**PRIORITY ATTENTION REQUIRED MORNING REPORT - REGION II** **Morning Report Date: DEC 14, 2004**

**Licensee/Facility:**

CAROLINA POWER & LIGHT CO.
Brunswick
Southport, North Carolina
Dockets: 050-00325 050-00324
[1] GE-4, [2] GE-4

**Notification:**

MR Number: 2-2004-0019
Date: 12/13/2004
Call / Fax from Licensee

**Subject:** Brunswick Standby Liquid Control Pump Generic Concerns

**Discussion:**

A Standby Liquid Control (SLC) pump failure at Brunswick on October 27, 2004, led to the discovery of two potentially generic concerns; one regarding test methodology, and the second regarding the discharge piping accumulator bladder, which provides dampening of pump discharge pulses. The licensee concluded that the failure of the 1B SLC pump to develop full flow during a surveillance test was caused by positive displacement pump cylinder gas binding. The failure mechanism of SLC pump piston gas binding was discovered through a change in the system test lineup. This change resulted in higher pump discharge pressure [90 psig vs. approximately atmospheric] on pump startup for testing. Under the previous test method the pump was self-priming due to the low initial operating pressure of the pump (i.e., any gas contained in a pump cylinder would not be compressed significantly and be swept from the pump). However, due to the higher initial operating pressure with the new test lineup, a gas bound cylinder would only contract and expand the gas during pump piston stroke and therefore not self-prime. This resulted in reduced pump output flow. Gas binding is a potential SLC failure mode as initial pump discharge pressure would be higher than reactor pressure (1000 psig) during operation.

The licensee determined that the source of the pump cylinder gas binding and several other discharge piping gas voiding events was due to nitrogen accumulator bladder leakage. As a result, the licensee discovered that vendor guidance for bladder storage and industry guidance for shelf life allowed for potentially inappropriate bladder storage. Previous vendor guidance indicated that the bladders could be stored up to 3 years in the shipped configuration (deflated and folded). The vendor, Greer Hydraulics Inc, later revised the storage recommendation to limit storage as shipped to one year and 3 years if inflated. These changes were in response to actual problems with non-nuclear applications and was not widely communicated to nuclear end-users. All of the bladders that have leaked were stored in the folded condition for over 3 years.

The licensee is evaluating the need to issue a report under 10CFR Part 21.


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