

St. Lucie Unit 2
Docket No. 50-389
Proposed License Amendment
Boron Dilution Interim LCO

ATTACHMENT 3 to L-99-010

ST. LUCIE UNIT 2 MARKED-UP TECHNICAL SPECIFICATION PAGES

INDEX Page IV

LIST OF TABLES Page XXIII

Page 3/4 1-16

Page 3/4 1-17

Page B 3/4 1-3

9903030184 990223
PDR ADDCK 05000389
P PDR

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.0 APPLICABILITY</u>	3/4 0-1
<u>3/4.1 REACTIVITY CONTROL SYSTEMS</u>	
3/4.1.1 BORATION CONTROL	
SHUTDOWN MARGIN - $T_{avg} > 200^{\circ}F$	3/4 1-1
SHUTDOWN MARGIN - $T_{avg} \leq 200^{\circ}F$	3/4 1-3
BORON DILUTION.....	3/4 1-4
MODERATOR TEMPERATURE COEFFICIENT.....	3/4 1-5
MINIMUM TEMPERATURE FOR CRITICALITY.....	3/4 1-6
3/4.1.2 BORATION SYSTEMS	
FLOW PATHS - SHUTDOWN.....	3/4 1-7
FLOW PATHS - OPERATING.....	3/4 1-8
CHARGING PUMPS - SHUTDOWN.....	3/4 1-9
CHARGING PUMPS - OPERATING.....	3/4 1-10
BORIC ACID MAKEUP PUMPS - SHUTDOWN.....	3/4 1-11
BORIC ACID MAKEUP PUMPS - OPERATING.....	3/4 1-12
BORATED WATER SOURCES - SHUTDOWN.....	3/4 1-13
BORATED WATER SOURCES - OPERATING.....	3/4 1-14
<i>delete</i> BORON DILUTION.....	3/4 1-16
3/4.1.3 MOVABLE CONTROL ASSEMBLIES	
CEA POSITION.....	3/4 1-18
POSITION INDICATOR CHANNELS - OPERATING.....	3/4 1-21
POSITION INDICATOR CHANNELS - SHUTDOWN.....	3/4 1-23
CEA DROP TIME.....	3/4 1-24
SHUTDOWN CEA INSERTION LIMIT.....	3/4 1-25
REGULATING CEA INSERTION LIMITS.....	3/4 1-26

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
1.1 FREQUENCY NOTATION	1-8
1.2 OPERATIONAL MODES	1-9
2.2-1 REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS	2-4
3.1-1 MONITORING FREQUENCIES FOR BACKUP BORON DILUTION DETECTION FOR ST. LUCIE-2	3/4 1-17
<i>DELETED</i> <i>replace</i> 3.2-1 DELETED	3/4 2-11
3.2-2 DNB MARGIN LIMITS	3/4 2-15
3.3-1 REACTOR PROTECTIVE INSTRUMENTATION	3/4 3-2
3.3-2 DELETED	
4.3-1 REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-8
3.3-3 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION	3/4 3-12
3.3-4 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES	3/4 3-17
3.3-5 DELETED	
4.3-2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-22
3.3-6 RADIATION MONITORING INSTRUMENTATION	3/4 3-25
4.3-3 RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-28
3.3-8 DELETED	
4.3-5 DELETED	

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.2.9 Boron concentration shall be verified consistent with SHUTDOWN MARGIN requirements of Specifications 3.1.1.1, 3.1.1.2, and 3.9.1.

APPLICABILITY:

- a. MODES 3, 4, and 5 with RCS level above the hot leg centerline by use of boronometer or sampling per Table 3.1-1, and
- b. MODE 5 with RCS level below the hot leg centerline; and MODE 6 by sampling per Table 3.1-1.

ACTION:

- a. With the boron concentration not consistent with required SHUTDOWN MARGIN, initiate emergency boration.
- b. If unable to determine the RCS boron concentration by the means specified above, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes until one of the means of determining the RCS boron concentration as specified above is restored to OPERABLE status.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.1.2.9

- a. When in MODES 3, 4, 5, and 6, the boron concentration shall be determined consistent with SHUTDOWN MARGIN requirements once per 8 hours.
- b. The boronometer, when used to monitor boron concentration, shall be demonstrated OPERABLE by performance of:
 - 1. a CHANNEL CHECK once per 12 hours, and
 - 2. a CHANNEL CALIBRATION once per 18 months.
- c. Whenever performing an RCS heatup or cooldown, determine the boron concentration at least once every 50°F change in temperature..

Page 3/4 1-17 (Amendment No.8) has been deleted from the Technical Specifications. The next page is 3/4 1-18.

