CHANNEL FUNCTIONAL TEST of each ESFAS instrument and Matrix channel.	92 days
SR 3.3.5.3	Perform a CHANNEL CALIBRATION of each ESFAS channel.	24 months
SR 3.3.5.4	Demonstrate ESFAS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.6 Engineered Safety Feature (ESFAS) Logic and Actuation

LCO 3.3.6   Four channels of ESFAS Initiation Logic, Two channels of ESFAS
                   Actuation Logic and Manual Actuation shall be OPERABLE for each
                   specified function in the specified applicable MODES.

ESFAS ACTUATION CHANNELS:

FUNCTION	APPLICABLE MODES
1. SAFETY INJECTION ACTUATION SIGNAL (SIAS)	1,2,3,4
2. CONTAINMENT ISOLATION SIGNAL (CIAS)	1,2,3,4
3. CONTAINMENT COOLING ACTUATION SIGNAL (CCAS)	1,2,3,4
4. RECIRCULATION ACTUATION SIGNAL (RAS)	1,2,3,4
5. CONTAINMENT SPRAY ACTUATION SIGNAL (CSAS)	1,2,3
6. MAIN STEAM ISOLATION SIGNAL (MSIS)	1,2,3
7A. EMERGENCY FEEDWATER Steam Generator A (EFAS1)	1,2,3
7B. EMERGENGY FEEDWATER Steam Generator B (EFAS2)	1,2,3

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One Manual Actuation or Initiation Logic channel inoperable for CSAS, MSIS, or EFAS.	A.1	Restore inoperable channel to OPERABLE status.	48 hours
B. Two Initiation Logic channels inoperable in the same trip leg inoperable for CSAS, MSIS, or EFAS.	B.1 AND	Open at least one contact in the affected trip leg of both ESFAS actuation logics.	Immediately
	B.2	Restore inoperable channels to OPERABLE status.	48 hours

(continued)

ACTIONS   (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
C. One Actuation Logic channel inoperable for CSAS, MSIS, or EFAS.	C.1	Restore inoperable channel to OPERABLE status.	48 hours
D. Required Action and associated Completion Time of Conditions A, B, or C not met.	D.1 AND D.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours
E. One Manual Actuation or Initiation Logic channel inoperable for SIAS, CIAS, RAS, or CCAS.	E.1	Restore inoperable channel to OPERABLE status.	48 hours
F. Two Initiation Logic channels inoperable in the same trip leg inoperable for SIAS, CIAS, RAS, or CCAS.	F.1 AND F.2	Open at least one contact in the affected trip leg of both ESFAS actuation logics. Restore inoperable channels to OPERABLE status.	Immediately 48 hours
G. One Actuation Logic channel inoperable for SIAS, CIAS, RAS, or CCAS.	G.1	Restore inoperable channel to OPERABLE status.	48 hours
H. Required Action and associated Completion Time of Conditions G, or H not met.	H.1 AND H.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
--------------------NOTE---------------------- Testing of Actuation Logic shall include the verification of the proper operation of each initiation relay. ---	
SR 3.3.6.1 Perform a CHANNEL FUNCTIONAL TEST on each ESFAS logic channel.	92 days
-----------------------NOTE---------------------- Relays associated with plant equipment which cannot be operated during plant operation shall be exempt testing during plant operation. Relays exempt from testing during operation shall be tested during each MODE 5 entry exceeding 24 hours unless tested during the previous six months. -- SR 3.3.6.2 Perform a subgroup relay test of each Actuation Logic channel which includes the de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.	184 days
SR 3.3.6.3 Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal function.	Once within 92 days prior to each reactor startup.
SR 3.3.6.4 Perform a CHANNEL FUNCTIONAL TEST on each ESFAS manual actuation channel.	24 months
SR 3.3.6.5 Demonstrate that the ESFAS RESPONSE TIME is within limits for each required ESFAS function.	24 months on a STAGGERED TEST BASIS.

