

September 21, 1988

✓ Virginia Electric and Power Company  
ATTN: Mr. W. R. Cartwright  
Vice President  
Nuclear Operations  
P. O. Box 26666  
Richmond, VA 23261

Gentlemen:

SUBJECT: NRC INSPECTION REPORT NOS. 50-338/87-39 AND 50-339/87-39

Thank you for your responses of February 26, March 15, and August 22, 1988, to our Notices of Violation and Deviation issued on January 27, 1988, concerning activities conducted at your North Anna facility. We have evaluated your responses and found that they meet the requirements of 10 CFR 2.201.

In your response, you admitted the violation but denied a portion of the deviation. After careful consideration of the bases for your denial of one part of the deviation, the current NRC position regarding the documentation requirements for Emergency Operating Procedures, and commitments made in your letter of August 22, 1988, we have decided to withdraw the portion of the deviation in dispute. We will examine the implementation of your actions to correct the violation and deviation during future inspections.

The responses directed by this letter and its enclosure are not subject to the clearance procedure of the Office of Management and Budget as required by the paperwork reduction act of 1980 Pub L. No. 96-511.

We appreciate your cooperation in this matter.

Sincerely,

Original signed by Al Gibson

Albert F. Gibson, Director  
Division of Reactor Safety

Enclosure: Evaluation and Conclusion

cc w/encl:

- ✓ G. Kane, Station Manager
- ✓ N. E. Hardwick, Manager - Nuclear Programs and Licensing

bcc w/encl:

- ✓ NRC Resident Inspector
- DRS Technical Assistant
- Document Control Desk
- State of Virginia

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MSHymlock  
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## ENCLOSURE

### EVALUATIONS AND CONCLUSIONS

On January 27, 1988, a Notice of Violation and a Notice of Deviation were issued for findings identified during an NRC inspection. VEPCO responded to these Notices on February 26, 1988. The licensee admitted the Violation as stated, but denied an item contained within the Notice of Deviation. The NRC's evaluation and conclusion for the area of the Deviation which was denied by VEPCO is as follows:

#### Restatement of Deviation

On July 1, 1983, the licensee submitted a Procedure Generation Package (PGP) for Emergency Operating Procedures (EOPs) to the NRC. In that submittal, the licensee committed to implement the Westinghouse Owners Group (WOG) Emergency Response Guidelines (ERGs), Rev. 1, as approved by the NRC. In addition, the licensee's PGP required that justification of any significant deviation from an ERG step and justification of all EOP setpoints be documented. The licensee used a Step Deviation Document (SDD) for this documentation. The licensee's PGP also required that controls and displays referenced in EOPs be identified to assist the operator in accurate and quick identification.

The licensee's SDD for procedure ES-0.2B, Natural Circulation Cooldown Without Shroud Cooling Fans, Rev. 1, failed to document justification of a significant departure from the ERG. Step 20 of procedure ES-0.2B directed the operators to perform an isothermal depressurization following an 8-hour soak period. This represented a significant departure from the WOG ERGs wherein the operators are directed to continue cooling down, following the soak period, while maintaining 200°F subcooling. The RCS depressurization method used in step 20 of ES-0.2B resulted in significantly less upper head subcooling than in the ERG procedure from which it was derived. This step deviation was not identified or justified in the licensee's SDD.

Also, the licensee's SDD failed to identify the use of different setpoints. The minimum temperature/pressure cooldown curve shown in Attachment 1, Pressure/Temperature Limits for Cooldown, to ES-0.2B was less conservative than the cooldown curve defined by Technical Specifications, Figure 3.4.3. Other setpoints contained in ES-0.2B were different from those used in the ERG (including cooldown rate; subcooling margin; and holdpoint pressure, temperature, and time). These setpoint differences were not mentioned in the licensee's SDD.

Finally, the licensee's EOPs for natural circulation cooldown ES-0.2A, Natural Circulation Cooldown With Shroud Cooling Fans, Rev. 1; ES-0.2B, Natural Circulation Cooldown Without Shroud Cooling Fans, Rev. 1; and ES-0.2, Natural Circulation Cooldown With Steam Void in Vessel (with RVLIS), Rev. 1 failed to identify controls and displays to be used in maintaining cooldown pressure and temperature limits in that Attachment 1, Pressure/Temperature Limits for Cooldown, did not indicate which temperature instruments are to be used.

Summary of Licensee's Response

The licensee denied that there was a deviation for failure to document a significant deviation from the WOG ERG by performing an isothermal depressurization. The basis for this statement was derived from a comparison made between the generic methodology and the process used in the North Anna procedure. The WOG ERG Background document defines operating limits for a generic plant design which are designed to maintain subcooling in the reactor vessel upper head during a plant cooldown on natural circulation.

The response also explained the methodology used to determine the plant specific setpoint values for North Anna. The licensee concluded that:

1. The North Anna natural circulation cooldown procedure (ES-0.2B) conforms to the corresponding generic guideline with no significant deviation in strategy, execution, or intent.
2. The plant specific natural circulation limitations maintain approximately the same subcooling margin in the reactor vessel upper head region as the generic guidelines through all phases of the cooldown. This includes allowance for process instrumentation accuracy as directed by the generic guidelines.

