

DISTRIBUTION CONTROL LIST

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| CC_NAME | NAME | DEPT | LOCATION |
|---------|---------------------------------------|--|----------|
| 1 | OPS PROCEDURE GROUP SUPV. | OPS PROCEDURE GROUP | IP2 |
| 3 | PLANT MANAGER'S OFFICE. | UNIT 3 (UNIT 3/IPEC ONLY) | IP2 |
| 5 | CONTROL ROOM (FL) | OPS (3PT-D001/6) (IP3/IPEC) | IP3 |
| 11 | RES DEPARTMENT MANAGER | RES (UNIT 3/IPEC ONLY) | 45-4-A |
| 19 | STEWART ANN | LICENSING | GSB-2D |
| 20 | CHEMISTRY SUPERVISOR | CHEMISTRY DEPARTMENT | 45-4-A |
| 21 | TSC (IP3) | EEC BUILDING | IP2 |
| 22 | SHIFT MGR. (LUB-001-GEN) | OPERATIONS (UNIT 3) | IP3 |
| 23 | LIS | LICENSING & INFO SERV | OFFSITE |
| 25 | SIMULATOR | TRAIN (UNIT 3/IPEC ONLY) | 48-2-A |
| 28 | RESIDENT INSPECTOR | US NRC 88' ELEVATION | IP2 |
| 32 | EOF | E-PLAN (ALL EP'S) | EOF |
| 47 | CHAPMAN N | BECHTEL | OFFSITE |
| 50 | HAAS, CHERYL A. | WESTINGHOUSE ELECTRIC | OFFSITE |
| 61 | SIMULATOR | TRAIN (UNIT 3/IPEC ONLY) | 48-2-A |
| 69 | CONROY PAT | LICENSING/ROOM 205 | GSB-2D |
| 99 | BARANSKI J (ALL) | ST. EMERG. MGMT. OFFICE | OFFSITE |
| 106 | SIMULATOR INSTRUCT AREA | TRG/ 3PT-D001-D006 ONLY) | #48 |
| 164 | CONTROL ROOM (FL) | OPS (3PT-D001/6) (IP3/IPEC) | IP3 |
| 273 | FAISON CHARLENE | NUCLEAR LICENSING | WPO-12 |
| 319 | L.GRANT (LRQ-OPS TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 354 | L.GRANT (LRQ-OPS/TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 357 | L.GRANT (ITS/INFO ONLY) | TRAINING - ILO CLASSES | 48-2-A |
| 424 | GRANT LEAH | (UNIT 3/IPEC ONLY) | #48 |
| 474 | OUELLETTE P | ENG., PLAN & MGMT INC | OFFSITE |
| 489 | CLOUGHNESSY PAT | PLANT SUPPORT TEAM | GSB-3B |
| 492 | WORK CONTROL | OPERATIONS 72' ELEV | IP2 |
| 493 | OPERATIONS FIN TEAM | 33 TURBIN DECK | 45-1-A |
| 494 | AEOF/A.GROSJEAN (ALL EP'S) | E-PLAN (EOP'S ONLY) | WPO-12D |
| 496 | L.GRANT (LRQ-OPS/TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 497 | L.GRANT (LRQ-OPS/TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 500 | L.GRANT (LRQ-OPS TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 501 | L.GRANT (LRQ-OPS TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 512 | L.GRANT (LRQ-OPS TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 513 | L.GRANT (LRQ-OPS TRAIN) | LRQ (UNIT 3/IPEC ONLY) | #48 |
| 518 | DOCUMENT CONTROL DESK | NRC (ALL EP'S) | OFFSITE |

