Entergy

Entergy Operations, Inc.
17265 River Road
Killona, LA 70057-3093
Tel 504-739-6685
Fax 504-739-6698
jjarrel@entergy.com

John P. Jarrell
Regulatory Assurance Manager
Waterford 3

W3F1-2016-0041 10 CFR 50.71(e)

June 2, 2016

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Technical Specification Index and Bases Update to the NRC for the Period November 4, 2014 through May 31, 2016
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to Waterford Steam Electric Station Unit 3 (Waterford 3) Technical Specification (TS) 6.16, Entergy Operations, Inc. (EOI) hereby submits an update of all changes made to the Waterford 3 Technical Specification Index and Bases since the last submittal per letter W3F1-2014-0067 (ADAMS Accession No. ML14309A687), dated November 5, 2014. This update satisfies the submittal frequency required by TS 6.16, which indicates that the submittal will be made at a frequency consistent with 10 CFR 50.71(e) and exemptions thereto.

There are no commitments associated with this submittal. Should you have any questions or comments concerning this submittal, please contact the Regulatory Assurance Manager, John Jarrell, at (504) 739-6685.

Sincerely,

JPJ/LLB

Attachments:

1. Waterford 3 Technical Specification Index and Bases Change List

2. Waterford 3 Technical Specification Index and Bases Revised Pages

cc: Mr. Mark L. Dapas
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Blvd.
Arlington, TX 76011-4125

RidsRgn4MailCenter@nrc.gov

NRC Senior Resident Inspector
Waterford Steam Electric Station Unit 3
P.O. Box 822
Killona, LA 70066-0751

Frances.Ramirez@nrc.gov
Chris.Speer@nrc.gov

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

April.Pulvirenti@nrc.gov

Attachment 1 to

W3F1-2016-0041

Waterford 3 Technical Specification Index and Bases Change List

Waterford 3 Technical Specification (TS) Index and Bases Change List

T.S. Bases Change No.	Implementation Date	Affected TS Bases or Index Pages	Topic of Change
81	9/17/2015	B XIII B 3/4 9-3	Change No. 81 to TS Bases sections 3/4.9.6 and 3/4 9.7 was implemented by Licensing Basis Document Change Request (LBDCR) 15-024 to reflect moving TS 3.9.6 (Refueling Machine) & 3.9.7 (Crane Travel – Fuel Handling Building) to the TRM.
82	9/22/2015	B 3/4 6.1	Change No. 82 to TS Bases section 3/4.6.1.2 was implemented by Licensing Basis Document Change Request (LBDCR) 15-029 to add NEI 94-01, R2-A "Industry Guideline for Implementing Performance –Based Option of 10 CFR Part 50" regarding surveillance requirements for measuring leakage rate testing.
83	11/20/2015	B 3/4 1-5	Change No. 83 to TS Bases section 3/4.1.3 Movable Control Assemblies was implemented by Licensing Basis Document Change Request (LBDCR) 15-039 to clarify CEA drop time restriction representative of the design and operating conditions for Cycle 3. Adding "revalidated for cycle 21" and "Reverification" may be required.
84	4/20/2016	B 3/4 8-1b	Change No. 84 to the TS Bases section 3/4.8.1.3, was implemented by LBDCR 16-019 to provide explanation of new fuel oil properties defined in the Bases for SR Requirement 3/4.8.3, even if Diesel Generator start and load were required during this time interval, there is a high likelihood that the diesel generator would still be capable of performing its intended function.
85	6/1/2016	B 3/4 7-2f	Change No. 85 to the TS Bases Changing Wet Cooling Tower (WCT) from one to two under Condensate Storage Pool (CSP) 3/4 7.1.3 was implemented by LBDCR 15-032.