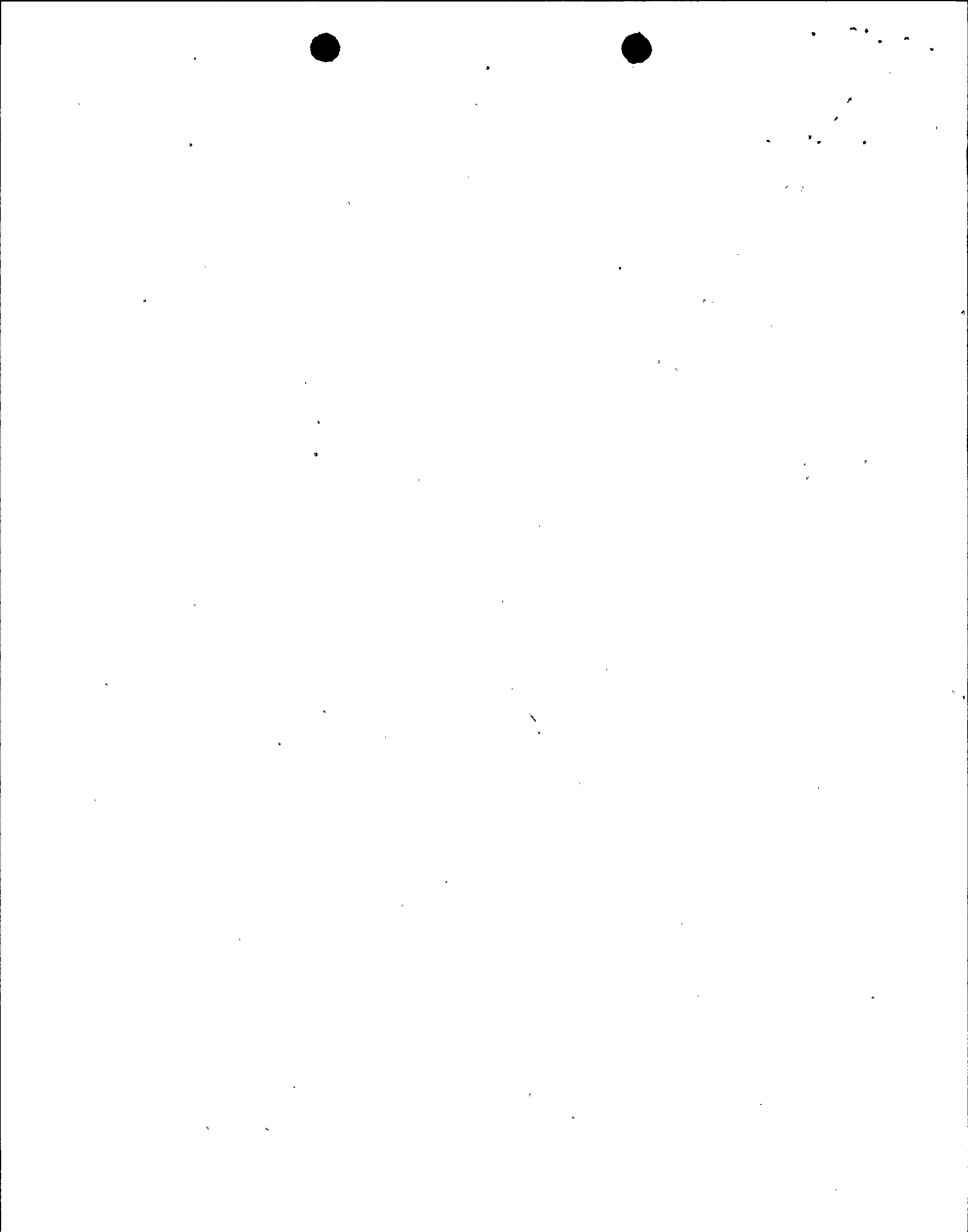


TABLE 3.1-1

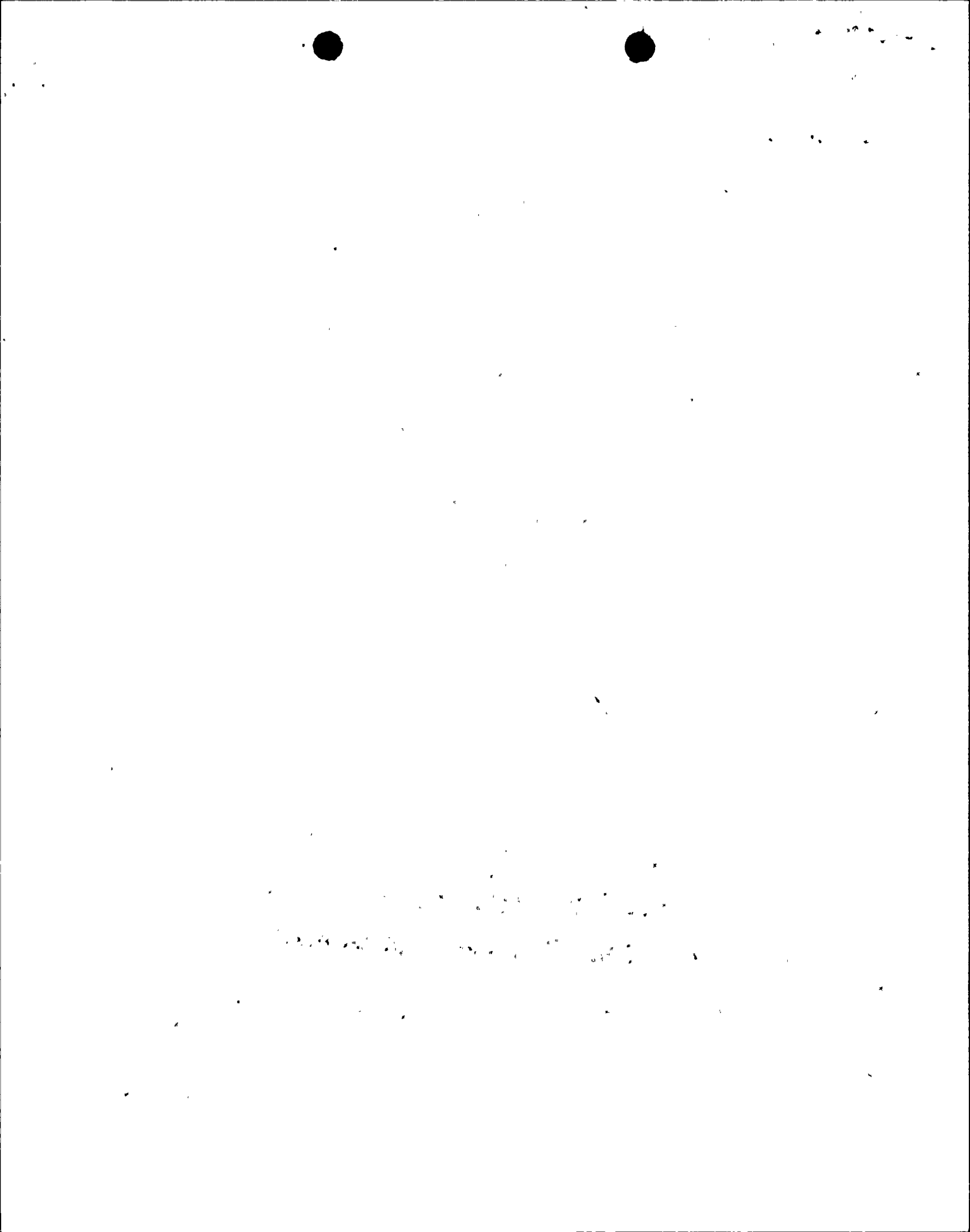
MONITORING FREQUENCIES FOR BACKUP BORON DILUTION DETECTION
FOR ST. LUCIE-2

MODE	Number of OPERABLE Charging Pumps*			
	0	1	2	3
3	12 hr	100 min	40 min	25 min
4	12 hr	130 min	50 min	30 min
5	8 hr	100 min	40 min	25 min
5 (RCS level below hot leg centerline)	8 hr	35 min	Operation not allowed**	Operation not allowed**
6	24 hr	220 min	95 min	55 min

*Charging pump OPERABILITY for any period of time shall constitute OPERABILITY for the entire monitoring frequency.

**In MODE 5 with the RCS level below the hot leg centerline; at least two charging pumps shall be verified to be inoperable by racking out their motor circuit breakers.

DELETE THIS PAGE
FROM THE TECHNICAL SPECIFICATIONS



BASES

The contained water volume limits includes allowance for water not available because of discharge line location and other physical characteristics.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

The limits on contained water volume and boron concentration of the RWT also ensure a pH value of between 7.0 and 8.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

~~3/4.1.2.9 BORON DILUTION~~

~~The simultaneous use of the boronmeter and RCS sampling at intervals dependent upon the MODE and the number of OPERABLE charging pumps to monitor the RCS boron concentration provides diverse and redundant indications of an inadvertent boron dilution. This will allow detection with sufficient time for termination of the boron dilution event before a complete loss of SHUTDOWN MARGIN occurs.~~

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of CEA misalignments are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met.

The ACTION statements applicable to a stuck or untrippable CEA, to two or more inoperable CEAs and to a large misalignment (greater than or equal to 15 inches) of two or more CEAs, require a prompt shutdown of the reactor since either of these conditions may be indicative of a possible loss of mechanical functional capability of the CEAs and in the event of a stuck or untrippable CEA, the loss of SHUTDOWN MARGIN.

For small misalignments (less than 15 inches) of the CEAs, there is (1) a small effect on the time-dependent long-term power distributions relative to those used in generating LCOs and LSSS setpoints, (2) a small effect on the available SHUTDOWN MARGIN, and (3) a small effect on the ejected CEA worth used in the safety analysis. Therefore, the ACTION statement associated with small misalignments of CEAs permits a 1-hour time interval during which attempts may be made to restore the CEA to within its alignment requirements. The 1-hour time limit is sufficient to (1) identify causes of a misaligned CEA, (2) take appropriate corrective action to realign the CEAs, and (3) minimize the effects of xenon redistribution.