A001



Entergy

IPEC SITE
MANAGEMENT
MANUAL

QUALITY RELATED
ADMINISTRATIVE PROCEDURE

IP-SMM-AD-103 Revision 0

INFORMATIONAL USE

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ATTACHMENT 10.1

SMM CONTROLLED DOCUMENT TRANSMITTAL FORM

SITE MANAGEMENT MANUAL CONTROLLED DOCUMENT TRANSMITTAL FORM - PROCEDURES

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Entergy

CONTROLLED DOCUMENT
TRANSMITTAL FORM - PROCEDURES

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INDIAN POINT 3
TECHNICAL SPECIFICATION BASES

INSTRUCTIONS FOR UPDATE: 20-07/06/06

Pages are to be inserted into your controlled copy of the IP3 Technical Specifications Bases following the instructions listed below. The **TAB** notation indicates which section the pages are located.

| Remove Page | Insert Page |
|--|--|
| TAB - List Of Effective Sections | |
| List of Effective Sections, Rev. 19 (5 pages) | List of Effective Sections, Rev. 20 (5 pages) |
| TAB 3.9 – Boron Concentration | |
| B 3.9.1, Rev. 0 (4 pages) | B 3.9.1, Rev. 1 (4 pages) |

TECHNICAL SPECIFICATION BASES
LIST OF EFFECTIVE SECTIONS

| BASES SECTION | REV | NUMBER OF PAGES | EFFECTIVE DATE |
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| Tbl of Cnt | 2 | 4 | 8/10/2005 |
| B 2.0 SAFETY LIMITS | | | |
| B 2.1.1 | 1 | 4 | 06/03/2005 |
| B 2.1.2 | 1 | 4 | 06/03/2005 |
| B 3.0 LCO AND SR APPLICABILITY | | | |
| B 3.0 | 2 | 16 | 08/10/2005 |
| B 3.1 REACTIVITY CONTROL | | | |
| B 3.1.1 | 1 | 6 | 06/03/2005 |
| B 3.1.2 | 0 | 7 | 03/19/2001 |
| B 3.1.3 | 1 | 7 | 10/27/2004 |
| B 3.1.4 | 0 | 13 | 03/19/2001 |
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| B 3.2 POWER DISTRIBUTION LIMITS | | | |
| B 3.2.1 | 0 | 7 | 03/19/2001 |
| B 3.2.2 | 1 | 7 | 06/03/2005 |
| B 3.2.3 | 0 | 9 | 03/19/2001 |
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| B 3.3 INSTRUMENTATION | | | |
| B 3.3.1 | 2 | 58 | 06/03/2005 |
| B 3.3.2 | 4 | 45 | 04/11/2005 |
| B 3.3.3 | 3 | 18 | 08/10/2005 |
| B 3.3.4 | 1 | 6 | 08/10/2005 |
| B 3.3.5 | 1 | 6 | 10/27/2004 |
| B 3.3.6 | 1 | 8 | 04/11/2005 |
| B 3.3.7 | 1 | 6 | 04/11/2005 |
| B 3.3.8 | 2 | 4 | 06/03/2005 |
| B 3.4 REACTOR COOLANT SYSTEM | | | |
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| B 3.4.2 | 0 | 3 | 03/19/2001 |
| B 3.4.3 | 2 | 9 | 06/03/2005 |
| B 3.4.4 | 0 | 4 | 03/19/2001 |
| B 3.4.5 | 0 | 6 | 03/19/2001 |
| B 3.4.6 | 1 | 6 | 06/03/2005 |
| B 3.4.7 | 0 | 7 | 03/19/2001 |
| B 3.4.8 | 0 | 4 | 03/19/2001 |
| B 3.4.9 | 3 | 5 | 06/03/2005 |
| B 3.4.10 | 0 | 5 | 03/19/2001 |
| B 3.4.11 | 1 | 7 | 08/10/2005 |
| B 3.4.12 | 2 | 19 | 08/10/2005 |
| B 3.4.13 | 3 | 6 | 06/03/2005 |
| B 3.4.14 | 0 | 10 | 03/19/2001 |
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| B 3.5 ECCS | | | |
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| B 3.5.3 | 1 | 4 | 08/10/2005 |
| B 3.5.4 | 0 | 9 | 03/19/2001 |

