

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

March 3, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Robert A. Clark, Chief
Operating Reactors Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 110
NO/JHL:acm
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT NOS. 1 AND 2
ENVIRONMENTAL QUALIFICATION OF SAFETY RELATED ELECTRICAL EQUIPMENT

In a telephone conversation with Mr. L. B. Engle on February 24, 1983, Vepco was requested to provide justification of continued operation for equipment in NRC category II.B of the Franklin Research Center's draft Technical Evaluation Report (TER). Attachments 1 and 2 provide justification for continued operation for North Anna Units 1 and 2, respectively.

Very truly yours,

W. L. Stewart
W. L. Stewart

Attachments

cc: Mr. James P. O'Reilly
Regional Administrator
Region II

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ATTACHMENT 1

NORTH ANNA UNIT NO. 1
JUSTIFICATION FOR CONTINUED OPERATION

Category II.B of the Franklin Research Center draft TER identified equipment that is not qualified (Item 83). The following addresses justification for continued operation for this equipment item:

Equipment Item 83 is identified as Containment Sump Narrow Range Level Transmitters, mark numbers:

LT-DA-110A
LT-DA-110B

JUSTIFICATION FOR CONTINUED OPERATION

The wide range level transmitters for the containment sumps have been replaced. These units are environmentally qualified and will be operational prior to the return of Unit 1 to power.

The manufacturer's model number of these Containment Sump Wide Range Level Transmitters are:

Gems Level Transmitter 54853-321-56
Gems Level Transmitter 54854-323-80

These Gems Level Transmitters are qualified as per IEB 79-01B and NUREG-0508. The parameters required in the qualification test plan were temperature, pressure, humidity, radiation, chemical spray and aging. The test plan parameters enveloped the specification requirements. This information can be obtained in Transamerica Pelaval Report No. 45700-1.

On the basis of the above, it is concluded that continued operation of the plant will have no effect on safety.

ATTACHMENT 2

NORTH ANNA UNIT NO. 2
JUSTIFICATION FOR CONTINUED OPERATION

Category II.B of the Franklin Research Center draft TER identified equipment that is not qualified (Item 64). The following addresses justification for continued operation for this equipment item:

Equipment Item 64 is identified as Containment Sump Narrow Range Level Transmitters, mark numbers:

LT-DA-210A
LT-DA-210B

JUSTIFICATION FOR CONTINUED OPERATION

As designed, the installation of the containment sump level transmitters were for a two-fold purpose.

First, the narrow range level transmitters provide the initial diagnostic indication of the onset of an accident. Specifically, the onset of a small break or large break LOCA would use the narrow range indicator along with containment pressure, temperature, humidity, pressurizer level and pressure, and containment radiation monitors for diagnosis of the accident.

As reported in the results of the test (TER) these transmitters would be operable for at least ninety (90) minutes following the introduction of a harsh environment. This would provide ample time for the SRO/STA accident analysis.

In addition, the two wide range level transmitters, although not qualified to the harsh environment, would be expected to provide some redundant indication of an increasing sump level prior to their failure. These wide range transmitters have design redundancy and as such, will provide an additional initial diagnostic indication.

The second or long term consideration stems from the need to monitor the continuation of long term core cooling that is provided by the inventory of water mass accumulated in the containment basement. The initial input of water to this cooling source is from the Refueling Water Storage Tank (RWST) and from the water originally contained in the reactor coolant system.

The wide range level transmitters (up to the equivalent of 600,000 gallons of water) would provide the operators with the indication of the maintenance of adequate cooling water inventory in the containment basement.

In the event of a failure of these transmitters, the proper water inventory in the containment can be ascertained by monitoring the sump levels in the safeguards area and the auxiliary building and by monitoring the installed radiation detection system in these areas. These parameters are direct indications of inventory loss from the containment sump since they represent the only areas that would contain the potential leakage from interconnected systems.

In addition to these indications, the long term operator actions prescribed by the approved emergency procedures include the monitoring and data logging of the performance of the recirculation system pumps. In the event of a loss of this inventory, the pump performance trends would provide an indication of this problem. Various make-up supplies of water to ensure the continuation of long term cooling are available.

As a final consideration to the continued operation of North Anna Unit 2, the upcoming refueling outage is presently scheduled for April 1983. The probability of an event that would require the use of this equipment between now and the upcoming outage is extremely low. The replacement of the wide range level transmitters with qualified transmitters will be performed at this time.

The Unit 2 transmitters will be replaced with the same model transmitters as described in the Unit 1 justification for continued operation and qualified as per NUREG-0588.

In summary, the continued operation of North Anna Unit 2 is justified based on the redundancy in monitored parameters for the short term diagnosis of an accident and the availability of other indications to confirm that sufficient long term cooling water inventory remains in the sump. In addition, the probability of an event in which this equipment would be required to operate until the outage is very low.