3.3 INSTRUMENTATION

3.3.7 Emergency Diesel Generator (EDG) Loss of Voltage Start (LOVS)

LCO 3.3.7   THREE channels of EDG LOVS instrumentation per EDG shall be OPERABLE supporting both Loss of Voltage and Degraded Voltage.

APPLICABILITY: When associated EDG is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One channel inoperable for one or two EDGs.	A.1	Declare the associated EDG inoperable.	1 hour
	OR		
	A.2.1	Place the channel in bypass or trip.	1 hour
	AND		
	A.2.2.1	Restore the channel to OPERABLE status.	48 hours
	OR		
	A.2.2.2	Place the channel in trip.	48 hours
	AND		
	A.2.3	Restore the channel to OPERABLE status.	Prior to the next CHANNEL FUNCTIONAL TEST
B. Two channels inoperable for one or two EDGs. -------NOTE------ LCO 3.0.4 is not applicable. ----------------	B.1	Declare the associated EDG inoperable.	1 hour
	OR		
	B.2.1	Place one channel in bypass and place the other channel in trip.	1 hour
	AND		
	B.2	Restore one channel to OPERABLE status.	48 hours

(continued)

ACTIONS   (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Actions and associated Completion Time not met. OR More than two channels inoperable.	C.1	Declare the associated EDG inoperable.	1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.7.1	Perform a CHANNEL CHECK on each required voltage sensing channel indicator.	12 hours
[SR 3.3.7.2	------------------NOTE----------------------- Actuation of the end device(s) may be excluded. --- Perform a CHANNEL FUNCTIONAL TEST.	92 DAYS
SR 3.3.7.3	---------------------NOTE--------------------- Testing of the voltage sensor may be excluded. --- Perform a CHANNEL CALIBRATION with setpoint Allowable Values as shown in Figure 3.3.7-1	24 months

3.3 INSTRUMENTATION

3.3.8 <u>Containment Purge Isolation Signal (CPIS) - Operating</u>

LCO 3.3.8   One CPIS train shall be OPERABLE with radiation monitor
                   setpoints:

                   Containment Gaseous Monitor: Per the ODCM
                   Containment Particulate Monitor: Per the ODCM
                   Containment Area Gamma Monitor: ≤ 340 mR/hr

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. No CPIS containment area monitors or actuation logic OPERABLE.	A.1	Close each containment purge penetration providing direct access from the containment atmosphere to the outside atmosphere.	4 hours
B. No CPIS gaseous or particulate monitors OPERABLE.	B.1	Enter ACTIONS of LCO 3.4.15 (Leakage Detection Equip.)	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform a CHANNEL CHECK on each containment gaseous and area radiation monitor channel.	12 hours
SR 3.3.8.2	Perform a CHANNEL CHECK on each containment air particulate radiation monitor channel.	7 days
SR 3.3.8.3	Perform a CHANNEL FUNCTIONAL TEST on each containment radiation monitor channel.	31 days
SR 3.3.8.4	------------------NOTE------------------ Testing of Actuation Logic shall include the actuation of each initiation relay and verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on each required CPIS actuation logic channel.	24 months
SR 3.3.8.5	Perform a CHANNEL CALIBRATION on each containment radiation monitor channel.	24 months
SR 3.3.8.6	Demonstrate that Response Time of each CPIS channel is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.9 Containment Purge Isolation Signal (CPIS) - Refueling

LCO 3.3.9   One CPIS train shall be OPERABLE with radiation monitor setpoints:

Containment Gaseous Monitor: Per the ODCM
Containment Particulate Monitor: Per the ODCM
Containment Iodine Monitor: Per the ODCM
Containment Area Gamma Monitor: Per the ODCM

