

**Joint Pre-Submittal Meeting
for
License Amendment Requests:
Improved Relaxed Axial Offset Control (RAOC)
F_Q Surveillance Technical Specifications**



TVA
Watts Bar



Xcel Energy
Prairie Island



December 12, 2019

Agenda

- Opening Remarks
- Background - WCAP-17661-P-A
- Common Approach
- Licensee Specific Items
 - TVA
 - Xcel Energy
- Closing Remarks

Opening Remarks

- The purpose of this meeting is to discuss proposed license amendments for several units
- The participating licensees will request similar non-voluntary license amendment requests (LARs) to adopt WCAP-17661-P-A
- The LARs will resolve non-conservative Technical Specifications (TS) with respect to Relaxed Axial Offset Control (RAOC) plants and the current F_Q Surveillance formulation.

Background – WCAP-17661-P-A

- Feb 1994 – WCAP-10216-P-A, Rev 1A, *Relaxation of Constant Axial Offset Control (and) FQ Surveillance Technical Specification*, issued
- Feb 2009 – Westinghouse identified a non-conservatism associated with TS 3.2.1, Hot Flux Channel Factor ($F_Q(Z)$), Required Action B
- Sep 2009 – Westinghouse issued NSAL 09-05, Revision 1, *Relaxed Axial Offset Control FQ Technical Specification Actions*
 - Stations treated as non-conservative Technical Specification
- Jan 2014 – PWROG submitted TR WCAP-17661-P, Revision 1, *Improved RAOC and CAOC F_Q Surveillance Technical Specifications*, in order to develop a solution to the problem identified in NSAL 09-05

Background – WCAP-17661-P-A

- Feb 2015 – Xcel Energy identified a non-conservatism associated with TS 3.2.1 SR 3.2.1.2
- Feb 2015 – Westinghouse issued NSAL-15-1, *Heat Flux Hot Channel Factor Technical Specification Surveillance*, after determining that one aspect of TS SR 3.2.1.2 may not be sufficient to assure that the peaking factor that is assumed in the licensing basis analysis is maintained under all conditions between the frequency of performance of TS Surveillance Requirement (SR) 3.2.1.2.
 - Stations treated as non-conservative TS
 - NSAL-15-1 guidance is no longer required once the WCAP-17661-P-A based TS are implemented.
- Nov 2018 – NRC issues Safety Evaluation (SE) for WCAP-17661, Revision 1
- Aug 2019 – NRC issues verification letter noting WCAP-17661-P-A is acceptable for referencing in licensing applications (with limitations)

Common Approach

Resolve the non-conservative TS issues identified in NSAL-09-05, Revision 1, and NSAL-15-1 by submitting a non-voluntary LAR to:

- Implement TS 3.2.1 required actions and surveillance formulations as shown in WCAP-17661-P-A, Revision 1
- Apply Approval Limitations in the associated NRC SE.
 - Limitation 1: Use of A_{XY} and A_Q
 - Limitation 2: Power Level Reduction to 50% rated thermal power (RTP)

TVA – Watts Bar Nuclear Plant (WBN)

- Background
 - WBN FQ Surveillance TS based on WCAP-10216-P-A (RAOC)
 - Unit 1: Administrative controls implemented to address TS 3.2.1 non-conservatisms related to:
 - NSAL-09-5 (Required Actions for $F_Q^W(Z)$ failure non-conservative)
 - NSAL-15-1 ($F_Q^W(Z)$ Surveillance Frequency non-conservative)
 - Unit 2: TS 3.2.1 uniquely addresses NSAL-09-5 and NSAL-15-1 issues, but has a License Condition
 - License Condition 2.C.10 requires TVA to verify for each core reload that the actions taken if $F_Q^W(Z)$ is not within limits will assure that the limits on core power peaking $F_Q(Z)$ remain below the initial total peaking factor assumed in the accident analyses.

