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U S Nuclear Regulatory Commission
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Prairie Island Nuclear Generating Plant Unit 1
Docket 50-282
License No. DPR-42

Core Operating Limits Report (COLR) for Prairie Island Nuclear Generating Plant (PINGP) Unit 1, Cycle 27, Revision 0

Pursuant to the requirements of Technical Specification 5.6.5.d, the COLR for the PINGP Unit 1, Cycle 27, Revision 0, is attached. The limits specified in the attached COLR have been established using Nuclear Regulatory Commission (NRC) approved methodologies.

The COLR has been updated for the Unit 1 Cycle 27 core reload. The following changes were made:

- Revised item 1 and items 3 through 11 (various technical specification sections affected by the COLR) to indicate the information will be supplied in a COLR revision prior to entering Modes 1 and 2.
- Revised the References section to add references 30 and 31 and updated reference 32 to include the new reference to the 50.59 evaluation for Revision 0, Unit 1 Cycle 27 Core Reload Modification.
- Revised Table 1, Minimum Required Shutdown Margin, to remove the requirements for Modes 1 and 2 as the information will be supplied in a COLR revision prior to entering Modes 1 and 2.
- Revised Tables 2 through 6 to indicate the information will be supplied in a COLR revision prior to entering Mode 1.
- Revised Figures 1 through 4 to indicate the information will be supplied in a COLR revision prior to entering Modes 1 and 2, and revised Figures 5 and 6 to indicate the information will be supplied in a COLR revision prior to entering Mode 1.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Mark A. Schimmel
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC
       Project Manager, Prairie Island, USNRC
       Resident Inspector, Prairie Island, USNRC
       State of Minnesota

ENCLOSURE

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
CORE OPERATING LIMITS REPORT
UNIT 1 – CYCLE 27
REVISION 0

Record of Revision (6 pages)

PINGP COLR Unit 1 – Cycle 27, Revision 0 (18 pages)

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Core Operating Limits Report

Record of Revision

Unit	Cycle	Revision No.	Approval Date	Remarks
2	13	0	3/22/90	Original Unit 2 Core Operating Limits Report, distributed with Technical Specification Revision 92.
1	14	0	3/22/90	Original Unit 1 Core Operating Limits Report, distributed with Technical Specification Revision 92.
		1	7/27/90	Incorporated expanded V(z) curves.
		2	9/27/90	Clarified rod insertion limit curve applicability.
		3	2/11/91	Incorporated revised F_Q of 2.45 as a result of NRC approval of Westinghouse Topical Report WCAP-10924-P-A, Volume 1, Addendum 4, October 1990.
2	14	0	-	Not used.
		1	9/27/90	Updated to Unit 2 Cycle 14, incorporated expanded V(z) curves and clarified rod insertion limit curve applicability.
		2	2/11/91	Incorporated revised F_Q of 2.45 as a result of NRC approval of Westinghouse Topical Report WCAP-10924-P-A, Volume 1, Addendum 4, October 1990.
1	15	0	6/25/91	Updated to Unit 1 Cycle 15.
2	15	0	3/9/92	Updated to Unit 2 Cycle 15 and clarified labeling of Figure 4. Clarified the actions to be taken if the nuclear enthalpy rise hot channel factor exceeds the Technical Specification limit.
1	16	0	12/28/92	Updated to Unit 1 Cycle 16, removed V(z) curves and replaced them with list of bounding V(z) values for three ranges of exposures.
2	16	0	12/8/93	Updated to Unit 2 Cycle 16. Removed the multiple V(z) curves and replaced them with a single figure with bounding V(z) curves for four ranges of exposures. Incorporated additional discussion related to V(z) and K(z).