NRC Evaluation of Licensee Response

The NRC discussed the EOP Setpoint Document with the licensee and Volian, the consulting firm that performed the evaluations. The licensee agrees with the section of the deviation that cites the lack of documentation within the SDD for the isothermal depressurization and intends to cross-reference the setpoint document as justification. During subsequent telecons the licensee and the NRC agreed that procedure ES-0.2B does not place the plant in an unanalyzed or unsafe condition.

However, the licensee's response indicated that their policy is to not document deviations that the licensee considers to be consistent with the strategy and intent of the WOG ERGs. The NRC is concerned that this policy is in conflict with commitments made in the PGP submittal which states that justification of any significant deviation from an ERG step and justification of all EOP setpoints be documented.

Regarding the adequacy of the licensee's EOP setpoint document; the inspectors reviewed this document dated 4/15/87, and found it to contain the following basis: "7) After the wait period, the cooldown and depressurization is continued while maintaining at least 200°F subcooling until the RHR system can be placed in operator (sic)." What disturbed the inspectors about this was that it was cited in the EOP setpoint document that was supposed to justify an isothermal depressurization that would be in direct conflict with the above noted basis. This alone cast doubt as to the thoroughness of the effort to analyze what the NRC considers to be a safety significant deviation from the WOG ERG.

The licensee intends to rely upon a revised setpoint document that more clearly relates the step deviation to the WOG ERG. This EOP setpoint document, dated 2/23/88, will be cross referenced in the SDD for this step. The NRC performed a review of this setpoint document and had the following comment:

"The primary concern during a loss of forced flow through the reactor core is upper head voiding, which is of particular interest in a plant design such as North Anna where there is little mixing of the fluid in the upper head during this transient. The most important parameter to be monitored is the subcooling margin in the upper head. The licensee's EOP setpoint documents, both 4/15/87 and 2/23/88, do not list this parameter in their cooldown tables. Instead, it must be calculated by the reviewer for each time increment in the cooldown to verify that adequate upper head subcooling is maintained. It is not a requirement to list this parameter, however, it is expected that since upper head subcooling is of primary concern, it would be the focus of the data tables.

Subsequent communication between the licensee and the NRC resolved all of the perceived technical concerns regarding the EOP setpoint document of 2/23/88.

A final request was made by the NRC of the licensee in the telecon of 7/23/88 to formally submit in a correspondence the licensee's current policy for documenting EOP deviations from the WOG ERG. The licensee made the following commitment in their letter of 8/22/88.

"The North Anna policy is to document and justify any procedure deviations from the WOG ERGs, including the following:

- 1) Any additions or deletions of Notes, Steps, or Cautions
- 2) Any changes to setpoints
- 3) Any step sequence changes
- 4) Any changes due to tactical or design differences.

Cross references between the SDD which documents any step additions, deletions, and change in sequence, and the Setpoint Document which documents the basis for the procedure setpoints will be provided whenever a setpoint specified in the WOG ERGs is changed. This policy does not apply to those setpoints which are normally plant specific and are only documented in the Setpoint Document."

The NRC requested clarification of the final sentence (underlined) and received from the licensee the statement that any of the setpoints that are assigned specific values in the WOG ERG will be subject to the policy. Those setpoints that are footnoted within the WOG ERG to reference setpoint studies or plant specific values will have specific calculations or references contained in setpoint documents that will verify the value, however these will not be cross referenced in the SDD. The NRC cautioned the licensee that a clear audit path between the EOPs and all supporting documentation, while not a regulatory requirement, is a preventative measure that can preclude the difficulties that may arise when plant modifications or other associated

changes affect equipment, setpoints, and/or mitigative actions. Furthermore, Standard Review Plan 13.5.2, Appendix A, Section 3.3.2, Deviations and Additions, subsection 1.e. states an example of a deviation as the following:

"Plant-specific setpoints or action levels that are calculated or determined in the manner other than specified in the generic technical guidelines."

The NRC expects the licensee to follow this guidance as clarification to the above noted underlined sentence contained in the commitment taken from the correspondence from the licensee dated August 22, 1988.

#### NRC Conclusions

The NRC would like to remind the licensee of what has been identified in the past as weak supporting documentation for changes made to the WOG ERG's. Specifically, a NRC audit report of the EOP PGP implementation audit for the North Anna power station, Units no. 1 and no. 2, issued August 1986, had similar findings. Specifically, section 3.1.2.1, Deletion/Revision of ERG steps, states: "Many ERG steps were not included in the North Anna EOPs or were revised to the extent that their content was in question. Sufficient justification for these deletions/revisions was rarely documented."

Based on subsequent evaluations of the licensee's procedures for natural circulation cooldown and their associated documentation, the NRC is withdrawing the contested example of the deviation. The reasoning for this decision is based primarily on the fact that the procedure did not place the plant in an unsafe or unanalyzed condition.