

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

March 21, 1980

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. A. Schwencer, Chief  
Operating Reactors Branch 1  
Division of Operating Reactors  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Serial No. 149/020880  
PO/FHT:cv  
Docket Nos. 50-280  
50-281  
License Nos. DPR-32  
DPR-37

Dear Mr. Denton:

Auxiliary Feedwater Systems  
Additional Information Request  
Surry Power Station Units 1 and 2

We have reviewed your letter of February 8, 1980, Docket Nos. 50-280 and 50-281, requesting information on the Surry Auxiliary Feedwater (AFW) Systems to supplement our earlier response, Serial No. 811/092579, dated November 9, 1979.

Subsequent to our November 9, 1979, letter, we received your letter of December 12, 1979, requesting information on Surry AFW System automatic initiations and flow indications (TMI Lessons Learned Recommendations 2.1.7. a and b). Our letter Serial No. 1167/121279, dated February 1, 1980, provided the information requested in your December 12, 1979, letter.

Several of the items requested in your most recent letter of February 8 were addressed in our February 1 response to your letter of December 12, 1979. In light of this, the following response to your February 8 letter will reference our February 1 letter where appropriate.

NRC Request:

A. Short Term Recommendations

5. Recommendation (GS-7)

Although you have verified that the auxiliary feedwater (AFW) system automatic initiation signals and circuitry are safety grade, we required additional information in order to perform an independent review and verification. You should provide sufficient detailed

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information including electrical diagrams or provide a reference to the sections of the FSAR where the detailed information can be found that will allow an independent verification. We need the detailed information before we can verify that the Surry AFW automatic initiation system meets safety grade requirements.

Response:

Information sufficient to perform an independent review and verification of the AFW system automatic initiation signals and circuitry was provided in our February 1, 1980, letter, Serial No. 1167/121279.

NRC Request:

B. Additional Short Term Recommendation

1. In addition to the redundant level indication you have proposed, a redundant low level alarm should also be included in the design. We request that you commit to the following requirements regarding the indication and alarm.
  - a. The level indications should be redundant all the way from the detectors to the readouts and alarms inside the control room.
  - b. Power supplies for the indication and alarm should also be redundant. Use of non-Class 1E circuitry is acceptable for the short term provided one power train has a back-up battery source.
  - c. In the long term (1/1/81) the entire water level indication and alarm systems should be designed to safety grade requirements including the use of Class 1E circuitry and power supplies since the emergency condensate storage tank is designed to seismic Category I requirements.

Response:

A design change is being prepared and will provide for redundant safety-grade level indication and alarm systems. The new design will be implemented by 1-1-81.

NRC Request:

B. Additional Short Term Recommendation

2. Your response to this recommendation is acceptable. However, the recommendation has since been revised reducing the endurance test from 72 hours to 48 hours. The attached revised Additional Short Term Recommendation No. 2 should be used instead of

the original. It is requested that you follow the provisions of the revised AFW pump endurance test provisions and submit the requested test information.

Response

The AFW pump endurance tests have been completed for Surry 1 (two motor driven pumps, one steam-turbine driven pump) and partially completed for Surry 2 (two motor driven pumps). The Surry 2 steam-turbine driven pump will be tested when steam is available after Unit Startup. Test reports are being prepared and will be forwarded as soon as they are available.

NRC Request:

B. Additional Short Term Recommendation

3. Your response to this recommendation is generally acceptable. However, we need detailed information to demonstrate conformance with NUREG-0578 (2.1.7.b) criteria and clarifications in the October 30, 1979 NRC (H. Denton) letter to all operating plants; namely, single failure, testability, power supply and indication accuracy.

Response

Detailed information demonstrating conformance with NUREG-0578 criteria was included in our February 1, 1980 letter, Serial No. 1167/121279.

NRC Request:

C. Long Term Recommendations

1. Recommendation (GL-3)

Your response to this recommendation is not clear. From the response to GS-5 above it appears that operator action outside the control room is required following a loss of all AC power. It also appears that the turbine driven pump may have to be operated in an on-off mode for AFW control. In the long term we require that, following a complete loss of AC power, no operator action should be necessary outside the control room for at least two hours. You should also verify that on-off control of the turbine can be accomplished from the control room without AC power. It is requested that you commit to meeting these requirements in addition to the instrumentation modifications discussed in your response in the long term.

Response

As stated in our November 9, 1979, response, our present design has at least one AFW system pump and flow path which is automatically initiated upon a loss of all AC power. However, in order to control the amount of flow delivered, the pump must be manually operated in an on-off mode. In order to provide automatic, or in this case, remote on-off operation from the control room, a design modification must be made. Hence, an analysis is in progress to determine the best method for providing this capability. The analysis and subsequent modifications will be completed and/or implemented by 1/1/81.

NRC Request:C. Long Term Recommendation

## 2. Recommendation (GL-5)

See GS-7 for staff position.

Response

See our response to GS-7, Short Term Recommendation A.5.

NRC Request:C. Long Term Recommendation3. Recommendation (Plant Specific)

You have committed to performing the design re-evaluation requested in this recommendation. Your commitment is acceptable. We request that you submit the results of the re-evaluation for our review.

Response

The results of our re-evaluation of the AFW system will be forwarded as soon as they are available.

NRC Request:D. Basis for AFW System Flow Requirements

We request that you provide a commitment date for responding to the information requested in Enclosure 2 of the NRC letter dated September 25, 1979.

Response

We have requested our NSSS Vendor to develop the required basis for AFW system flow requirements and, due to the large number of utilities doing likewise, it appears that the requested information will not be available until June, 1980. We will make every effort to obtain and review this information in time to submit it for your review by July 15, 1980.

If you have further questions or require additional information, please contact this office.

Very truly yours,



C. M. Stallings  
Vice President-Power Supply  
and Production Operations

cc: Mr. James P. O'Reilly