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Core Operating Limits Report

Record of Revision

Unit	Cycle	Revision No.	Approval Date	Remarks
2	16	1	11/3/94	The table containing the bounding V(z) values and Figure 2 updated to incorporate revised bounding V(z) values for the exposure range of 14-21.5 GWD/MTU. Figures 3 through 6 re-formatted.
1	17	0	6/17/94	Updated to Unit 1 Cycle 17. Removed the list of bounding V(z) values and replaced it with multiple V(z) curves. Incorporated additional discussion related to V(z) and K(z).
2	17	0	6/2/95	Updated to Unit 2 Cycle 17. Incorporated Table 1 and expanded Figure 2 with updated bounding V(z) values.
1	18	0	2/7/96	Updated to Unit 1 Cycle 18. Incorporated revised $F_{\Delta H}$ limit of 1.77. Incorporated Table 1 and updated Figure 2 with revised bounding V(z) values.
2	18	0	2/27/97	Updated to Unit 2 Cycle 18. Revised $F_{\Delta H}$ limit to 1.77. Updated Table 1 and Figures 2a through 2e with revised bounding V(z) values. Incorporated new Figures 2f and 2g with additional bounding V(z) values.
1	19	0	9/25/97	Updated to Unit 1 Cycle 19. Updated Table 1 and Figures 2a through 2f with revised bounding V(z) values.
2	19	0	12/17/98	Updated to Unit 2 Cycle 19. Updated Table 1 and Figures 2a through 2d with revised bounding V(z) values. Deleted Figures 2e, 2f and 2g.
1	20	0	5/13/99	Updated to Unit 1 Cycle 20. Updated Table 1 and Figures 2a through 2f with revised bounding V(z) values.
		1	8/4/00	Technical Specification Amendment 151: Relocate shutdown margin (SDM) requirements from Tech Specs and incorporate additional SDM requirements for Modes 3-6 from revised analysis of Uncontrolled Dilution event.

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Core Operating Limits Report

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Unit	Cycle	Revision No.	Approval Date	Remarks
2	20	0	5/31/00	Updated to Unit 2 Cycle 20. Updated Table 1 and Figures 2a through 2d with revised bounding V(z) values. Added new Table 2 and Figures 2e, 2f and 2g with additional bounding V(z) values. Added references to Tables 1 and 2 and to Figures 2e, 2f and 2g to discussion of heat flux hot channel factor limits. Added discussion clarifying applicability of axial flux difference limits when using Tables 1 and 2 and Figures 2a through 2g. Added discussion of two tier V(z) curve presented in Table 2 and Figure 2g.
		1	8/4/00	Technical Specification Amendment 142: Relocate shutdown margin (SDM) requirements from Tech Specs and incorporate additional SDM requirements for Modes 3-6 from revised analysis of Uncontrolled Dilution event.
1	20	2	9/1/00	Revised to change axial flux difference target band.
1	21	0	1/31/01	Updated to support refueling activities associated with Unit 1 Cycle 21. Revision 0 of the Unit 1 Cycle 21 COLR had to be issued prior to confirming the applicability of the LOCA analysis. Therefore, Revision 0 of the Unit 1 Cycle 21 COLR does not contain all of the operating limits necessary to support operation of Unit 1 Cycle 21.
1	21	1	2/19/01	Updated to Unit 1 Cycle 21. Updated Tables 1 and 2 and Figures 2a through 2f with revised bounding V(z) values.
1	21	2	10/02/02	Revised to support License Amendment 158 changes, including revision of all references to TS, revision of F_Q symbols, addition of Table 4, ITC limits, DNB limits and refueling boron concentrations.
2	21	0	2/06/02	Updated to Unit 2 Cycle 21.

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Core Operating Limits Report