Attachment 2 to

W3F1-2016-0041

Waterford 3 Technical Specification Index and Bases Revised Pages

(There are 6 unnumbered pages following this cover page)

→(DRN 05-747, Ch. 40)

INDEX

BASES

SECTION	PAGE
3/4.7 PLANT SYSTEMS (Continued)	
3/4.7.3 COMPONENT COOLING WATER AND AUXILIARY COMPONENT COOLING WATER SYSTEMS................	B 3/4 7-3d
3/4.7.4 ULTIMATE HEAT SINK..	B 3/4 7-4
→(LBDCR 13-003, Ch. 74)	
3/4.7.5 DELETED..	B 3/4 7-4a
←(LBDCR 13-003, Ch. 74)	
3/4.7.6 CONTROL ROOM AIR CONDITIONING SYSTEM............	B 3/4 7-4a
3/4.7.7 CONTROLLED VENTILATION AREA SYSTEM................	B 3/4 7-4c
→(EC-15515, Ch. 60)	
3/4.7.8 DELETED..	B 3/4 7-5
←(EC-15515, Ch. 60)	
→(LBDCR 13-003, Ch. 74)	
3/4.7.9 DELETED..	B 3/4 7-7
←(LBDCR 13-003, Ch. 74)	
3/4.7.12ESSENTIAL SERVICES CHILLED WATER SYSTEM........	B 3/4 7-7
3/4.8 ELECTRICAL POWER SYSTEMS	
3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION SYSTEMS.................	B 3/4 8-1
3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES.......	B 3/4 8-3
3/4.9 REFUELING OPERATIONS	
3/4.9.1 BORON CONCENTRATION..	B 3/4 9-1
3/4.9.2 INSTRUMENTATION..	B 3/4 9-1
3/4.9.3 DECAY TIME...	B 3/4 9-1
3/4.9.4 CONTAINMENT BUILDING PENETRATIONS..................	B 3/4 9-2
→(LBDCR 13-003, Ch. 74)	
3/4.9.5 DELETED..	B 3/4 9-3
←(LBDCR 13-003, Ch. 74)	
→(LBDCR 15-024, Am. 243)	
3/4.9.6 DELETED..	B 3/4 9-3
3/4.9.7 DELETED..	B 3/4 9-3
←(LBDCR 15-024, Am. 243)	
3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION..	B 3/4 9-4

←(DRN 05-747, Ch. 40)

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS (Continued)

→(DRN 03-178, Ch. 21; EC-28875, Ch. 69)

instrumentation channels (Note that Technical Specifications 3/4.3.3, Radiation Monitoring is also applicable). The containment purge lines are automatically closed upon a containment purge isolation signal (CPIS) if the fuel handling accident releases activity above prescribed levels. Closure of at least one of the containment purge isolation valves is sufficient to provide closure of the penetration.

Administrative controls shall ensure that appropriate personnel are aware that when the equipment door, both personnel airlock doors, and/or containment penetrations are open, a specific individual(s) is designated and available to close the equipment door, an airlock door and the penetrations as part of a required evacuation of containment, and any obstruction(s) (e.g., cables and hoses) that could prevent closure of an airlock door and the equipment door be capable of being quickly removed.

←(DRN 03-178, Ch. 21; EC-28875, Ch. 69)

→(LBDCR 13-003, Ch. 74)

3/4.9.5 DELETED

←(LBDCR 13-003, Ch. 74)

→(LBDCR 15-024, Ch. 81)

3/4.9.6 DELETED

→(EC-17724, Ch. 62)

←(EC-17724, Ch. 62, LBDCR 15-024, Ch. 81)

→(LBDCR 15-024, Ch. 81)

3/4.9.7 DELETED

→(EC-32267, Ch. 70; EC-38571, Ch. 71)

←(EC-32267, Ch. 70; EC-38571, Ch. 71, LBDCR 15-024, Ch. 81)

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1.1 CONTAINMENT INTEGRITY

→(DRN 05-131, Ch. 39)

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the limits of 10 CFR 50.67 during accident conditions.

←(DRN 05-131, Ch. 39)

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to $\leq 0.75\ L_a$ during the performance of the periodic Type A tests to account for possible degradation of the containment leakage barriers between leakage tests. Also, the summation of penetration leakages measured during Type B and C testing is limited to $0.6\ L_a$. At all other times between required leakage rate tests, overall containment leakage is limited to L_a. The maximum allowable containment leakage rate, L_a, is 0.5 % by weight of the containment air per 24 hours at the design basis accident pressure, P_a, of 44 psig.

