

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 25, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Albert Schwencer, Chief
Operating Reactors Branch No. 1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Serial No. 388A
FRD/MLB: mvc
Docket No. 50-281
License No. DPR-37

Dear Mr. Denton:

SUPPLEMENTARY INFORMATION FOR
AMENDMENT TO OPERATING LICENSE
SURRY POWER STATION UNIT NO. 2
PROPOSED TECHNICAL SPECIFICATIONS CHANGE NO. 78

Attachment 1 provides our responses to the Nuclear Regulatory Commission (NRC) staff questions on our Surry Unit 2 LOCA-ECCS analysis submittal transmitted by the C. M. Stallings (Vepco) to H. R. Denton (NRC) letter, Serial No. 388, dated May 31, 1979. These questions were provided informally by Mr. J. D. Neighbors (reference telecopy from J. D. Neighbors (NRC) to M. L. Bowling (Vepco), dated July 10, 1979). Should information be obtained from the test program discussed in the attachment which could effect the above submittal, you will be notified promptly.

If you have any questions or require additional information, please contact us.

Very truly yours,

C. M. Stallings

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

Attachment

cc: Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
Region II

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Approved
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ATTACHMENT 1

Section 3 of Attachment 1 to the May 31, 1979 letter from Vepco (C. M. Stallings) to the NRC (H. R. Denton) discusses the Low Head Safety Injection system modification to resolve NPSH concerns. That section states that the minimum SI flow based on the modified system was determined and is conservative with respect to that provided in the letter of November 22, 1978 from Vepco (C. M. Stallings) to the NRC (H. R. Denton). With respect to that determination, provide the following:

Question 1 The basis for the minimum expected safety injection flow rate.

Response 1 The minimum expected safety injection flowrate is based on a conservative calculation of flowrate for one LHSI and one HHSI pump without lines spilling to containment.

Question 2 Discussion of testing that has been performed to support this expected minimum flowrate.

Response 2 The following tests will be performed in the near future to support the calculation of the minimum expected flowrate discussed in Question 1 and to demonstrate the performance of the Low Head Safety Injection System.

- a. A series of tests on the venturis will be performed at the Utah State Water Research Laboratory under a wide range of temperature, pressure, and flow conditions (including those conditions forming the basis for the minimum expected flowrate) to verify the performance of the venturis and to demonstrate the validity of the venturi flow characteristics assumed in the minimum flow calculations.
- b. A 100 hour endurance run of one LHSI pump will be performed. The flow path will be from the containment sump, through the LHSI pump and venturis and then through temporary piping back

to the sump. The test will demonstrate the stability and durability of the LHSI pumps and will also provide additional verification of the venturi flow characteristics.

Question 3 Discussion of surveillance procedures which will specify allowable values for acceptable pump operation during periodic testing.

Response 3 Surveillance tests are performed monthly to verify that the Low Head Safety Injection pump performance remains acceptable with respect to the pump head curve which was the basis for the safety injection flowrate calculation.

Question 4 Demonstrate that the minimum expected flowrate is conservative with respect to that used in the current ECCS analysis.

Response 4 The minimum safety injection flowrate assumed in the current LOCA-ECCS analysis is based on a conservative calculation of flowrate from one LHSI and one HHSI pump with one of the three safety injection lines spilling to the containment. Minimum flowrates will be assured by the ongoing and proposed testing and surveillance program discussed in Questions 2 and 3 above.

Question 5 Also, response to Question 11.0 in the above letter of November 22, 1978 should be updated with values of minimum expected flowrate of the LHSI system in gpm versus time throughout the limiting LOCA compared to the values assumed in your current ECCS analysis.

Response 5 An updated Figure 11.0-1 from the Vepco (C. M. Stallings) to NRC (H. R. Denton) letter dated November 22, 1978, Serial No. 069C/013178 which compares LHSI flowrate only is attached. The

figure indicates that the minimum safety injection flowrate assumed in the LOCA-ECCS analysis is conservative with respect to the minimum expected safety injection flowrate.

Updated

Figure 11.0-1

LHSI PUMP FLOW RATE FOR A PSDER WITH MIN ESF