Record of Revision

Unit	Cycle	Revision No.	Approval Date	Remarks
2	21	1	10/02/02	Revised to support License Amendment 149 changes, including revision of all references to TS, revision of F_Q symbols, addition of Table 4, ITC limits, DNB limits and refueling boron concentrations. Also revised to include an additional V(z) curve to give greater F_Q margin between 13.0 and 16.0 GWd/MTU.
1	22	0	11/25/02	Updated to Unit 1 Cycle 22. Updated Tables 1 and 2 and Figures 2a through 2f with revised bounding V(z) values. Incorporated new Figure 2g with additional bounding V(z) values. Updated Table 3 with revised minimum shutdown margin limits. Deleted and revised text to eliminate duplication with the Technical Specifications and the Bases.
2	22	0	9/19/03	Updated to Unit 2 Cycle 22. Updated Tables 1 and 2. A reduced number of exposure ranges were calculated in Table 1, therefore new Figures 2a through 2e with revised bounding V(z) values replaced Figures 2a through 2f. New Figure 2f replaced Figure 2g for the 2 tier band bounding V(z) values. Updated Table 3 with revised minimum shutdown margin limits. Deleted and revised text to eliminate duplication with the Technical Specifications and the Bases.
1	22	1	7/6/04	Revision to incorporate Westinghouse Safety Analysis Transition per LA 162/153. Revision 1 contains transitional values for the OP/OT ΔT Trip setpoints that will be used while the physical changes are implemented.
2	22	1	7/6/04	Revision to incorporate Westinghouse Safety Analysis transition per LA 162/153. Revision 1 contains transitional values for the OP/OT ΔT Trip setpoints that will be used while the physical changes are implemented.
2	22	2	7/12/04	Revised Fq limit from 2.4 to 2.5. Removed OP and OT delta-T setpoints based on NMC methodology and replaced with Westinghouse developed setpoints.

Core Operating Limits Report

Record of Revision

Unit	Cycle	Revision No.	Approval Date	Remarks
1	22	2	7/16/04	Revised Fq limit form 2.4 to 2.5. Removed OP and OT delta-T setpoints based on NMC methodology and replaced with Westinghouse developed setpoints.
1	23	0	10/20/04	Updated to Unit 1 Cycle 23.
2	23	0	-	Not used due to core redesign.
2	23	1	5/19/05	Updated to Unit 2 Cycle 23 and to support redesign of Unit 2 Cycle 23 core.
1	23	1	7/11/05	Revised ITC upper limit from < 0 pcm/°F for power levels > 70% RTP to less than a line that slopes linearly from 0 pcm/°F at 70% RTP to -2.9 pcm/°F at 100% RTP. Revised the title of Figure 3 to reference T.S. 3.1.4 Condition B and revised the title of Figure 4 to reference T.S. 3.1.4 Condition A. Added references 24 and 25 to include the 50.59 screenings written to issue revision 1.
1	24	0	5/10/06	Updated to Unit 1 Cycle 24.
1	24	1	8/7/06	Updated Table 3 to reflect the correct $F_q^w(z)$ penalty factors.
2	24	0	11/26/06	Updated to Unit 2 Cycle 24 Modes 5 and 6.
2	24	1	12/6/06	Updated to Unit 2 Cycle 24 for Modes 1-6.
2	24	2	9/4/07	Revised to support LA-179/169. Revised reference 24 to include the revision number (revision 0) and the correct date of the report (January 2005). Revised references 6a, 6b, 6c, and 8 to say 'Deleted.' These references referred to the old LBLOCA methodology and model.
1	24	2	2/11/08	Updated Table 1 to reflect correct Shutdown Margin Requirements and added Figures 6A through 6H.

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Core Operating Limits Report

Record of Revision

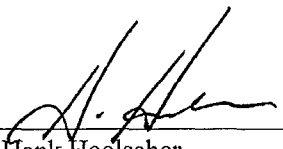| Unit	Cycle	Revision No.	Approval Date	Remarks
2	24	3	2/11/08	Updated Table 1 to reflect correct Shutdown Margin Requirements and added Figures 6A through 6H.
1	25	0	2/24/08	Updated to Unit 1 Cycle 25
1	25	1	5/28/08	Updated Table 2 to reflect the correct W(z) at a burnup of 150 MWd/MTU and a core height of 6.20 feet
2	25	0	9/26/08	Updated for Unit 2 Cycle 25
1	26	0	9/24/09	Updated for Unit 1 Cycle 26
2	26	0	5/3/10	Updated for Unit 2 Cycle 26
2	26	1	5/17/10	Updated to include part power W(z) factors
1	26	1	9/2/10	Updated for second set of W(z) factors
2	26	2	9/30/10	Updated for Measurement Uncertainty Recapture power uprate to 1677 MWth and for a second set of W(z) factors
1	26	2	9/30/10	Updated for Measurement Uncertainty Recapture power uprate to 1677 MWth
1	26	3	12/17/10	Updated SDM in Table 1 for Mode 2 to say 1.9.
1	27	0	5/5/11	Updated for Unit 1 Cycle 27