TVA – WBN (cont'd)

- LAR Approach
 - Implement WCAP-17661-P-A Tech Spec 3.2.1 on both WBN Units 1 and 2 and pursuant to Approval Limitations
- Proposed TS Change
 - TS 3.2.1 Condition A
 - TS 3.2.1 Condition B
 - SR 3.2.1.1 and SR 3.2.1.2
 - TS 5.9.5
 - Proposing to delete Unit 2 License Condition 2.C.10
- Schedule Milestones
 - LAR Submittal target of 3/1/20
 - Approval requested by 3/1/21 (prior to Unit 1 Cycle 18 Safety Analysis verifications)
 - Implementation:
 - Unit 1 Cycle 18 (Startup in Fall 2021)
 - Unit 2 Cycle 5 (Startup in Spring 2022)

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

F_o(Z)
3.2.1

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Heat Flux Hot Channel Factor (F_o(Z))

LO 3.2.1 F_o(Z), as approximated by F_o^C(Z) and F_o^W(Z), shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Action A.4 shall be completed whenever this Condition is entered prior to increasing THERMAL POWER above the limit of Required Action A.1. SR 3.2.1.2 is not required to be performed if this Condition is entered prior to THERMAL POWER exceeding 75% RTP after a refueling. -----</p> <p>F_o^C(Z) not within limit.</p>	<p>A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% F_o^C(Z) exceeds limit.</p> <p><u>AND</u></p> <p>A.2 Reduce Power Range Neutron Flux—High trip setpoints ≥ 1% for each 1% F_o^C(Z) exceeds limit that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.</p> <p><u>AND</u></p> <p>A.3 Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% F_o^C(Z) exceeds limit that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.</p> <p><u>AND</u></p>	<p>15 minutes after each F_o^C(Z) determination</p> <p>72 hours after each F_o^C(Z) determination</p>

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

Fo(Z)
3.2.1

(continued)

ACTIONS (continued)		
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.4 Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
B. Fo ^W (Z) not within limits.	<p>B.1 Reduce AFD limits \geq 1% for each 1% Fo^W(Z) exceeds limit.</p> <p>B.1.1 Implement a RAOC operating space specified in the COLR that restores Fo^W (Z) to within limits.</p> <p><u>AND</u></p> <p>B.1.2 Perform SR 3.2.1.1 and SR 3.2.1.2 if control rod motion is required to comply with the new operating space.</p> <p><u>OR</u></p> <p>B.2.1 -----NOTE----- Required Action B.2.4 shall be completed whenever Required Action B.2.1 is performed prior to increasing THERMAL POWER above the limit of Required Action B.2.1. -----</p> <p>Limit THERMAL POWER to less than RATED THERMAL POWER and reduce AFD limits as specified in the COLR.</p> <p><u>AND</u></p> <p>B.2.2 Reduce Power Range Neutron Flux - High trip setpoints \geq 1% for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1.</p> <p><u>AND</u></p>	<p>2 hours</p> <p>4 hours</p> <p>72 hours</p> <p>4 hours</p> <p>72 hours</p>

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

Fa(Z)
3.2.1

CONDITION	REQUIRED ACTION	COMPLETION TIME

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.2.3 Reduce Overpower ΔT trip setpoints $\geq 1\%$ for each 1% that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1.</p> <p><u>AND</u></p> <p>B.2.4 Perform SR 3.2.1.1 and SR 3.2.1.2.</p>	<p>72 hours</p> <p>Prior to increasing THERMAL POWER above the limit of Required Action B.2.1</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 2.	6 hours

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

F₀(Z)
3.2.1

SURVEILLANCE REQUIREMENTS

NOTE

During power escalation at the beginning of each cycle, THERMAL POWER may be increased until an equilibrium power level has been achieved, at which a power distribution map is obtained.

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify F ₀ ^c (Z) is within limit.	Once after initial fuel loading and each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 24 42 hours after achieving equilibrium conditions after exceeding, by \geq 10% RTP, the THERMAL POWER at which F ₀ ^c (Z) was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program

(continued)

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

Fo(Z)
3.2.1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.2</p> <p style="text-align: center;">NOTE</p> <p>If $F_o^W(Z)$ is within limits and measurements indicate</p> <p>Maximum over z $\left[\frac{F_o^C(Z)}{K(Z)} \right]$</p> <p>has increased since the previous evaluation of $F_o^C(Z)$:</p> <p>a. Increase $F_o^W(Z)$ by the appropriate factor specified in the COLR and reverify $F_o^W(Z)$ is within limits, or</p> <p>b. Repeat SR 3.2.1.2 once per 7 EFPD using either the movable incore detectors or the PDMS until two successive power distribution measurements indicate</p> <p>Maximum over z $\left[\frac{F_o^C(Z)}{K(Z)} \right]$</p> <p>has not increased.</p> <hr/> <p>Verify $F_o^W(Z)$ is within limit.</p>	<p>Once after initial fuel loading and each refueling prior to within 24 hours after THERMAL POWER exceeding exceeds 75% RTP</p> <p>AND</p> <p>(continued)</p>