APPLICABILITY: MODE 6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. No CPIS channel OPERABLE.	A.1 Close each containment purge penetration providing direct access from the containment atmosphere to the outside atmosphere.	4 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.9.1	Perform a CHANNEL CHECK on each containment gaseous and area radiation monitor channel.	12 hours
SR 3.3.9.2	Perform a CHANNEL CHECK on each containment air particulate and iodine monitor channel.	7 days
SR 3.3.9.3	Perform a CHANNEL FUNCTIONAL TEST on each containment radiation monitor channel.	31 days
SR 3.3.9.4	------------------NOTE------------------ Testing of Actuation Logic shall include the actuation of each initiation relay and verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on each CPIS manual and actuation logic channel.	24 months
SR 3.3.9.5	Perform a CHANNEL CALIBRATION on each containment radiation monitor channel.	24 months
SR 3.3.9.6	Demonstrate that Response Time of each CPIS channel is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.10 Control Room Isolation Signal (CRIS)

LCO 3.3.10   One CRIS train shall be OPERABLE with radiation monitor setpoints:

Airborne Particulate/Iodine: $\leq$ 6.0E4 cpm above background
Airborne Gaseous: $\leq$ 4.0E2 cpm above background

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------------NOTE------------
LCO 3.0.3 is not applicable.
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APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more CRIS channel inoperable.	A.1	Place the Control Room Emergency Ventilation System in the "EMERGENCY" mode of operation.	1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.3.10.1	Perform a CHANNEL CHECK on each control room radiation monitor channel.	12 hours
SR 3.3.10.2	Perform a CHANNEL FUNCTIONAL CHECK on each control room radiation monitor channel.	31 days
SR 3.3.10.3	------------------NOTE------------------ Testing of Actuation Logic shall include the actuation of each initiation relay and verification of the proper operation of each initiation relay. -- Perform a CHANNEL FUNCTIONAL TEST on each CRIS manual and actuation logic channel.	24 months
SR 3.3.10.4	Perform a CHANNEL CALIBRATION on each control room radiation monitor channel.	24 months
SR 3.3.10.5	Demonstrate that Response Time of each CRIS channel is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.11 <u>Fuel Handling Isolation Signal (FHIS)</u>

LCO 3.3.11   One FHIS train shall be OPERABLE with radiation monitor
                setpoints:

                Airborne Particulate/Iodine: Per the ODCM
                Airborne Gaseous: Per the ODCM

                ------------NOTE------------
                LCO 3.0.3 is not applicable.

APPLICABILITY: When irradiated fuel is in the storage pool

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required FHIS channel inoperable.	A.1	Enter the ACTIONS of LCO 3.7.15 (Fuel Building Cleanup)	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.11.1 Perform a CHANNEL CHECK on each fuel building radiation monitor channel.	12 hours
SR 3.3.11.2 Perform a CHANNEL FUNCTIONAL CHECK on each fuel building radiation monitor channel.	31 days
------------------NOTE------------------ Testing of Actuation Logic shall include the actuation of each initiation relay and verification of the proper operation of each initiation relay. -- SR 3.3.11.3 Perform a CHANNEL FUNCTIONAL TEST on each FHIS manual and actuation logic channel.	24 months
SR 3.3.11.4 Perform a CHANNEL CALIBRATION on each control room radiation monitor channel.	24 months
SR 3.3.11.5 Demonstrate that Response Time of each FHIS channel is within limits.	24 months on a STAGGERED TEST BASIS

3.3 INSTRUMENTATION

3.3.12 Post Accident Monitoring Instrumentation

LCO 3.3.12   The Post Accident Monitoring Instrumentation for functions in
Table 3.3.12-1 shall be OPERABLE.

------------NOTE------------
LCO 3.0.4 is not applicable.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One required channel of functions 1 - 13 inoperable.	A.1	Restore channels to OPERABLE status.	30 days
B. Two required channels of functions 1 - 13 inoperable.	B.1	Restore one channel to OPERABLE status.	7 days
C. Required Actions and associated Completion Times of Conditions A or B not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours
D. One required channel of functions 14 or 15 inoperable.	D.1	Restore channels to OPERABLE status.	30 days
E. Two required channels of functions 14 or 15 inoperable.	E.1	Restore one channel to OPERABLE status.	7 days
F. Required Actions and associated Completion Times of Conditions D or E not met.	F.1	Initiate actions in accordance with Specification 5.x.y.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.12.1 Perform a CHANNEL CHECK.	31 days
SR 3.3.12.2 ----------------NOTE-------------------- The containment radiation monitor CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for ranges above 10 R/hr and a one point calibration check of the detector below 10 R/hr with a gamma source. -- Perform CHANNEL CALIBRATION.	 24 months