→(LBDCR 15-029, Ch. 82)

The surveillance requirements for measuring leakage rates are consistent with the requirements of 10 CFR 50, Appendix J, Option B, and leakage rate testing is performed in accordance with the guidelines contained in (NEI) 94-01, Revision 2-A, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated October 2008.

←(LBDCR 15-029, Ch. 82)

The periodic performance of Type A, B and C tests verifies that the containment leakage rate does not exceed the levels assumed in the safety analyses.

Secondary containment bypass leakage paths previously identified in Table 3.6-1 are now identified in the Technical Requirements Manual.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

MOVABLE CONTROL ASSEMBLIES (Continued)

continued operations when the positions of CEAs with inoperable position indicators can be verified by the "Full In" or "Full Out" limits.

CEA positions and OPERABILITY of the CEA position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

The arithmetic average CEA drop time restriction is consistent with the assumed CEA drop time used in the safety analyses. The maximum CEA drop time restriction limits the CEA drop time distribution about the average to that used to support the safety analyses. Measurement with T_{avg} greater than or equal to 520°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions. The CEA drop time restriction is representative of the design and operating conditions for Cycle 3 and revalidated for Cycle 21. Reverification may be required for (1) any fuel management change that significantly affects the core wide axial or radial power profiles, and (2) any mechanical, flow, control, or CEA location changes that would significantly affect the CEA drop time distribution.

The establishment of LSSS and LCOs requires that the expected long and short-term behavior of the radial peaking factors be determined. The long term behavior relates to the variation of the steady-state radial peaking factors with core burnup and is affected by the amount of CEA insertion assumed, the portion of a burnup cycle over which such insertion is assumed, and the expected power level variation throughout the cycle. The short term behavior relates to transient perturbations to the steady-state radial peaks due to radial xenon redistribution. The magnitudes of such perturbations depend upon the expected use of the CEAs during anticipated power reductions and load maneuvering. Analyses are performed based on the expected mode of operation of the NSSS (base loaded, or load maneuvering) and from these analyses CEA insertions are determined and a consistent set of radial peaking factors defined. The Long Term Steady State and Short Term Insertion Limits are determined based upon the assumed mode of operation used in the analyses and provide a means of preserving the assumptions on CEA insertions used. The limits specified serve to limit the behavior of the radial peaking factors within the bounds determined from analysis. The actions specified serve to limit the extent of radial xenon redistribution effects to those accommodated in the analyses. The Long and Short Term Insertion Limits of Specification 3.1.3.6 are specified for the plant which has been designed for primarily base loaded operation but which has the ability to accommodate a limited amount of load maneuvering.

The Transient Insertion Limits of Specification 3.1.3.6 and the Shutdown CEA Insertion Limits of Specification 3.1.3.5 ensure that (1) the minimum SHUTDOWN MARGIN is maintained, and (2) the potential effects of a CEA ejection accident are limited to acceptable levels. Long-term operation at the Transient Insertion Limits is not permitted since such operation could have effects on the core power distribution which could invalidate assumptions used to determine the behavior of the radial peaking factors. Insertion of Reg. Groups 5 and 6 is permitted to be essentially tip-to-tip within the limits imposed by the

3/4.8.1, 3/4.8.2, and 3/4.8.3 A.C. SOURCES, AND ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

→(EC-10725, Ch. 56; EC-15945, Ch. 61)

Guide 1.137 October 1979. The minimum onsite stored fuel oil is sufficient to operate the diesel generator for a period longer than the time to replenish the onsite supply from the outside sources discussed in FSAR 9.5.4.2.

An additional provision is included in the ACTION which allows the diesel generators to remain operable when their 7 day fuel oil supply is not available provided that at least a 6 day supply of fuel oil is available. This provision is acceptable on the basis that replacement fuel oil is onsite within the first 48 hours after falling below the 7 day supply. An administrative limit of greater than 37,696 gallons assures at least 37,000 usable gallons are stored in the tank,

←(EC-10725, Ch. 56; EC-15945, Ch. 61)

LCO 3.8.1.3 (Continued)

ACTION a (Continued)

accounting for volumetric shrink and instrumentation uncertainty. This useable volume is sufficient to operate the diesel generator for 5 days based on the full continuous load (4400kW) of the diesel generator and is sufficient to operable the diesel generator for greater than 6 days based on the time dependent loads of the diesel generator following a loss of offsite power and a design basis accident.