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

F_o(Z)
3.2.1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.1.2 (continued)	<p>Once within 42 24 hours after achieving equilibrium conditions after exceeding, by $\geq 10\%$ RTP, the THERMAL POWER at which F_o^W(Z) was last verified</p> <p><u>AND</u></p> <p>In accordance with the Surveillance Frequency Control Program</p>

Proposed TVA
WBN Unit 1 TS
Markups
(similar
changes also
being made for
WBN Unit 2)

5.9 Reporting Requirements

- 5.9.5 CORE OPERATING LIMITS REPORT (COLR) (continued)
3. WCAP-10216-P-A, Revision 1A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL F(Q) SURVEILLANCE TECHNICAL SPECIFICATION," February 1994 (W Proprietary). (Methodology for Specifications ~~3.2.1 - Heat Flux Hot Channel Factor (W/Z) Surveillance Requirements For F(Q) Methodology~~ and 3.2.3 - Axial Flux Difference (Relaxed Axial Offset Control).)
 4. WCAP-12610-P-A, "VANTAGE + FUEL ASSEMBLY REFERENCE CORE REPORT," April 1995. (W Proprietary). (Methodology for Specification 3.2.1 - Heat Flux Hot Channel Factor).
 5. WCAP-15088-P, Rev. 1, "Safety Evaluation Supporting A More Negative EOL Moderator Temperature Coefficient Technical Specification for the Watts Bar Nuclear Plant," July 1999. (W Proprietary), as approved by the NRC staff's Safety Evaluation accompanying the issuance of Amendment No. 20 (Methodology for Specification 3.1.4 - Moderator Temperature Coefficient.).
 6. Caldon, Inc. Engineering Report-80P, "Improving Thermal Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFMTM System," Revision 0, March 1997; and Caldon, Inc. Engineering Report-160P, "Supplement to Topical Report ER-80P: Basis for a Power Uprate With the LEFMTM," Revision 0, May 2000; as approved by the NRC staff's Safety Evaluation accompanying the issuance of Amendment No. 31.
 7. WCAP-11397-P-A, "Revised Thermal Design Procedure," April 1989. (Methodology for Specification 3.2.2 - Nuclear Enthalpy Rise Hot Channel Factor).
 8. WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicting Critical Heat Flux in 17 x 17 Rod Bundles with Modified LPD Mixing Vane Grids," April 1999. (Methodology for Specification 3.2.2 - Nuclear Enthalpy Rise Hot Channel Factor).
 9. WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis," October 1999. (Methodology for Specification 3.2.2 - Nuclear Enthalpy Rise Hot Channel Factor).
 10. WCAP-12610-P-A and CENPD-404-P-A, Addendum 1-A, "Optimized ZIRLOTM."
 11. ~~WCAP-17661-P-A, Revision 1, "Improved RAOC and CAOC F_o Surveillance Technical Specifications," February 2019 (Methodology for Specification 3.2.1 - Heat Flux Hot Channel Factor (T(Z) Surveillance Requirements for F_o Methodology).)~~

(continued)

Watts Bar-Unit 1

5.0-30

Amendment 7, 11, 20, 31, 46,
127, XXX

Proposed TVA WBN Unit 2 OL Markups

- 4 -

TVA may make changes to the approved fire protection program without prior approval of the Commission, only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

- (9) By May 31, 2018, TVA shall report that a listing organization acceptable to the NRC (as the Authority Having Jurisdiction) has determined that the fire detection monitoring panel in the main control room either meets the appropriate designated standards or has been tested and found suitable for the specified purpose.
 - (10) ~~TVA will verify for each core reload that the actions taken if $F_{0,AV}(Z)$ is not within limits will assure that the limits on core power peaking $F_{0}(Z)$ remain below the initial total peaking factor assumed in the accident analyses.~~ Deleted
 - (11) TVA will implement the compensatory measures described in Section 3.4, "Additional Compensatory Measures," of TVA Letter CNL-18-012, dated January 17, 2018, during the timeframe the temperature indicator for RCS hot leg 3 is not required to be operable for the remainder of Cycle 2. If the RCS hot leg 3 temperature indicator is returned to operable status prior to the end of Cycle 2, then these compensatory measures are no longer required.
- D. The licensee shall have and maintain financial protection of such types and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- E. This license is effective as of the date of issuance and shall expire at midnight on October 21, 2055.

