

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

April 15, 1980

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. Olan D. Parr, Chief  
Light Water Reactors Branch 3  
Division of Project Management  
U. S. Nuclear Regulatory Commission

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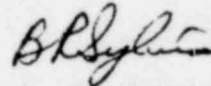
Dear Mr. Denton:

Potential Design Deficiencies in Bypass, Override and  
Reset Circuits of Engineered Safety Features

We have reviewed your letter of March 13, 1980, on the above subject. We are providing our response as the attachment. Note that additional information will be forwarded with our response to IE Bulletin 80-06.

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

Very truly yours,



B. R. Sylvia  
Manager-Nuclear Operations  
and Maintenance

cc: James P. O'Reilly

8004210177

North Anna Power Station Unit 2  
Potential Design Deficiencies in Bypass, Override,  
And Reset Circuits of Engineered Safety Features  
Review of Staff Position

The problems discussed in your letter of March 13, 1980, will be fully evaluated and answered in response to IE Bulletin No. 80-06. The review of the Staff Position presented here is limited to the containment ventilation isolation valves.

I. Introduction

- A. A subatmospheric containment system is used at North Anna Unit 2. This type of containment design physically prohibits the use of the containment ventilation system during unit operation.
- 1) Technical Specification 3.6.1.1 requires that primary containment integrity be maintained when in Modes 1, 2, 3 and 4. This precludes the opening of the containment ventilation valves, MOV-HV200A, B, C, D when reactor coolant system temperature is above 200°F.
  - 2) Technical Specification 3.6.1.4 requires that primary containment internal air partial pressure be maintained subatmospheric within the acceptable operation range of T.S. Figure 3.6-1 when in Modes 1, 2, 3 and 4. This also precludes the opening of the containment ventilation valves.
  - 3) A description of the containment ventilation system is presented in FSAR Section 9.4.9.2.
- B. The isolation valves are remote-manually operated from the Main Control Room. During refueling, a high radiation signal from the containment gas or particulate monitors, or the manipulator crane area monitor will automatically trip the containment purge supply and exhaust fans and close the containment ventilation butterfly valves, thus isolating the containment.
- 1) Once closed by a high radiation signal, the containment ventilation valves will remain closed until i.) the high radiation signal clears and, ii.) the control room switch is placed in the open position.
  - 2) The containment ventilation system at North Anna Power Station is not designed to, nor is it required to, isolate upon receipt of an ESF signal (other than high radiation). The isolation system has a high degree of reliability since the valves remain closed during operational Modes 1, 2, 3 and 4.

## II. Review of Staff Positions

NRC Comment 1: The overriding of one type of safety actuation signal (e.g., particulate radiation) should not cause the blocking of any other type of safety actuation signal (e.g., iodine radiation, reactor pressure) for those valves that have no function other than containment isolation.

Response: During Operational Modes 1,2,3 and 4, the containment ventilation valves remain in the closed position. Also during these modes the valves are under administrative control. These controls require the valves to be locked closed with the power removed from the valves (breakers opened). Therefore, this comment is not applicable in these modes. During Modes 5 and 6 the valves may be opened. Overriding any one of three radiation monitors will not cause the blocking of the others.

NRC Comment 2: Physical features (e.g., key lock switches) should be provided to insure adequate administrative controls.

Response: Since the containment ventilation valves are closed during Operational Modes 1,2,3 and 4, physical features are not required. Adequate administrative controls are provided when in Mode 6 by T.S. 3.9.9 which requires the containment purge and exhaust isolation system to be operable.

NRC Comment 3: A system level annunciation of the overridden status should be provided for every safety system impacted when any override is active. (See Regulatory Guide 1.47).

Response: When any of the three radiation monitors which provide an automatic closure signal to the ventilation isolation valves is in an override status, there is a local annunciation at the radiation monitoring panel and main control board annunciation.

NRC Comment 4: The following diverse signals should be provided to initiate isolation of the containment purge/ventilation system: containment high radiation, safety injection actuation, and containment high pressure (where containment high pressure is not a portion of safety injection actuation).

Response: Since the ventilation isolation valves are closed during Modes 1, 2,3 and 4, there is no need for diverse signals, as described above, to initiate isolation of the containment purge/ventilation system.

NRC Comment 5: The instrumentation systems provided to initiate containment purge ventilation isolation should be designed and qualified to Class IE criteria.

Response: Since the ventilation isolation valves are closed during Modes 1,2,3 and 4, there is no need for the instrumentation systems which initiate containment purge ventilation isolation to be qualified to Class IE criteria.

NRC Comment 6: The overriding or resetting of the ESF actuation signal should not cause any equipment to change position.

Response: During Modes 1,2,3 and 4, the ventilation isolation valves remain in the closed position. Resetting of the ESF actuation signal will not affect these valves. During Modes 5 and 6 the ventilation isolation valves may be opened. If the valves are automatically closed by high radiation, they will remain closed following the removal of the high radiation signal.