

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

W. L. STEWART  
VICE PRESIDENT  
NUCLEAR OPERATIONS

March 7, 1984

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Serial No: C47A  
NO/DWJ.:jab  
Docket Nos. 50-338  
50-339  
License Nos. NPF-4  
NPF-7

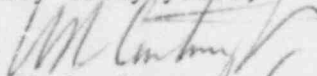
Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY  
NORTH ANNA POWER STATION UNITS NOS. 1 AND 2  
NUREG-0737, ITEM II.F.2

The purpose of this letter is to provide the attached Implementation Letter Report for the North Anna Power Station Reactor Vessel Level Instrumentation System (RVLIS) which was requested by your letter dated January 16, 1984. Also, Vepco requests that the NRC review this information and approve the use of the installed RVLIS based on their previous acceptance of the generic Westinghouse vessel level instrumentation approach and on the status of the RVLIS system and the proposed schedule for implementation as provided by this letter.

We have previously submitted a request for changes to the North Anna Technical Specifications (Serial No. 333 dated June 3, 1983) which would provide for appropriate LCOs for RVLIS. In our June 3, 1983 letter, we stated that the issuance of RVLIS Technical Specification needed to be coordinated with our implementation of revised Emergency Operating Procedures. As indicated in the attached letter report, our revised EOPs will be in place after April 15, 1984. However, due to the system problems identified in the attached letter report and the desire to perform a full functional checkout prior to placing RVLIS in service, implementation of the proposed Technical Specifications for RVLIS needs to be coordinated with the next refueling outages for each of the North Anna Units. It would be our intent to let your issuance of approved RVLIS Technical Specifications constitute your acceptance of our plant-specific vessel level instrumentation system.

Very truly yours,

  
W. L. Stewart

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

Mr. James R. Miller, Chief  
Operating Reactors Branch No. 3  
Division of Licensing

Mr. M. W. Branch  
NRC Resident Inspector  
North Anna Power Station

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RVLIS IMPLEMENTATION STATUSStatus of installation, functional testing, and calibration of each RVLIS system:

Installation of the Unit 1 and Unit 2 RVLIS has been completed. Each system has been filled, vented, and calibrated and the calibration records are available for NRC review. Due to problems with the microprocessor unit on the systems, any control room indications were considered unreliable and to avoid possible confusion, the systems were turned off and the sensing lines were valved out. Work on the microprocessors has continued and the status of this effort is as follows:

Unit 1 - Both trains A and B indicate microprocessor "malfunctions". The problem has not yet been identified, but troubleshooting is in progress. Remote displays also indicate malfunction but this is probably related to the microprocessor malfunction. Train B has a cracked "mother board" connector. A replacement connector is being obtained.

Unit 2 - Train B has a microprocessor malfunction and Train A continues to blow fuses in the remote displays. These problems are being evaluated.

Both Units - System recorder pens and scales need to be replaced. Calibration checks need to be performed on each system and its remote displays following resolution of the microprocessor problems.

Most open items identified can be performed without requiring an outage. Due to the problems experienced to date and the length of time that the sensing lines have been valved out, we believe it would be prudent to perform a full functional test from the sensors to the remote displays prior to declaring the RVLIS an operable system. Since the valving in of the RVLIS and full functional test requires reactor vessel head access, this work can only be done during an outage at cold shutdown conditions. Unit 1 is scheduled for a refueling in late May-early June timeframe. Unit 2 has a maintenance outage in late March-early April time frame and a refueling outage in late summer. Troubleshooting activities and replacement part procurement is not expected to be completed as of the Unit 2 maintenance outage, therefore, we intend to complete work and functionally test the RVLIS system for each Unit at each of their next refueling outages.

Summary of conclusions regarding system performance based on testing and experience to date:

North Anna has no firm conclusions regarding system performance at this time because the opportunity to see the system in operation for an extended period has not existed. However, the following is noted:

1. Assuming all components function as designed, RVLIS should provide an accurate indication of reactor vessel hydraulic conditions.

Basis: System Design

2. System reliability is questionable.

Basis: During installation, test, and calibration numerous electrical and mechanical problems have arisen indicating a possible trend. Until the system is placed fully in service and allowed to "soak in", it is not known if the trend will continue.

3. Maintenance of the system could be costly.

Basis: Item (2) above (re: system reliability)

Description of any deviations from the as-built system from previously submitted design information:

1. The original system design required a bypass line around the differential pressure transmitters. Problems with the valves in the bypass paths resulted in a re-evaluation of the design. The conclusion reached (by Westinghouse) was to eliminate the bypass paths altogether.

Based on the Westinghouse recommendation, the bypass valves on the transmitters have been permanently locked shut and will be removed from the system at the earliest opportunity.

2. The original system design provided display variables terminology which was inconsistent with the Westinghouse Owners Group Procedures Subcommittee. Software changes have been made by Westinghouse to provide compatible display terminology with the new station EOPs.

Status of RVLIS usage in existing and planned EOPs:

RVLIS will be included in Status Trees and Functional Restoration Procedures only. Use of the RVLIS display data in the procedures will be dependent upon system availability.

If RVLIS is available, the procedures will utilize RVLIS data as one of the usable parameters which governs subsequent actions and steps. If the system is unavailable, the user will be directed to other sections of the procedure which utilize parameters other than RVLIS to govern subsequent actions and steps.

There are no plans for use of RVLIS data in any other procedures than those listed below.

Status Trees:

Core Cooling  
Inventory

FRPs:

FRP-C.1 Response to Inadequate Core Cooling  
FRP-C.2 Response to Degraded Core Cooling  
FRP-I.3A Response to Void in Reactor Vessel  
FRP-P.1 Response to Imminent Pressurized Thermal Shock.

North Anna revised EOP's will be implemented by April 15, 1984.