FOR THE NUCLEAR REGULATORY COMMISSION

William M. Dean, Director
Office of Nuclear Reactor Regulation

- Appendices:
1. Appendix A –
Technical Specifications
 2. Appendix B –
Environmental Protection Plan

Date of Issuance: October 22, 2015

Xcel Energy – Prairie Island

- Background
 - NSAL-09-05 entered into Corrective Action Program (CAP) Aug 2009
 - NSAL-15-1 entered into CAP
 - Corrective actions remain open pending approval of the amendment
- LAR Approach
 - As noted above, Xcel Energy will request adoption of WCAP-17661-P-A with limitations specified in the NRC SE dated November 23, 2018

Xcel Energy – Prairie Island

- Proposed TS Changes
 - TS 3.2.1 Condition A
 - TS 3.2.1 Condition B
 - SR 3.2.1.1 and SR 3.2.1.2
 - TS 5.6.5
- Schedule Milestones
 - Submit February 2020
 - Approval Requested by March 2021
 - Implement after each unit's next refueling outage following approval (unit specific Tech Specs until both units implement)

Proposed PINGP TS Markups

F_o(Z)
3.2.1

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Heat Flux Hot Channel Factor (F_o(Z))

LCO 3.2.1 F_o(Z), as approximated by F_o^c(Z) and F_o^w(Z), shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Action A.4 shall be completed whenever this Condition is entered. -----</p> <p>F_o^c(Z) not within limit.</p>	<p>A.1 Reduce THERMAL POWER $\geq 1\%$ RTP for each 1% F_o^c(Z) exceeds limit.</p> <p><u>AND</u></p> <p>A.2 Reduce Power Range Neutron Flux -High trip setpoints $\geq 1\%$ for each 1% F_o^c(Z) exceeds limit.</p> <p><u>AND</u></p> <p>A.3 Reduce Overpower ΔT trip setpoints $\geq 1\%$ for each 1% F_o^c(Z) exceeds limit.</p> <p><u>AND</u></p>	<p>15 minutes after each F_o^c(Z) determination</p> <p>72 hours after each F_o^c(Z) determination</p> <p>72 hours after each F_o^c(Z) determination</p>

prior to increasing THERMAL POWER above the limit of Required Action A.1. SR 3.2.1.2 is not required to be performed if this Condition is entered prior to THERMAL POWER exceeding 75% RTP after a refueling.

that THERMAL POWER is limited below RATED THERMAL POWER by Required Action A.1.

Prairie Island
Units 1 and 2

3.2.1-1

Unit 1 – Amendment No. 138
Unit 2 – Amendment No. 149

Proposed PINGP TS Markups

ACTIONS (continued)	CONDITION	ACTION
A. (continued)		<p>A.4 Perform SR 3.2.1.1 and SR 3.2.1.2.</p> <p>Prior to increasing THERMAL POWER above the limit of Required Action A.1</p>
<p>B. NOTE</p> <p>Required Action B.4 shall be completed whenever this Condition is entered.</p> <p>$F_Q^W(Z)$ not within limits.</p>	<p>B.1 Reduce AFD limits $\geq 1\%$ for each 1% $F_Q^W(Z)$ exceeds limit.</p> <p><u>AND</u> .2</p> <p>B.2 Reduce Power Range Neutron Flux-High trip setpoints $\geq 1\%$ for each 1% that the maximum allowable power of the AFD limit is reduced.</p> <p><u>AND</u> .2.3</p> <p>B.3 Reduce Overpower ΔT trip setpoints $\geq 1\%$ for each 1% that the maximum allowable power of the AFD limit is reduced.</p> <p><u>AND</u></p>	<p>4 hours after each $F_Q^W(Z)$ determination</p> <p>72 hours</p> <p>4 hours / 2 hours after each $F_Q^W(Z)$ determination</p> <p>72 hours after each $F_Q^W(Z)$ determination</p>

Implement a RAOC operating space specified in the COLR that restores $F_Q^W(Z)$ to within its limits.

AND

B.1.2 Perform SR 3.2.1.1 and SR 3.2.1.2 if control rod motion is required to comply with the new operating space.

