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(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

CON'TEVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

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CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

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ISSUED DESCRIPTION NA (45) 7911300 472 NRC USE ONLY

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Virginia Electric and Power Company
North Anna Power Station #1
Docket No. 50-338
Report No. LER 79-141/01T-0

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Description of Event

On November 6, 1979, during a review of system operation following a review of system performance during a recent unit trip and subsequent safety injection, it was discovered that the control room air-operated dampers which isolate the control room from outside air on an SI signal return to their non-safety mode when the SI signal is reset. This is contrary to FSAR comment 7.4 which states that two actions are required to return ESF equipment to a non-safety feature mode. Specifically, it is accomplished by resetting the appropriate actuation signal and subsequently operating the control switch for the device.

A review was immediately initiated to determine if any other deficiencies existed.

The following is a list of potential design deficiencies that were discovered.

The following systems return to their non-safety mode following reset of an ESF signal:

Control Room Habitability System (HV)

Supply Air Damper AOD-HV-160-1
Exhaust Air Damper AOD-HV-161-1
Dampers reopen after SI signal is reset.

Safeguards Area Ventilation System (HV)

Exhaust Air Dampers AOD-HV-128-1,-2,-3,-4
Filter Bank Dampers AOD-HV-107A-1,A-2,A-3,A-4,B-1,B-2,B-3,B-4
Dampers re-position to bypass filters after Containment Depressurization Actuation (CDA) signal is reset.

Containment Ventilation System (HV)

Containment Recirculation Cooler Fan, 1-HV-F-1A,-B
Control Rod Drive Cooling Fan, 1-HV-F-37A, B, C, D, E, F
Fans restart after CDA signal is reset

Service Water System (SW)

Supply to Air Cooling Coils, MOV-SW-110A,B & 114A,B
Supply to Air Cooling Coils, TV-SW-101A,B
Valves reopen to provide service water to the containment air coolers after CDA signal is reset. This occurs only when the control switch for cooling had previously been placed in the service water position. Normal cooling of the recirculation air cooler is with chiller water.

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The following systems do not go to completion if the CDA signal is reset prior to expiration of the starting time delay relay:

Recirculation Spray System (RS)

Outside Recirculation Spray Pump, 1-RS-P-2A, B

Inside Recirculation Spray Pump, 1-RS-P-1A, B

Service Water System (SW)

RS Heat Exchanger Radiation Monitoring Sample Pumps, 1-SW-P-5, 6, 7, 8

Probable Consequences of Occurrence

The reset capability of ESF signals is required to permit action in the post accident period. With the present design, the protective actions of the affected systems could be prevented or cancelled once the associated actuation signal is reset which is in noncompliance with IEEE Standards. The health and safety of the general public were not endangered by this event. Unit 2 systems have the same reset design and are similarly affected.

Cause of Occurrence

The cause of these discrepancies is not known at this time. However, it appears that they may have resulted from a possible design deficiency by Stone and Webster.

Immediate Corrective Action

The problem is being evaluated by Engineering Services to determine the corrective actions required.

Scheduled Corrective Action

The reset circuitry for the affected ESF equipment will be modified or redesigned, if required.

Actions Taken to Prevent Recurrence

No further actions are required.

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