PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION III **Morning Report Date: FEB 07, 2005**

Licensee/Facility:

EXELON GENERATION CO., LLC
Dresden
Morris, Illinois
Dockets: 050-00237 050-00249
[2] GE-3, [3] GE-3

Notification:

MR Number: 3-2005-0005
Date: 02/02/2005
8hrNon-Emergency Report

Subject: Design Deficiency Identified Where a Single Failure Could Result in the Loss of Both Division 1 and Division 2 4160 Vac Safety-Related Switchgear (LaSalle) Unanalyzed Condition (Dresden & Quad)

Discussion:

Discussion: Following a identification of a similar issue at Crystal River (EN No. 41362), the Senior Resident Inspector provided information relating to that event to electrical engineering personnel at LaSalle Station on 02/01/2005. At 1542 CST on 02/02/2005, LaSalle Station personnel concluded that an issue similar to that identified at Crystal River also existed at LaSalle Station.

At LaSalle Station, the electrical loading for the station auxiliary transformer (SAT), which is the 345,000 Vac to 4,160 Vac transformer that normally provides power to the unit's 4160 Vac safety-related switchgear (one transformer for each unit), is measured by metering equipment that is common to both the Division 1 and Division 2 4160 Vac safety-related switchgear. The licensee identified that a single failure/fault in this metering equipment, instead of potentially only causing one 4160 Vac safety-related bus to undergo fault isolation as intended in the plant's design, could result in the simultaneous fault isolation of both the Division 1 and Division2 4160 Vac safety switchgear. This type of fault isolation, in effect, "locks out" breakers that supply each 4160 Vac switchgear such that all potential electrical sources, including the safety-related feeds from each Division's emergency diesel generator (EDG) and the SAT, are unavailable.
As a result of identifying that a single failure in this metering equipment could result in the loss of two safety-related 4160 Vac busses instead of just one, as intended in the plant's design, the licensee declared the safety-related sources to one 4160 Vac safety bus inoperable (one EDG and one feed from the SAT) and entered Technical Specification (TS) 3.8.1, Conditions A, B, and E, for each unit. Of these, TS 3.8.1, Condition E, was the most limiting, requiring at least one safety-related source to be restored to an operable status in 12 hours.

At 2306 CST on 02/02/2005, the licensee completed installation of temporary modifications on each unit that isolated the subject metering equipment and removed it from the circuitry associated with each 4160 Vac safety-related bus. Physically, this involved the simple opening of several knife switches provided in the circuitry for just this purpose. The switches were then safety-tagged in the open position, per the temporary modification, to provide for configuration control. The circuitry that has been isolated restores the ability to supply the 4160 Vac busses from their safeguard sources and involves only basic power and current indication for the SAT. All bus automatic protective functions are still operable.

Region III, in conjunction with NRR, is currently evaluating the appropriateness of the licensee's TS entry and the potential generic implications of this issue.

The risk analysts at LaSalle evaluated this event and concluded the risk was low in the range of E-6 and was reasonable. Region III risk analysts reviewed the licensee risk evaluation and determined it was acceptable.

On 2/3/2005, both the Dresden (EN No. 41370) and Quad Cities (EN No. 41369) Stations in following up on the issues identified at Crystal River and LaSalle identified similar, but less significant, issues involving single failure vulnerability. In the case of Dresden and Quad the issues are similar to each other, except that the systems affected are the containment cooling service water (CCSW) system at Dresden and the residual heat removal service water (RHR) system at Quad.

At Dresden, the 4160 VAC relaying and metering current transformer (CT) associated with both the Unit Auxiliary Transformer (UAT) and the Reserve Auxiliary Transformer (RAT) for Unit 2 could have a failure in the circuitry that could cause combined protective relay trips that could result in a trip and lock out of both normal and emergency power to buses 23 and 24 for Unit 2. A similar vulnerability exists on the CT for the Unit 3 UAT and RAT and would lock out buses 33 and 34 for Unit 3. Buses 23 & 24 (33&34) supply mostly non-safety loads, except for the CCSW pumps.

Buses 23 & 24 also supply normal power to buses 23-1 & 24-1 which are the main safety related buses. Buses 23-1 and 24-1 are also supplied by the emergency diesel generators. If buses 23 and 24 were lost as a result of a failure in the CT circuitry, the emergency diesel generators would be able to supply power to buses 23-1 and 24-1. However, the CCSW pumps would be without both normal and emergency power. The Dresden licensee entered several TS Limiting Condition for Operation (LCO) action statements, with the most limiting being an 8 hour action statement from TS 3.8.7, and corrected the condition within the action statement time frame by lifting a lead off the CT such that only one of buses 23 & 24 could be lost in this manner, leaving the other CCSW pumps available.

At Quad, a failure of the UAT and RAT relaying and metering CT circuitry could cause the trip and lockout of buses 13 & 14 on Unit 1 (23 & 24 for Unit 2). Buses 13 and 14 supply mostly non-safety loads and the RHRSW pumps. Buses 13 and 14 also supply normal power to main safety related buses 13-1 and 14-1. In the event of the loss of buses 13 & 14 through the CT circuitry failure, the emergency diesel generators would be able to supply buses 13-1 and 14-1. However, the RHRSW pumps would be without normal and emergency power. The Quad licensee also entered a similar 8 hour TS LCO action statement and corrected the condition by disconnecting a CT lead so that only one of buses 13 or 14 would be affected, leaving the other RHRSW pumps available.

Regional Action: The Senior Resident Inspector responded to the station at 1930 on 02/02/2005, and monitored the licensee's response and recovery actions until the temporary modifications were installed on each unit and all TS LCO Action Conditions were exited. Region III is evaluating the need for a Special Inspection, in accordance with Management Directive 8.3

At Dresden and Quad Cities, the Resident Inspectors are monitoring the licensee's actions.

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