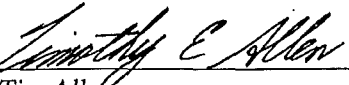# PRAIRIE ISLAND NUCLEAR GENERATING PLANT

CORE OPERATING LIMITS REPORT

UNIT 1 - CYCLE 27

REVISION 0

Reviewed By: _Lynn R Johnson_   Date: _5-4-11_
Lynn Johnson
Supervisor, NSSS

Reviewed By: _Hank Hoelscher_   Date: _5 4 11_
Hank Hoelscher
Supervisor, PWR Analyses

Approved By: _Timothy E Allen_   Date: _5/5/11_
Tim Allen
Director, Site Engineering-Interim

Note: This report is not part of the Technical Specifications

This report is referenced in the Technical Specifications

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
CORE OPERATING LIMITS REPORT
UNIT 1 - CYCLE 27
REVISION 0

This report provides the values of the limits for Unit 1 Cycle 27 as required by Technical Specification 5.6.5. These values have been established using NRC approved methodology and are established such that all applicable limits of the plant safety analysis are met. The Technical Specifications affected by this report are listed below:

1.	2.1.1	Reactor Core SLs
2.	3.1.1	Shutdown Margin (SDM)
3.	3.1.3	Isothermal Temperature Coefficient (ITC)
4.	3.1.5	Shutdown Bank Insertion Limits
5.	3.1.6	Control Bank Insertion Limits
6.	3.1.8	Physics Tests Exceptions - MODE 2
7.	3.2.1	Heat Flux Hot Channel Factor ($F_Q(z)$)
8.	3.2.2	Nuclear Enthalpy Rise Hot Channel Factor $\left(F_{\Delta H}^N\right)$
9.	3.2.3	Axial Flux Difference (AFD)
10.	3.3.1	Reactor Trip System (RTS) Instrumentation Overtemperature ΔT and Overpower ΔT Parameter Values for Technical Specification Table 3.3.1-1 (Note 1 and Note 2)
11.	3.4.1	RCS Pressure, Temperature, and Flow - Departure from Nucleate Boiling (DNB) Limits
12.	3.9.1	Boron Concentration

1.   <u>2.1.1 Reactor Core Safety Limits</u>

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Reference Technical Specification 2.1.1.

2.   <u>3.1.1 Shutdown Margin Requirements</u>

Minimum Shutdown Margin requirements are shown in Table 1.

Reference Technical Specification 3.1.1.

3.   3.1.3 Isothermal Temperature Coefficient (ITC)

ITC Upper limit:
    To be supplied in a COLR revision prior to entering Modes 1 and 2.

ITC Lower limit:
    a. -43.15 pcm/°F

Reference Technical Specification 3.1.3.

4.   3.1.5 Shutdown Bank Insertion Limits

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Reference Technical Specification 3.1.5.

5.   3.1.6 Control Bank Insertion Limits

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Reference Technical Specification 3.1.6.

6.   3.1.8 Physics Tests Exceptions - MODE 2

To be supplied in a COLR revision prior to entering Mode 2.

Reference Technical Specification 3.1.8.

7.   3.2.1 Heat Flux Hot Channel Factor ($F_Q(Z)$)

To be supplied in a COLR revision prior to entering Mode 1.

Reference Technical Specification 3.2.1.

8.   3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$)

To be supplied in a COLR revision prior to entering Mode 1.

Reference Technical Specification 3.2.2.