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| B 3.6 CONTAINMENT | | | |
| B 3.6.1 | 0 | 5 | 03/19/2001 |
| B 3.6.2 | 1 | 9 | 06/03/2005 |
| B 3.6.3 | 0 | 17 | 03/19/2001 |
| B 3.6.4 | 0 | 3 | 03/19/2001 |
| B 3.6.5 | 1 | 5 | 06/20/2003 |
| B 3.6.6 | 2 | 13 | 06/03/2005 |
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| B 3.7 PLANT SYSTEMS | | | |
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| B 3.7.10 | 1 | 3 | 06/03/2005 |
| B 3.7.11 | 5 | 7 | 08/10/2005 |
| B 3.7.12 | 1 | 4 | 04/11/2005 |
| B 3.7.13 | 3 | 7 | 06/03/2005 |
| B 3.7.14 | 1 | 3 | 04/11/2005 |
| B 3.7.15 | 0 | 5 | 03/19/2001 |
| B 3.7.16 | 0 | 6 | 03/19/2001 |
| B 3.7.17 | 1 | 4 | 06/03/2005 |
| B 3.8 ELECTRICAL POWER | | | |
| B 3.8.1 | 3 | 30 | 11/04/2005 |
| B 3.8.2 | 0 | 7 | 03/19/2001 |
| B 3.8.3 | 0 | 13 | 03/19/2001 |
| B 3.8.4 | 1 | 11 | 01/22/2002 |
| B 3.8.5 | 0 | 4 | 03/19/2001 |
| B 3.8.6 | 0 | 8 | 03/19/2001 |
| B 3.8.7 | 1 | 8 | 06/20/2003 |
| B 3.8.8 | 1 | 4 | 06/20/2003 |
| B 3.8.9 | 2 | 14 | 06/20/2003 |
| B 3.8.10 | 0 | 4 | 03/19/2001 |
| B 3.9 REFUELING OPERATIONS | | | |
| B 3.9.1 | 1 | 4 | 07/06/2006 |
| B 3.9.2 | 0 | 4 | 03/19/2001 |
| B 3.9.3 | 2 | 7 | 06/03/2005 |
| B 3.9.4 | 0 | 4 | 03/19/2001 |
| B 3.9.5 | 0 | 4 | 03/19/2001 |
| B 3.9.6 | 2 | 3 | 04/11/2005 |

