PWROG
PWR Owners Group

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Constellation Energy Group
Calvert Cliffs 1 & 2
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Dominion Nuclear Connecticut
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Catawba 1 & 2
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Oconee 1, 2, 3
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Indian Point 2 & 3
Entergy Nuclear South
ANO 1
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Waterford 3
Exelon Generation Company LLC
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Byron 1 & 2
Three Mile Island 1
FirstEnergy Nuclear Operating Co.
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FPL Group
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Turkey Point 3 & 4
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Point Beach 1 & 2
Prairie Island 1 & 2
Omaha Public Power District
Fort Calhoun
Pacific Gas & Electric Co.
Diablo Canyon 1 & 2
Progress Energy
Crystal River 3
H. B. Robinson 2
Shearon Harris
PSEG – Nuclear
Salem 1 & 2
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SONGS 2 & 3
STP Nuclear Operating Co.
South Texas Project 1 & 2
Southern Nuclear Operating Co.
J. M. Farley 1 & 2
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Comanche Peak 1 & 2
Wolf Creek Nuclear Operating Corp.
Wolf Creek

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Kori 1 – 4
Ulchin 3 - 6
Yonggwang 1 - 6
NEK
Krško
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Ringhals AB
Ringhals 2 – 4
Spanish Utilities
Asco 1 & 2
Vandellos 2
Almaraz 1 & 2
Taiwan Power Co.
Maanshan 1 & 2

June 7, 2006

Project Number 694

OG-06-182

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

Subject: Pressurized Water Reactor Owners Group
Request for Meeting Regarding "Single Failure Consideration When Technical Specification Actions Are Entered" (PA-LSC-0136 and PA-LSC-0249)

Reference:

1. NRC Memorandum from G. Shukla (NRC) to S. Dembek (NRC), "Summary of Meeting Held on August 17, 2004, with the Westinghouse Owners Group (WOG) to Discuss a Program to Add an Action to NUREG-1431 for Two Inoperable Reactor Trip System (RTS) or Engineered Safety Features Actuation System (ESFAS) Channels," dated August 27, 2004.

2. WOG-04-592, "Transmittal of White Paper "Single Failure Consideration When Technical Specification Actions Are Entered," (PA-LSC-0136)," November 19, 2004.

3. NRC letter from H. N. Berkow (NRC) to G. Bischoff (Westinghouse), "Response to Westinghouse Owners Group White Paper, "Single Failure Consideration When Technical Specification Actions Are Entered," (TAC No. MC5558)," dated April 13, 2005.

4. NRC letter from T. H. Boyce (NRC) to G. Bischoff (Westinghouse), "Clarification of Single-Failure Considerations In Letter To Westinghouse Owners Group Regarding Technical Specification Actions," dated March 30, 2006.

The Pressurized Water Reactor Owners Group (PWROG), formerly the WOG, met with the NRC staff on August 17, 2004 to discuss adding an Action to NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 3.1, to address the condition of two inoperable Reactor Trip System (RTS) or Engineered Safety Features Actuation System (ESFAS) channels. The PWROG proposed a risk-informed approach consistent with Regulatory Guides 1.174 and 1.177 to justify the Completion Time associated with the Required Action for two inoperable RTS or ESFAS channels. The technical justification for adding the Action for two inoperable RTS or ESFAS channels would be contained in a Topical Report (TR) that would be submitted for NRC review and approval.

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Currently, Technical Specifications 3.3.1, "RTS Instrumentation," and 3.3.2, "ESFAS Instrumentation," in NUREG-1431 do not contain a condition for two inoperable RTS or ESFAS channels; therefore, LCO 3.0.3 must be entered for this condition. The Action is proposed to be added for those RTS and ESFAS Functions that contain four channels, thereby preserving the safety function when two channels are inoperable. The NRC staff stated in the August 17, 2004 meeting that adding this Action to the Technical Specifications would be a violation of the single failure criterion and was unacceptable.

The PWROG requested that the NRC document their position regarding this issue and stated that the PWROG would prepare a White Paper discussing the background and acceptability of adding the proposed Action to NUREG-1431 to address two inoperable RTS or ESFAS channels.

The NRC's position regarding this issue is discussed in Reference 1. Reference 1 stated: "Based on the PWROG presentation, the staff expressed concerns with the proposal as this will be a violation of the single failure criteria required by 10 CFR 50.55(a)h. The staff has previously allowed exception to single failure criteria because of the hardship consideration based on the hardware design configuration. However, this is not the case for the PWROG's proposal and violation of the single failure criteria affects one element of the defense-in-depth approach to reactor safety. Based on this, the staff does not believe that there is enough justification to proceed with the proposed TR and compliance with the required single failure criteria should be addressed if the PWROG intends to submit a TR for staff review."

A White Paper was prepared by the PWROG in response to the NRC's position in Reference 1 discussed above, and was transmitted to the NRC via Reference 2. Reference 2 discussed that 10 CFR 50.55a(h)(2) provided design requirements for "Protection systems," including single failure requirements, and stated that the RTS and ESFAS designs were not being modified by adding an Action to NUREG-1431 for two inoperable RTS and ESFAS channels. Additionally, Reference 2 also discussed that a single failure in one of the two operable channels did not have to be considered and that the safety function was still maintained, when the proposed Technical Specification Action was entered, since the proposed Action would only allow operation to continue for a finite period of time prior to restoring the second inoperable channel to operable status or initiating a unit shutdown if the channel was not restored to operable status. Reference 2 provided excerpts from various documents that supported the position that a single failure did not have to be considered when the Technical Specification Actions are entered.

