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 CRYSTAL RIVER UNIT 3

3/4 3-10

Amendment 38,

TABLE 3.3-3

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. SAFETY INJECTION					
a. High Pressure Injection					
1. Manual Initiation	2	1	2	1, 2, 3, 4	13
2. Reactor Bldg. Pressure High	3	2	2	1, 2, 3	9#
3. RCS Pressure Low	3	2	2	1, 2, 3*	9#
4. RCS Pressure Low-Low	3	2	2	1, 2, 3**	9#
5. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	10
b. Low Pressure Injection					
1. Manual Initiation	2	1	2	1, 2, 3, 4	13
2. Reactor Bldg. Pressure High	3	2#####	2	1, 2, 3	9#
3. RCS Pressure Low-Low	3	2	2	1, 2, 3**	9#
4. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	10
2. REACTOR BLDG. COOLING					
a. Manual Initiation	2	1	2	1, 2, 3, 4	13
b. Reactor Bldg. Pressure High	3	2	2	1, 2, 3	9#
c. Automatic Actuation Logic	2	1	2	1, 2, 3, 4	10

TABLE 3.3-3 (Continued)

TABLE NOTATION

- *Trip function may be bypassed in this MODE with RCS pressure below 1700 psig. Bypass shall be automatically removed when RCS pressure exceeds 1700 psig.
- ** Trip function may be bypassed in this MODE with RCS pressure below 900 psig. Bypass shall be automatically removed when RCS pressure exceeds 900 psig.
- *** Trip function may be bypassed in this MODE with steam generator pressure below 750 psig. Bypass shall be automatically removed when steam generator pressure exceeds 750 psig.

- # The provisions of Specification 3.0.4 are not applicable.
- ## Trip automatically bypassed below 20 percent of RATED THERMAL POWER.
- ### Trip function may be bypassed below 10 percent of RATED THERMAL POWER.
- #### Manual trip function occurs if two channels in the same train are actuated.
- ##### Trip function for LPI pump start is automatically bypassed when off-site power is not available. Bypass is automatically removed when off-site power is restored.

ACTION STATEMENTS

- ACTION 9 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable channel is placed in the tripped condition within 1 hour.
- ACTION 10 - With the number of OPERABLE channels one less than the Total Number of Channels, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the next 30 hours; however, one channel may be bypassed for up to 1 hour for Surveillance testing per Specification 4.3.2.1.1.
- ACTION 11 - With less than the Minimum Channels OPERABLE, operation may continue provided the containment purge and exhaust valves are maintained closed.

TABLE 3.3-3 (Continued)

ACTION STATEMENTS (Continued)

- ACTION 12 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the bypassed condition and the minimum channels OPERABLE required is demonstrated within 1 hour; one additional channel may be bypassed for up to 2 hours for Surveillance testing per Specification 4.3.2.1.1.
- ACTION 13 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 14 - With the number of OPERABLE Channels one less than the Total Number of Channels, operation may proceed provided the inoperable channel is placed in the tripped condition within 1 hour, one additional channel may be bypassed for up to 2 hours for Surveillance testing per Specification 4.3.2.1.1.

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS*</u>
1. <u>Manual</u>	
a. High Pressure Injection	Not Applicable
b. Low Pressure Injection	Not Applicable
c. Reactor Building Cooling	Not Applicable
d. Reactor Building Isolation	Not Applicable
e. Reactor Building Spray	Not Applicable
f. Reactor Building Purge Isolation	Not Applicable
g. MFW and MSL Isolation	
1. Emergency Feedwater Actuation	Not Applicable
2. Feedwater Isolation	Not Applicable
3. Steam Line Isolation	Not Applicable
h. Emergency Feedwater Actuation	Not Applicable
2. <u>Reactor Building Pressure-High</u>	
a. High Pressure Injection	35*
b. Low Pressure Injection	35*
c. Reactor Building Cooling	25*
d. Reactor Building Isolation	60*
3. <u>Reactor Building Pressure High-High (with HPI signal)</u>	
a. Reactor Building Spray	56*
4. <u>RCS Pressure Low</u>	
a. High Pressure Injection	35*
b. HPI Isolation	60*
5. <u>RCS Pressure Low-Low</u>	
a. High Pressure Injection	35*
b. Low Pressure Injection	35*
6. <u>Low Steam Generator Pressure</u>	
a. Feedwater Isolation	34
b. Steam Line Isolation	5
c. Emergency Feedwater Actuation	Not Applicable

PLANT SYSTEMS

EMERGENCY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two independent steam generator emergency feedwater pumps and associated flow paths shall be OPERABLE with:

- a. One emergency feedwater pump^{**} capable of being powered from an OPERABLE emergency bus, and
- b. One emergency feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one emergency feedwater pump and/or associated flow path inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each emergency feedwater system shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying that the steam turbine driven pump develops a discharge pressure greater than or equal to 1100 psig on recirculation flow then the secondary steam supply pressure is greater than 200 psig.*
 2. Verifying that the motor driven pump develops a discharge pressure of greater than or equal to 1100 psig on recirculation flow.

* When not in MODES 1, 2, or 3, surveillance shall be performed within 24 hours after entering MODE 3 and prior to entering MODE 2.

** Except when off-site power is not available and Reactor Coolant System pressure is less than 500 psig and Low Pressure Injection is not bypassed.

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TSIP FORMAT

3.2 INSTRUMENTATION

3.2.20 Engineered Safety Features Actuation Systems (ESFAS)
LPI - Reactor Building (RB) High Pressure

LCO 3.2.20 Three low pressure injection (LPI) ESFAS channels shall be OPERABLE with reactor building high pressure actuation setpoints of ≤ 4 psig.

APPLICABILITY: MODES 1, 2, 3 and 4.

REPLACE
NOTE

-----NOTE-----
Provisions of LCO 3.0.4 are not applicable.

ACTIONS

CONDITION	REQUIRED ACTIONS	COMPLETION TIME
A. One LPI channel inoperable.	A.1 Place LPI channel in the tripped condition.	1 hour Prior to performing the next LPI CHANNEL FUNCTIONAL TEST.
	<u>AND</u> A.2 Restore the LPI channel to OPERABLE status.	
B. Required Action <u>NOT</u> met within required Completion Time.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

-----NOTE-----
1. LPI pump start automatically bypassed when off-site power is not available. Bypass is automatically removed when off-site power is restored.
2. Provisions on LCO 3.0.4 are not applicable.

3.6 PLANT SYSTEMS

3.6.4 Emergency Feedwater System

LCO 3.6.4 Two emergency feedwater (EFW) trains shall be OPERABLE.

INSERT
NOTE ↴

APPLICABILITY: MODES 1, 2, and 3.

-----NOTE-----
ACTIONS Operability of the motor driven emergency feedwater pump is not required in MODE 3 when reactor coolant system pressure is < 500 psig and off-site power is not available and low pressure injection is not bypassed. IE

A. One EFW train inoperable.	A.1 Restore train to OPERABLE status.	72 hours
B. Required Action <u>NOT</u> met within required Completion Time.	B.1 Be in MODE 3. <u>AND</u>	6 hours
	B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.4.1</p> <p>-----NOTE----- Provisions of SR 3.0.4 are not applicable for steam driven turbine EFW pump for entry into MODE 3. -----</p> <p>Verify that there is a flow path between each EFW pump and steam generators by pumping water from the EFW tank to the steam generators.</p>	<p>Prior to entering MODE 3 following entry into MODE 5 or 6 for ≥ 30 days.</p>

(continued)