TECHNICAL SPECIFICATION BASES
REVISION HISTORY

REVISION HISTORY FOR BASES

| AFFECTED SECTIONS | REV | EFFECTIVE DATE | DESCRIPTION |
|---------------------------------------|-----|----------------|--|
| ALL | 0 | 03/19/01 | Initial issue of Bases derived from NUREG-1431, in conjunction with Technical Specification Amendment 205 for conversion of 'Current Technical Specifications' to 'Improved Technical Specifications'. |
| BASES UPDATE PACKAGE 01-031901 | | | |
| B 3.4.13 B 3.4.15 | 1 | 03/19/01 | Changes regarding containment sump flow monitor per NSE 01-3-018 LWD Rev 0. Change issued concurrent with Rev 0. |
| BASES UPDATE PACKAGE 02-051801 | | | |
| Table of Contents | 1 | 05/18/01 | Title of Section B 3.7.3 revised per Tech Spec Amend 207 |
| B 3.7.3 | 1 | 05/18/01 | Implementation of Tech Spec Amend 207 |
| BASES UPDATE PACKAGE 03-111901 | | | |
| B 3.3.2 | 1 | 11/19/01 | Correction to statement regarding applicability of Function 5, to be consistent with the Technical Specification. |
| B 3.3.3 | 1 | 11/19/01 | Changes to reflect reclassification of certain SG narrow range level instruments as QA Category M per NSE 97-3-439, Rev 1. |
| B 3.4.13 B 3.4.15 | 2 | 11/19/01 | Changes to reflect installation of a new control room alarm for 'VC Sump Pump Running'. Changes per NSE 01-3-018, Rev 1 and DCP 01-3-023 LWD. |
| B 3.7.11 | 1 | 11/19/01 | Clarification of allowable flowrate for CRVS in 'incident mode with outside air makeup.' |
| BASES UPDATE PACKAGE 04-012202 | | | |
| B 3.3.2 | 2 | 01/22/02 | Clarify starting logic of 32 ABFP per EVL-01-3-078 MULTI, Rev 0. |
| B 3.8.1 | 1 | 01/22/02 | Provide additional guidance for SR 3.8.1.1 and Condition Statements A.1 and B.1 per EVL-01-3-078 MULTI, Rev 0. |
| B 3.8.4 | 1 | 01/22/02 | Revision of battery design description per plant modification and to reflect Tech Spec Amendment 209. |
| B 3.8.9 | 1 | 01/22/02 | Provide additional information regarding MCC in Table B 3.8.9-1 per EVL-01-3-078 MULTI, Rev 0. |
| BASES UPDATE PACKAGE 05-093002 | | | |
| B 3.0 | 1 | 09/30/02 | Changes to reflect Tech Spec Amendment 212 regarding delay period for a missed surveillance. Changes adopt TSTF 358, Rev 6. |
| B 3.3.1 | 1 | 09/30/02 | Changes regarding description of turbine runback feature per EVAL-99-3-063 NIS. |
| B 3.3.3 | 2 | 09/30/02 | Changes to reflect Tech Spec Amendment 211 regarding CETs and other PAM instruments. |
| B 3.7.9 | 1 | 09/30/02 | Changes regarding SWN -35-1 and -2 valves per EVAL-00-3-095 SWS, Rev 0. |

**TECHNICAL SPECIFICATION BASES
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| AFFECTED SECTIONS | REV | EFFECTIVE DATE | DESCRIPTION |
|---------------------------------------|-----|----------------|--|
| BASES UPDATE PACKAGE 06-120402 | | | |
| B 3.3.2 | 3 | 12/04/02 | Changes to reflect Tech Spec Amendment 213 regarding 1.4% power uprate. |
| B 3.6.6 | 1 | | |
| B 3.7.1 | 1 | | |
| B 3.7.6 | 1 | | |
| BASES UPDATE PACKAGE 07-031703 | | | |
| B 3.3.8 | 1 | 03/17/2003 | Changes to reflect Tech Spec Amendment 215 regarding implementation of Alternate Source Term analysis methodology to the Fuel Handling Accident. |
| B 3.7.13 | 1 | | |
| B 3.9.3 | 1 | | |
| BASES UPDATE PACKAGE 08-032803 | | | |
| B 3.4.9 | 1 | 03/28/2003 | Changes to reflect Tech Spec Amendment 216 regarding relaxation of pressurizer level limits in MODE 3. |
| BASES UPDATE PACKAGE 09-062003 | | | |
| B 3.4.9 | 2 | 06/20/2003 | Changes to reflect commitment for a dedicated operator per Tech Spec Amendment 216. |
| B 3.6.5 | 1 | 06/20/2003 | Implements Corrective Action 11 from CR-IP3-2002-02095; 4 FCUs should be in operation to assure representative measurement of containment air temperature. |
| B 3.7.11 | 2 | 06/20/2003 | Correction to Background description regarding system response to Firestat detector actuation per ACT 02-62887. |
| B 3.7.13 | 2 | 06/20/2003 | Revision to Background description of FSB air tempering units to reflect design change per DCP 95-3-142. |
| B 3.8.7 | 1 | 06/20/2003 | Changes to reflect replacement of Inverter 34 per DCP-01-022. |
| B 3.8.8 | 1 | 06/20/2003 | |
| B 3.8.9 | 2 | 06/20/2003 | |
| BASES UPDATE PACKAGE 10-102704 | | | |
| B 3.1.3 | 1 | 10/27/2004 | Clarification of the surveillance requirements for TS 3.1.3 per 50.59 screen. |
| B 3.3.5 | 1 | 10/27/2004 | Clarify the requirements for performing a Trip Actuating Device Operational Test (TADOT) on the 480V degraded grid and undervoltage relays per 50.59 screen. |
| B 3.4.3 | 1 | 10/27/2004 | Extension of the RCS pressure/temperature limits and corresponding OPS limits from 16.17 to 20 EFY (TS Amendment 220). |
| B 3.4.12 | 1 | | |
| B 3.5.1 | 1 | 10/27/2004 | Changes to reflect Tech Spec Amendment 222 regarding extension of completion time for Accumulators. |
| BASES UPDATE PACKAGE 11-121004 | | | |
| B 3.7.7 | 1 | 12/17/2004 | Addition of valves CT-1300 and CT-1302 to Surveillance SR 3.7.7.2 to verify that all city water header supply isolation valves are open. Reflects Tech Spec Amendment 218. |
| BASES UPDATE PACKAGE 12-012405 | | | |
| B 3.7.11 | 3 | 01/24/2005 | Temporary allowance for use of KI/SCBA for unfiltered inleakage above limit. |

