

The licensee determined that the most probable cause of the diode failure on the “B” train SSPS card was either age-related degradation or a random failure. The diode failed as a short circuit actuating certain “B” train master relays and resulting in the invalid actuation of the “B” train SI. This same failure also prevented “B” train SI from being reset from the control room, which required operations and maintenance staff to take local actions. A contributing cause of the failure was that the licensee had not implemented a program to detect and correct age-related degradation of the SSPS cards.

Licensee corrective actions for this event included (1) establishing a preventive maintenance program to remove, test, and repair these cards, along with cards in other sensitive systems, at periodic intervals, (2) developing an abnormal operating procedure to reset SI locally, and (3) implementing life-cycle management for SSPS cards.

Additional information is available in the document “North Anna Power Station – NRC Special Inspection Report 05000339/2007009,” dated August 27, 2007, which can be found on the NRC’s public Web site in the Agencywide Documents Access and Management System (ADAMS), under Accession No. ML072410359. See also North Anna Power Station, Unit 2, Licensee Event Report 50-339/2007-003-00, dated August 27, 2007 (ADAMS Accession No. ML072480671).

DISCUSSION

The SSPS card failure at North Anna resulted in a complicated reactor trip response that required manual actions outside the control room to secure SI flow and restore other equipment that actuated from the signal. This event revealed the lack of procedure guidance to reset the SI after SSPS card failure, which was an obstacle to mitigating the event. Power reactor licensees rely on circuit cards such as SSPS cards being operable in systems as specified in technical specifications. Industry operating experience shows that circuit cards are susceptible to age-related component failures. Power reactor licensees can address this by establishing periodic preventive maintenance of circuit cards. Similarly, licensees and certificate holders of fuel cycle facilities are required to perform inspection, testing, calibration, and maintenance of certain systems and components as delineated in applicable sections of Title 10 of the *Code of Federal Regulations*, Parts 70 and 76.

CONTACT

This IN requires no specific action or written response. Please direct any questions about this matter to the technical contacts listed below or the appropriate project manager in the Office of Nuclear Reactor Regulation (NRR).

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Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

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