The NRC responded to the PWROG White Paper in Reference 3, and concluded: "Based on our review of the PWROG White Paper, we believe that the PWROG has not yet provided sufficient basis to support a topical report that proposes a TS Action to permit operation with two inoperable RTS or ESFAS instrument channels rather than enter into a TS-required shutdown."

The NRC issued a clarification via Reference 4 to their previous position regarding the consideration of a single failure when the Technical Specification Actions are entered that was discussed in Reference 3. The clarification in Reference 4 acknowledged that a single failure does not have to be considered when the Technical Specification Actions are entered. However, Reference 4 also stated: "In the letter, the staff referred to the need for operational necessity in the case of the WOG proposal to ensure that there was sufficient industry need to have a plant in

a configuration involving an inoperable channel and troubleshooting with a separate channel. In this configuration, the staff is concerned that the design may not have the ability to reliably perform its safety function for all analyzed events."

A telephone conference between representatives of the PWROG and NRC was held on May 10, 2006 to discuss the submittal of a TR by the PWROG to justify adding an Action for two inoperable RTS and ESFAS channels to NUREG-1431 based on the NRC clarification letter (Reference 4) discussed above. The PWROG requested a meeting with the NRC to discuss whether the proposed TR would be accepted by the NRC for review in light of the need for operational necessity discussed in Reference 4. The NRC reiterated that the need for operational necessity must be demonstrated to support the change. The PWROG stated that some licensees had to request a Notice of Enforcement Discretion (NOED) for two inoperable RWST (ESFAS) channels, and the NOEDs were the basis for the operational necessity. The NRC also questioned the impact of the proposed change on the RTS and ESFAS functions that also provide control functions. The PWROG agreed to provide a letter discussing any new information regarding this subject, the impact of the change on the RTS and ESFAS functions that also provide control functions, and a proposed agenda for the meeting. The following provides the requested information and proposed agenda.

The purpose of adding an Action for two inoperable RTS and ESFAS channels is to preclude entry into LCO 3.0.3, since no Action is currently provided for this condition. If this situation occurs, either a unit shutdown is required per LCO 3.0.3, or an NOED must be requested. As discussed above, this condition has occurred at two Westinghouse NSSS units, and NOEDs were granted on January 30, 2003 for one unit, and August 20, 2003 and July 24, 1998 for the other units. Two inoperable RTS or ESFAS channels are not expected to occur very frequently, however should the situation occur, providing a Required Action and associated Completion Time to restore one channel to operable status at power is preferred to initiating a unit shutdown and incurring the transition risks associated with a shutdown and subsequent ascension to power operation. The change will be demonstrated to be acceptable in accordance with Regulatory Guides 1.174 and 1.177, which require that defense-in-depth and safety margins be maintained. Note that Regulatory Guide 1.177 requires the reason for the change and information that demonstrates that the extent of the change is needed. Additionally, the safety function will still be maintained, since during the limited period of time that two channels can be inoperable, two channels will still be operable to perform a reactor trip or safeguards actuation. It should be noted that the RTS and ESFAS designs are not proposed to be changed as part of this change, therefore the single failure criterion associated with the design is unaffected by the proposed change.

The Control System uses some of the same signals generated from the Protection System, but is separate and independent from the Protection System via isolation amplifiers contained in the individual protection channels. Therefore, the failure of the control circuitry does not adversely affect the protection channel. The Control System sensor is the output of the isolation amplifier; therefore there are no components that are shared between the systems. Additionally, the Control System does not provide any input to the Protection System. The isolation amplifiers isolate the Protection System from any electrical faults which might occur in the Control System. Testing has demonstrated that a short circuit or the application (credible fault voltage from

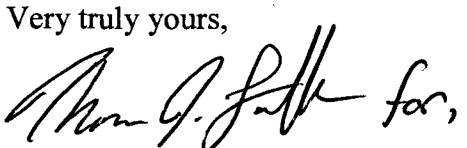
within the cabinets) of 118 V AC or 140 V DC on the isolated output portion of the circuit (non-protection side of the circuit) will not affect the input (protection) side of the circuit. Where a single random failure can cause a control system action that results in the generation of a condition requiring protective action, and can also prevent proper action of a protection system channel designed to protect against this condition, the remaining redundant protection channels are capable of providing the protective action even when degraded by a second random failure. This satisfies the applicable requirements of Section 4.7 of IEEE Standard 279-1971. Therefore, the RTS and ESFAS functions that also provide control functions are not impacted by the proposed change.

The PWROG requests a meeting with the NRC staff to discuss the submittal of a TR by the PWROG to justify adding an Action for two inoperable RTS and ESFAS channels to NUREG-1431 based on the NRC clarification letter (Reference 4). The proposed agenda for the meeting is:

- Need for the Change
- Differentiation of Single Failures in Design versus Technical Specification Actions
- Operational Necessity for Design versus a Technical Specification Shutdown
- Clarification of Control/Protection System Interaction on the Proposed Change
- Defense in Depth, Impact on Safety Margins, and Deterministic Impacts of the Proposed Change
- Open Discussion

If you have any questions regarding this request, please feel free to call me at 630-657-3897, or Mr. Tom Laubham in the PWR Owners Group Program Management Office at 412-374-6788.

Very truly yours,



Frederick P. "Ted" Schiffley, II
Chairman, PWR Owners Group

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cc: PWROG Steering Committee
PWROG Management Committee
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