9. <u>3.2.3 Axial Flux Difference (AFD)</u>

To be supplied in a COLR revision prior to entering Mode 1 with THERMAL POWER $\geq 50\%$ RTP.

Reference Technical Specification 3.2.3.

10. <u>3.3.1 Reactor Trip System (RTS) Instrumentation</u>

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Reference Technical Specification 3.3.1.

11. <u>3.4.1 RCS Pressure, Temperature, and Flow - Departure from Nucleate Boiling (DNB) Limits</u>

To be supplied in a COLR revision prior to entering Mode 1.

Reference Technical Specification 3.4.1.

12. <u>3.9.1 Refueling Boron Concentration.</u>

The boron concentration of the reactor coolant system and the refueling cavity shall be sufficient to ensure that the more restrictive of the following conditions is met:

a) $K_{eff} \leq 0.95$
b) 2000 ppm
c) The Shutdown Margin specified in Table 1

Reference Technical Specification 3.9.1.

REFERENCES
(NRC Approved Methodologies for COLR Parameters)

1. NSPNAD-8101-A, "Qualification of Reactor Physics Methods for Application to Prairie Island," Revision 2, October 2000.

2. NSPNAD-8102-PA, "Prairie Island Nuclear Power Plant Reload Safety Evaluation Methods for Application to PI Units," Revision 7, July 1999.

3. NSPNAD-97002-PA, "Northern States Power Company's "Steam Line Break Methodology," Revision 1, October 2000.

4. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology," July, 1985.

5.a WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model using the NOTRUMP Code," August, 1985.

5.b WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model using the NOTRUMP Code," Addendum 2 Revision 1, July 1997.

6. Not used.

7. WCAP-10924-P-A, Volume 1, Revision 1, and Volume 2, Revision 2, "Westinghouse Large Break LOCA Best Estimate Methodology," September 2005.

8. XN-NF-77-57-(A), XN-NF-77-57, Supplement 1 (A), "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors Phase II," May 1981.

9. WCAP-13677-P-A, "10 CFR 50.46 Evaluation Model Report: W-COBRA/TRAC 2-Loop Upper Plenum Injection Model Update to Support ZIRLO® Cladding Options," February 1994.

10. NSPNAD-93003-A, "Prairie Island Units 1 and 2 Transient Power Distribution Methodology," Revision 0, April 1993.

11. NAD-PI-003, "Prairie Island Nuclear Power Plant Required Shutdown Margin During Physics Tests," Revision 0, January 2001.

12. NAD-PI-004, "Prairie Island Nuclear Power Plant $F^W_Q(Z)$ Penalty With Increasing $[F^C_Q(Z) / K(Z)$ Trend," Revision 0, January 2001.

13. WCAP-10216-P-A, Revision 1A, "Relaxation of Constant Axial Offset Control/ FQ Surveillance Technical Specification," February 1994.

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14. WCAP-8745-P-A, "Design Bases for the Thermal Overpower ΔT and Thermal Overtemperature ΔT Trip Functions," September 1986.

15. WCAP-11397-P-A, "Revised Thermal Design Procedure," April 1989.

16. WCAP-14483-A, "Generic Methodology for Expanded Core Operating Limits Report," January 1999.

17. WCAP-7588 Rev. 1-A, "An Evaluation of the Rod Ejection Accident in Westinghouse Pressurized Water Reactors Using Spatial Kinetics Methods," January 1975.

18. WCAP-7908-A, "FACTRAN – A FORTRAN IV Code for Thermal Transients in a UO_2 Fuel Rod," December 1989.

19. WCAP-7907-P-A, "LOFTRAN Code Description," April 1984.

20. WCAP-7979-P-A, "TWINKLE – A Multidimensional Neutron Kinetics Computer Code," January 1975.

21. WCAP-10965-P-A, "ANC: A Westinghouse Advanced Nodal Computer Code," September 1986.

22. WCAP-11394-P-A, "Methodology for the Analysis of the Dropped Rod Event," January 1990.

23. WCAP-11596-P-A, "Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores," June 1988.

24. WCAP-12910 Rev. 1-A, "Pressurizer Safety Valve Set Pressure Shift," May 1993.

25. WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis," October 1999.

26. WCAP-14882-P-A, "RETRAN-02 Modeling and Qualification for Westinghouse Pressurized Water Reactor Non-LOCA Safety Analyses," April 1999.

27. WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment Of Uncertainty Method (ASTRUM)," Revision 0, January 2005.

28. Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM $\sqrt{}$™ System," Revision 0, March 1997.

29. Caldon, Inc. Engineering Report-157P, "Supplement to Topical Report ER-80P: Basis for a Power Uprate With the LEFM $\sqrt{}$™ Check or CheckPlus™ System," Revision 5, October 2001.

30. WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," April 1995.

31.   WCAP-12610-P-A and CENPD-404-P-A, Addendum 1-A, **"Optimized ZIRLO™,"** July 2006.

32.   50.59 Evaluation 1086, Revision 0, "Unit 1 Cycle 27 Core Reload Modification."

Table 1

Minimum Required Shutdown Margin, %Δρ

Number of Charging Pumps Running**			
Mode 3	**Tave ≥ 520 °F (Most Reactive Rod Out)**		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 – 20000 MWd/MTU	2.0	2.0	2.0

Mode 3	**350 °F ≤ Tave < 520°F (Most Reactive Rod Out)**		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 MWd/MTU	2.0	2.0	2.5
12000 MWd/MTU	2.0	2.0	2.0
20000 MWd/MTU	2.0	2.0	2.0

Mode 4	**200 °F < Tave < 350°F (Most Reactive Rod Out)**		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 MWd/MTU	2.0	4.0	6.5
12000 MWd/MTU	2.0	3.0	4.5
20000 MWd/MTU	2.0	2.0	2.5

Operational Mode Definitions, as per TS Table 1.1-1.

**   Charging pump(s) in service only pertains to steady state operations. It does not include transitory operations. For example, operations such as starting a second charging pump in order to secure the operating pump would fall under the one pump in service column.

Table 1, Continued

Minimum Required Shutdown Margin, %Δρ

Number of Charging Pumps Running**			
Mode 5	68°F ≤ Tave ≤ 200°F (Most Reactive Rod Out)		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 MWd/MTU***	2.5	4.5	7.5
12000 MWd/MTU	2.0	3.0	5.0
20000 MWd/MTU	2.0	2.0	3.0

Mode 6	68°F ≤ Tave < 200°F (ARI)		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 MWd/MTU***	5.129	5.129	7.0
12000 MWd/MTU	5.129	5.129	5.129
20000 MWd/MTU	5.129	5.129	5.129

Mode 6	68°F ≤ Tave < 200°F (ARO)		
	0-1 Pump	**2 Pumps**	**3 Pumps**
0 MWd/MTU***	5.129	5.5	9.0
12000 MWd/MTU	5.129	5.129	7.0
20000 MWd/MTU	5.129	5.129	5.129

Operational Mode Definitions, as per TS Table 1.1-1.

**   Charging pump(s) in service only pertains to steady state operations. It does not include transitory operations. For example, operations such as starting a second charging pump in order to secure the operating pump would fall under the one pump in service column.

***   These values are also applicable for the Unit 1 Cycle 26 end of cycle.

Table 2

To be supplied in a COLR revision prior to entering Mode 1.

Table 3

To be supplied in a COLR revision prior to entering Mode 1.

Table 4

To be supplied in a COLR revision prior to entering Mode 1.

Table 5

To be supplied in a COLR revision prior to entering Mode 1.

Table 6

To be supplied in a COLR revision prior to entering Mode 1.

Figure 1

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Figure 2

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Figure 3

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Figure 4

To be supplied in a COLR revision prior to entering Modes 1 and 2.

Figure 5

To be supplied in a COLR revision prior to entering Mode 1.

Figure 6

To be supplied in a COLR revision prior to entering Mode 1.