Table 3.3.12-1
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS
1. Containment Pressure - Narrow Range*	2
2. Containment Pressure - Wide Range*	2
3. Reactor Coolant Outlet Temperature -T_{HOT}(Wide Range)*	2
4. Reactor Coolant Inlet Temperature - T_{HOT}(Wide Range)*	2
5. Pressurizer Pressure - Wide Range*	2
6. Pressurizer Water Level	2
7. Steam Line Pressure*	2/steam generator
8. Steam Generator Water Level - Wide Range*	2/steam generator
9. Refueling Water Storage Tank Water Level*	2
10. Auxiliary Feedwater Flow Rate	1/steam generator
11. Reactor Coolant System Subcooling Margin Monitor	2 2
12. Safety Valve Position Indicator	1/valve
13. Spray System Pressure	2
14. LPSI Header Temperature	2
15. Containment Temperature	2
16. Containment Water Level - Narrow Range	2
17. Containment Water Level - Wide Range*	2
18. Core Exit Thermocouples*	7/core quadrant
19. Cold Leg HPSI Flow	1/cold leg
20. Hot Leg HPSI flow*	1/hot leg
21. Heated Junction Thermocouple System- Reactor Vessel Level Monitoring System*	2

* Regulatory Guide Type A Instruments

3.3 INSTRUMENTATION

3.3.13 Remote Shutdown System

LCO 3.3.13   The Remote Shutdown System shall be OPERABLE with monitoring
                    instrumentation channels shown in Table 3.3.13-1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable for one or more functions.	A.1	Restore channels to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 AND B.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.13.1	Perform CHANNEL CHECK for each Remote Shutdown System instrumentation channel.	31 days
SR 3.3.13.2	Verify each required control circuit is capable of performing its intended function.	18 months
SR 3.3.13.3	Perform CHANNEL CALIBRATION for each Remote Shutdown System instrumentation channel.	18 months
SR 3.3.13.4	Perform CHANNEL FUNCTIONAL TEST of the Reactor Trip Circuit Breaker open/closed indication.	18 months

Table 3.3.13-1
Remote Shutdown Monitoring Instrumentation

	INSTRUMENT	L-042	L-411	CHANNELS
1.	Source Range Neutron Flux	X		1
2.	Boric Acid Makeup Tank Level	X		1
3.	Condensate Storage Tank Level	X		1
4.	RCS Hot Leg Temperature		X	1 per loop
5.	RCS Cold Leg Temperature*		X	1 per loop
6.	Pressurizer Pressure	X	X	1
7.	Pressurizer Level	X	X	1
8.	Steam Generator Pressure	X	X	1 per generator
9.	Steam Generator Level (Wide Range)	X	X	1 per generator

3.3 INSTRUMENTATION

3.3.14 Logarithmic (Log) Power Monitoring Instruments

LCO 3.3.14   Two channels of Log Power level monitoring shall be OPERABLE.

APPLICABILITY: MODES 3, 4, and 5; with the Reactor Trip Circuit Breakers open.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required channel inoperable.	A.1	Suspend all operations involving positive reactivity additions.	Immediately
	AND		
	A.2	Perform Shutdown Margin verification in accordance with SR 3.1.1.1 if $T_{ave} > 200°F$, or SR 3.1.2.1 if $T_{ave} \leq 200°F$.	4 hours **AND** once per 12 hours thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.14.1 Perform a CHANNEL CHECK on each Log Power channel.	12 hours
SR 3.3.14.2 Perform a CHANNEL FUNCTIONAL TEST on each Log Power channel.	92 days
-------------------NOTE------------------------------------- Neutron detectors may be excluded from CHANNEL CALIBRATIONS -- SR 3.3.14.3 Perform a CHANNEL CALIBRATION on each Log Power channel.	24 months