$F_Q^W(Z)$
3.2.1

OR

B.2.1 ~~NOTE~~

Required Action B.2.4 shall be completed whenever Required Action B.2.1 is performed prior to increasing THERMAL POWER above the limit of Required Action B.2.1

Limit THERMAL POWER to less than RATED THERMAL POWER and reduce AFD limits as specified in the COLR.

that THERMAL POWER is limited below RATED THERMAL POWER by Required Action B.2.1.

Proposed PINGP TS Markups

F₀(Z)
3.2.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 ^{.2.4} Perform SR 3.2.1.1 and SR 3.2.1.2.	Prior to increasing THERMAL POWER above the maximum allowable power of the AFD limits ^{limit of Required Action B.2.1}
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 2.	6 hours

Proposed PINGP TS Markups

SURVEILLANCE REQUIREMENTS

-----NOTE-----

~~During power escalation at the beginning of each cycle, THERMAL POWER may be increased until an equilibrium power level has been achieved, at which a power distribution measurement is obtained.~~

SURVEILLANCE	FREQUENCY
SR 3.2.1.1 Verify F ₀ ^c (Z) is within limit.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which F ₀ ^c (Z) was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program

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Prairie Island Units 1 and 2 3.2.1-4 Unit 1 – Amendment No. 226
 Unit 2 – Amendment No. 214

Proposed PINGP TS Markups

F₀(Z)
3.2.1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.2 NOTE</p> <p>If measurements indicate that the</p> <p>maximum over z $\left[\frac{F_0^c(Z)}{K(Z)} \right]$</p> <p>has increased since the previous evaluation of F₀^c(Z):</p> <p>a. Increase F₀^w(Z) by an appropriate factor specified in the COLR and reverify F₀^w(Z) is within limits; or</p> <p>b. Repeat SR 3.2.1.2 once per 7 EFPD until either a. above is met or two successive power distribution measurements indicate that the</p> <p>maximum over z $\left[\frac{F_0^c(Z)}{K(Z)} \right]$</p> <p>has not increased.</p>	<p>Once after each refueling within 24 hours after thermal power exceeds 75% RTP.</p>
<p>--</p> <p>Verify F₀^w(Z) is within limit.</p>	<p>Once within 12 hours after achieving equilibrium conditions after each refueling after THERMAL POWER exceeds 75% RTP</p> <p>AND</p>

Prairie Island
Units 1 and 2

3.2.1-5

Unit 1 – Amendment No. 458 201
Unit 2 – Amendment No. 449 188

Proposed
PINGP TS
Markups

SURVEILLANCE REQUIREMENTS	
SURVEILLANCE	FREQUENCY
SR 3.2.1.2 (continued)	<p>Once within 12-hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which F₀^w(Z) was last verified</p> <p><u>AND</u></p> <p>In accordance with the Surveillance Frequency Control Program</p>

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Proposed PINGP TS Markups

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

8. XN-NF-77-57 (A), XN-NF-77-57, Supplement 1 (A), "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors Phase II";
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_{TM} Cladding Options";
10. NSPNAD-93003-A, "Transient Power Distribution Methodology", (latest approved version);
11. NAD-PI-003, "Prairie Island Nuclear Power Plant Required Shutdown Margin During Physics Tests";
12. NAD-PI-004, "Prairie Island Nuclear Power Plant $F_Q^w(Z)$ Penalty With Increasing $[F_Q^c(Z) / K(Z)]$ Trend";
13. WCAP-10216-P-A, Revision 1A, "Relaxation of Constant Axial Offset Control/ F_Q Surveillance Technical Specification";
14. WCAP-8745-P-A, "Design Bases for the Thermal Overpower ΔT and Thermal Overtemperature ΔT Trip Functions";
15. WCAP-11397-P-A, "Revised Thermal Design Procedure";
16. WCAP-14483-A, "Generic Methodology for Expanded Core Operating Limits Report";
17. WCAP-7588 Rev. 1-A, "An Evaluation of the Rod Ejection Accident in Westinghouse Pressurized Water Reactors Using Spatial Kinetics Methods";

18. WCAP-17661-P-A, "Improved RAOC and CAOC F_Q Surveillance Technical Specifications"

Closing Remarks



TVA
Watts Bar



Xcel Energy
Prairie Island