**TECHNICAL SPECIFICATION BASES
REVISION HISTORY**

| AFFECTED SECTIONS | REV | EFFECTIVE DATE | DESCRIPTION |
|---------------------------------------|-----|----------------|--|
| BASES UPDATE PACKAGE 13-022505 | | | |
| B 3.7.5 | 1 | 02/25/2005 | Clarification on Surveillance Requirement 3.7.5.3 as it relates to plant condition/frequency of performance of Auxiliary Feedwater Pump full flow testing. |
| BASES UPDATE PACKAGE 14-030705 | | | |
| B 3.9.6 | 1 | 03/07/2005 | Changes to reflect that the decay time prior to fuel movement is a minimum of 84 hours per Tech Spec Amendment 215. |
| BASES UPDATE PACKAGE 15-041105 | | | |
| B 3.3.2 | 4 | 04/11/2005 | Changes to reflect AST as per Tech Spec Amendment 224. NOTE: In addition to the AST changes to B. 3.7.11, the temporary allowance for use of KI/SCBA for unfiltered inleakage above limit is being removed. Tracer Gas testing is complete. |
| B 3.3.6 | 1 | | |
| B. 3.3.7 | 1 | | |
| B 3.7.11 | 4 | | |
| B 3.7.12 | 1 | | |
| B 3.7.14 | 1 | | |
| B 3.9.6 | 2 | | |
| BASES UPDATE PACKAGE 16-060305 | | | |
| B 2.1.1 | 1 | 06/03/2005 | Changes to reflect SPU as per Tech Spec Amendment 225. |
| B 2.1.2 | 1 | | |
| B 3.1.1 | 1 | | |
| B 3.2.2 | 1 | | |
| B 3.3.1 | 2 | | |
| B 3.3.8 | 2 | | |
| B 3.4.1 | 1 | | |
| B 3.4.3 | 2 | | |
| B 3.4.6 | 1 | | |
| B 3.4.9 | 3 | | |
| B 3.4.13 | 3 | | |
| B 3.4.16 | 1 | | |
| B 3.5.2 | 1 | | |
| B 3.6.2 | 1 | | |
| B 3.6.6 | 2 | | |
| B 3.6.7 | 1 | | |
| B 3.6.9 | 1 | | |
| B 3.6.10 | 1 | | |
| B 3.7.1 | 2 | | |
| B 3.7.2 | 1 | | |
| B 3.7.5 | 2 | | |
| B 3.7.6 | 2 | | |
| B 3.7.8 | 1 | | |
| B 3.7.9 | 2 | | |
| B 3.7.10 | 1 | | |
| B 3.7.13 | 3 | | |
| B 3.7.17 | 1 | | |
| B 3.9.3 | 2 | | |

