U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK / / / / / / / (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

/0/1/ /V/A N/A/S/2/ (2) /0/0/-/0/0/0/0/0/-/0/0/ (3) /4/1/1/1/1/ (4) / / / (5)

LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

/0/1/ REPORT SOURCE /L/ (6) /0/5/0/0/0/3/3/9/ (7) /0/3/0/8/8/2/ (8) /0/4/0/7/8/2/ (9)

DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

/0/2/ / On March 8, 1982 with Unit No. 2 in Mode 4, one Diesel Generator and one offsite /

/0/3/ / power supply for the 2H Emergency Bus became temporarily inoperable during a per-/

/0/4/ / iodic surveillance test. The Emergency Busses were immediately cross-tied and /

/0/5/ / the preferred offsite circuit was restored within the applicable Action State- /

/0/6/ / ments; therefore, the health and safety of the general public were not affected. /

/0/7/ / This is contrary to the LCO for T.S. 3.8.1.1 and 3.8.2.1 and reportable pursuant /

/0/8/ / to T.S. 6.9.1.9.b. /

SYSTEM CODE | CAUSE CODE | CAUSE SUBCODE | COMPONENT CODE | COMP. SUBCODE | VALVE SUBCODE

/0/9/ /E/E/ (11) /D/ (12) /Z/ (13) /E/N/G/I/N/E/ (14) /Z/ (15) /Z/ (16)

LER/RO | EVENT YEAR | SEQUENTIAL REPORT NO. | OCCURRENCE CODE | REPORT TYPE | REVISION NO.

(17) REPORT NUMBER /8/2/ /-/ /0/1/3/ / \ / /0/3/ /L/ /-/ /0/

ACTION TAKEN | FUTURE ACTION | EFFECT ON PLANT | SHUTDOWN METHOD | HOURS | ATTACHMENT SUBMITTED | NPRD-4 FORM SUB. | PRIME COMP. SUPPLIER | COMPONENT MANUFACTURER

/X/ (18) /G/ (19) /Z/ (20) /Z/ (21) /0/0/0/0/ (22) /Y/(23) /N/(24) /A/(25) /F/0/1/0/(26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

/1/0/ / A deficiency in the periodic test procedure caused an attempt to restart the 2H /

/1/1/ / Emergency Diesel Generator prior to the 60 second shutdown delay on the fuel /

/1/2/ / supply timing out. The Emergency Busses had to be cross-tied in order to restore/

/1/3/ / the normal supply to the 2H Bus. The procedure is being changed to prevent /

/1/4/ / recurrence. /

FACILITY STATUS | %POWER | OTHER STATUS | METHOD OF DISCOVERY | DISCOVERY DESCRIPTION (32)

/1/5/ /G/ (28) /0/0/0/ (29) / NA / (30) /B/ (31) / Engineer Observation /

ACTIVITY RELEASED | CONTENT OF RELEASE | AMOUNT OF ACTIVITY (35) | LOCATION OF RELEASE (36)

/1/6/ /Z/ (33) /Z/ (34) / NA / / NA /

PERSONNEL EXPOSURES

NUMBER | TYPE | DESCRIPTION (39)

/1/7/ /0/0/0/ (37) /Z/ (38) / NA /

PERSONNEL INJURIES

NUMBER | DESCRIPTION (41)

/1/8/ /0/0/0/ (40) / NA /

LOSS OF OR DAMAGE TO FACILITY (43)

TYPE | DESCRIPTION

/1/9/ /Z/ (42) / NA /

PUBLICITY

ISSUED | DESCRIPTION (45) | NRC USE ONLY

/2/0/ /N/ (44) / NA / / / / / / / / / / / / /

NAME OF PREPARER W. R. CARTWRIGHT PHONE (703) 894-5151

Virginia Electric and Power Company
North Anna Power Station, Unit No. 2 Attachment: Page 1 of 2
Docket No. 50-339
Report No. LER 82-013/03L-0

Description of Event

On March 8, 1982, with Unit No. 2 in Mode 4, the Diesel Generator and the offsite power supply for the 2H Emergency Bus became inoperable. The Diesel Generator was being tested to verify that on a loss of the Diesel Generator (with offsite power not available) the loads are shed from the Emergency Bus and subsequently re-loaded in accordance with design requirements. The Emergency Bus was being supplied by the offsite power supply and the Diesel Generator prior to the test. A safety injection test signal was initiated, the diesel was manually shutdown and the offsite power supply breaker was opened. The Diesel Generator did not auto-start upon resetting the shutdown relay. The offsite power supply breaker is interlocked to prevent closure onto a de-energized bus.

Probable Consequences of Occurrence

The 2H Emergency Bus was energized by the 2J Emergency Bus via the cross-tie breaker within nine minutes of the diesel start failure. The 2H bus was returned to the normal offsite power supply within 16 minutes of the failure. One source of onsite and one source of offsite power were maintained operable for the entire event; therefore, the health and safety of the general public were not affected.

Cause of Event

The periodic test that was being performed during the event did not specifically address the 60 second time delay for a diesel re-start. The time delay prevents fuel admission to the diesel for 60 seconds after the "Shutdown Reset" pushbutton has been depressed. The purpose of this feature is to assure that the diesel has come to a complete stop prior to attempting a restart.

The procedure utilized for the Blackout/Safety Injection Functional Test shutdown the diesel with an automatic start signal present (safety injection). The shutdown relay was reset which admitted air to start the diesel, but the fuel governor would not admit fuel until the 60 second time delay had expired. At the end of 60 seconds, fuel was supplied to the diesel; however, no air remained to rotate the diesel. The diesel was now effectively inoperable until the air storage tanks could be re-pressurized.

The 2H Emergency Bus was de-energized, the diesel was inoperable and the normal supply breaker was interlocked to prevent closure onto a de-energized bus. The two emergency busses had to be tied together in order to restore the normal power supply to the 2H Emergency Bus.

Immediate Corrective Action

The Emergency Busses were cross-tied and the normal offsite power supply was restored to the 2H Emergency Bus within 16 minutes of the Diesel start failure. The Emergency Busses were immediately separated again.

Scheduled Corrective Action

The periodic test will be modified to prevent an air start signal from reaching the diesel when no fuel is available for an engine start.

Operations personnel will be trained in the proper procedure for a diesel shutdown with a start signal present.

Actions Taken to Prevent Recurrence

The implementation of the scheduled corrective action will prevent recurrence.

Generic Implications

This design is applicable to all diesel generators at North Anna. Investigation of the technical basis of the 60 second timer and possible subsequent changes is continuing.

Review of the design basis of the interlock preventing closure of the normal supply breaker to a de-energized bus is being conducted.