ACTION b

→(EC-15945, Ch. 61)

This ACTION is entered as a result of a failure to meet the acceptance criterion of particulate limits. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between surveillance frequency intervals, and proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7-day Completion Time allows for further evaluation, re-sampling, and re-analysis of the DG fuel oil.

←(EC-15945, Ch. 61)

ACTION c

→(LBDCR 16-019, Ch. 84)

With the new fuel oil properties defined in the Bases for SR 4.8.1.3.2 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a diesel generator start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the diesel generator would still be capable of performing its intended function.

←(LBDCR 16-019, Ch. 84)

ACTION d

→(EC-15945, Ch. 61)

This ACTION is entered as a result of the failure to meet any of the other ACTIONS.

←(EC-10725, Ch. 56; EC-15945, Ch. 61)

3/4.7.1.2 EMERGENCY FEEDWATER SYSTEM (Continued)

Surveillance Requirements (Continued)

d. The SR for flow testing ensures that the EFW system is aligned properly by verifying the flow paths from the condensate storage pool (CSP) to each steam generator before entering MODE 2 operation after being in MODE 4, 5, 6, or defueled, for 30 days or longer, or whenever feedwater line cleaning through the emergency feedwater line has been performed. Various combinations of pumps and valves may be used such that all flow paths (and flow legs) are tested at least once during the Surveillance.

OPERABILITY of EFW flow paths must be verified before sufficient core heat is generated that would require the operation of the EFW System during a subsequent shutdown. The frequency is reasonable, based on engineering judgment, and other administrative controls to ensure that flow paths remain OPERABLE. To further ensure EFW system alignment, the OPERABILITY of the flow paths is verified following extended outages to determine that no misalignment of valves has occurred. This SR ensures that the flow paths from the CSP to the steam generators are properly aligned.

3/4.7.1.3 CONDENSATE STORAGE POOL

The OPERABILITY of the condensate storage pool (CSP) with the minimum water volume of 173,500 gallons (170,000 gallons for EFW system usage and 3,500 gallons for CCW makeup system usage), plus makeup from one Wet Cooling Tower (WCT) basin, ensures that sufficient water is available to cool the Reactor Coolant System to shutdown cooling entry conditions following any design basis accident. This makeup water includes the capability to maintain HOT STANDBY for at least an additional 2 hours prior to initiating shutdown cooling.

→(LBDCR 15-032, Ch. 85)

The combined capacity (CSP and two WCT) provides sufficient cooling for 24 hours until shutdown cooling is initiated in the event the ultimate heat sink sustains tornado damage concurrent with the tornado event.

←(LBDCR 15-032, Ch. 85)

If natural circulation is required, the combined capacity (CSP and one WCT) is sufficient to maintain the plant at HOT STANDBY for 4 hours, followed by a cooldown to shutdown cooling entry conditions assuming the availability of only onsite or only offsite power, and the worst single failure (loss of a diesel generator or atmospheric dump valve). This requires approximately 303,000 gallons of EFW and complies with BTP RSB 5-1.

→(DRN 04-1243, Ch. 38)

The CSP contained water volume limit (92% indicated in MODES 1, 2, and 3) includes an allowance for water not usable because of vortexing and instrumentation uncertainties. This provides an assurance that a minimum of 170,000 gallons is available for the EFW system and that 3,500 gallons is available for the CCW makeup system. The CSP contained water volume limit (11% indicated in MODE 4) also includes an allowance for water not usable because of vortexing and instrumentation uncertainties. This provides an assurance that minimum of 3,500 gallons is available in the CSP for the CCW makeup system.

The maximum limit on CSP temperature ensures that the assumptions used in design basis accidents with EFW flow remain valid. The minimum limit on CSP temperature ensures that the assumptions used in the MSLB return to power event remain valid.

←(DRN 04-1243, Ch. 38)