**TECHNICAL SPECIFICATION BASES
REVISION HISTORY**

| AFFECTED SECTIONS | REV | EFFECTIVE DATE | DESCRIPTION |
|---------------------------------------|-----|----------------|---|
| BASES UPDATE PACKAGE 17-081005 | | | |
| TOC | 2 | 08/10/2005 | <p>B 3.3.3, B 3.6.8 – Removal of Hydrogen Recombiners from the bases as per Technical Specification Amendment 228. B 3.3.3 is also affected by Amendment 226.</p> <p>B 3.7.11 - Add reference that if the primary coolant source of containment is in question, refer to ITS 5.5.2.</p> <p>All other bases changes for this revision are associated with Technical Specification Amendment 226 regarding increase flexibility in Mode Restraints.</p> |
| B 3.0 | 2 | | |
| B 3.3.3 | 3 | | |
| B 3.3.4 | 1 | | |
| B 3.4.11 | 1 | | |
| B 3.4.12 | 2 | | |
| B 3.4.15 | 3 | | |
| B 3.4.16 | 2 | | |
| B 3.5.3 | 1 | | |
| B 3.6.8 | 1 | | |
| B 3.7.4 | 1 | | |
| B 3.7.5 | 3 | | |
| B 3.7.11 | 5 | | |
| B 3.8.1 | 2 | | |
| BASES UPDATE PACKAGE 18-091605 | | | |
| B 3.5.2 | 2 | 09/16/2005 | Reflect implementation of ER-04-2-029 as part of Stretch Power Uprate (SPU) – HHSI Modification. |
| B 3.6.10 | 2 | | Update LCO and Condition B to clarify required actions consistent with FSAR. |
| BASES UPDATE PACKAGE 19-110405 | | | |
| B 3.8.1 | 3 | 11/04/2005 | Include operability criteria for 138 kV and 13.8 kV offsite circuits. |
| BASES UPDATE PACKAGE 20-070606 | | | |
| B 3.9.1 | 1 | 07/06/2006 | Clarification on effective method for ensuring shutdown margin. |

B 3.9 REFUELING OPERATIONS

B 3.9.1 Boron Concentration

BASES

BACKGROUND

The limit on the boron concentrations of the Reactor Coolant System (RCS) and the refueling cavity (which includes the refueling canal) during refueling ensures that the reactor remains subcritical during MODE 6. Refueling boron concentration is the soluble boron concentration in the coolant in each of these volumes having direct access to the reactor core during refueling.

The soluble boron concentration offsets the core reactivity and is measured by chemical analysis of a representative sample of the coolant in each of the volumes. The refueling boron concentration limit is specified in the COLR. Plant procedures ensure the specified boron concentration in order to maintain an overall core reactivity of $k_{eff} \leq 0.95$ during fuel handling, with control rods and fuel assemblies assumed to be in the most adverse configuration (least negative reactivity) allowed by plant procedures.

GDC 26 of 10 CFR 50, Appendix A, requires that two independent reactivity control systems of different design principles be provided (Ref. 1). One of these systems must be capable of holding the reactor core subcritical under cold conditions. The Chemical and Volume Control System (CVCS) is the system capable of maintaining the reactor subcritical in cold conditions by maintaining the boron concentration.

The reactor is brought to shutdown conditions before beginning operations to open the reactor vessel for refueling. After the RCS is cooled and depressurized and the vessel head is unbolted, the head is slowly removed to form the refueling cavity. The refueling canal and the refueling cavity are then flooded with borated water from the refueling water storage tank.

(continued)

BASES

BACKGROUND
(continued)

The pumping action of the RHR System in the RCS and the natural circulation due to thermal driving heads in the reactor vessel and refueling cavity mix the added concentrated boric acid with the water in the refueling canal. The RHR System is in operation during refueling (see LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation—High Water Level," and LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation—Low Water Level") to provide forced circulation in the RCS and assist in maintaining the boron concentrations in the RCS and the refueling cavity above the COLR limit.

APPLICABLE SAFETY ANALYSES

During refueling operations, the reactivity condition of the core is consistent with the initial conditions assumed for the boron dilution accident in the accident analysis and is conservative for MODE 6. The boron concentration limit specified in the COLR is based on the core reactivity at the beginning of each fuel cycle (the end of refueling) and includes an uncertainty allowance.

The required boron concentration and the plant refueling procedures, that include use of two independent checks to verify correct fuel assembly and location, ensure that the k_{eff} of the core will remain ≤ 0.95 during the refueling operation. Hence, at least a 5% $\Delta k/k$ margin of safety is established during refueling.

During refueling, the water volume in the spent fuel pit, the transfer canal, the refueling canal, the refueling cavity, and the reactor vessel form a single mass. As a result, the soluble boron concentration is relatively the same in each of these volumes.

The limiting boron dilution accident analyzed occurs in MODE 5 (Ref. 2). A detailed discussion of this event is provided in Bases for LCO 3.1.1, "SHUTDOWN MARGIN (SDM)."

The RCS boron concentration satisfies Criterion 2 of 10 CFR 50.36.

(continued)

BASES

LCO The LCO requires that a minimum boron concentration be maintained in all filled portions of the RCS and the refueling cavity (which includes the refueling canal) while in MODE 6. The boron concentration limit specified in the COLR ensures that a core k_{eff} of ≤ 0.95 is maintained during fuel handling operations. Violation of the LCO could lead to an inadvertent criticality during MODE 6.

APPLICABILITY This LCO is applicable in MODE 6 to ensure that the fuel in the reactor vessel will remain subcritical. The required boron concentration ensures a $k_{eff} \leq 0.95$. Above MODE 6, LCO 3.1.1, "SHUTDOWN MARGIN (SDM)" ensures that an adequate amount of negative reactivity is available to shut down the reactor and maintain it subcritical.

ACTIONS

A.1 and A.2

Continuation of CORE ALTERATIONS or positive reactivity additions (including actions to reduce boron concentration) is contingent upon maintaining the unit in compliance with the LCO. If the boron concentration of any coolant volume in the RCS or the refueling cavity is less than its limit, all operations involving CORE ALTERATIONS or positive reactivity additions must be suspended immediately.

Suspension of CORE ALTERATIONS and positive reactivity additions shall not preclude moving a component to a safe position.

A.3

In addition to immediately suspending CORE ALTERATIONS or positive reactivity additions, boration to restore the concentration must be initiated immediately.

In determining the required combination of boration flow rate and concentration, no unique Design Basis Event must be satisfied. The only requirement is to restore the boron concentration to its required value as soon as possible.

(continued)

BASES

ACTIONS

A.3 (continued)

In order to raise the boron concentration as soon as possible, the operator should begin boration with the best source available for unit conditions.

Once actions have been initiated, they must be continued until the boron concentration is restored. The restoration time depends on the amount of boron that must be injected to reach the required concentration.

SURVEILLANCE REQUIREMENTS

SR 3.9.1.1

This SR ensures that the coolant boron concentration in the RCS and the refueling cavity is within the COLR limits. For sampling purposes, the refueling cavity and canal are considered a single volume. The boron concentration of the coolant in each volume is determined periodically by chemical analysis.

A minimum Frequency of once every 72 hours is a reasonable amount of time to verify the boron concentration of representative samples. The Frequency is based on operating experience, which has shown 72 hours to be adequate.

REFERENCES

1. 10 CFR 50, Appendix A.
 2. FSAR, Chapter 14.
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