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Carolina Power & Light Company

September 13, 1979

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SERIAL: GD-79-2303

Office of Nuclear Reactor Regulation
ATTENTION: Mr. T. A. Ippolito, Chief
Operating Reactors Branch No. 3
United States Nuclear Regulatory Commission
Washington, D.C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNIT NOS. 1 AND 2
LICENSE NOS. DPR-71 AND DPR-62
DOCKET NOS. 50-325 AND 50-324
IE BULLETIN NO. 79-01: ENVIRONMENTALLY UNQUALIFIED LIMIT SWITCHES

Dear Mr. Ippolito:

On August 31, 1979 your staff was informed by Carolina Power & Light Company (CP&L) via telecopy of two environmentally unqualified limit switch types in use at the Brunswick Steam Electric Plant (BSEP). Justification for continued operation was provided in the telecopy and is formally documented below as are our plans for additional action on this matter.

This letter is submitted in compliance with the 14-day written report requirement of IE Bulletin No. 79-01, Item 4.

1. The limit switches (type SL-2C-11 National Acme Position Indicating Limit Switch) used on the testable check valves of the core spray and residual heat removal systems at the Brunswick Steam Electric Plant are not qualified. As indicated in a letter from Mr. James McKinney of Rockwell International Flow Control Division to Mr. H. G. Krieder of United Engineers and Constructors, Inc., dated July 25, 1979, this limit switch is not safety related in that it provides position indication for testing purposes only. This limit switch does not control nor affect the safety related operation of the testable check valve in any manner; therefore, it is justified for the Brunswick Steam Electric Plant to continue in operation with these switches. No corrective measures are necessary.
2. The limit switches used on the Brunswick Main Steam Isolation Valves (MSIVs) are Rockwell Model SL-3M-L devices. These switches are not qualified. The contacts on the switches perform two major functions: (1) to display the condition of the valves, and (2) to provide a reactor protection system scram logic input in the case of simultaneous MSIV closure. These switches provide no control function with regard to the valve's operation and do not interface with the containment isolation logic in any manner.

During a LOCA or a Pipe Break Outside of Containment (PBOC), these switches would be exposed to the accident environment, potentially failing. However, reactor scram will be initiated by high drywell pressure or low reactor vessel water level, not by MSIV closure. In

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fact, low reactor vessel water level may also initiate MSIV closure. A LOCA would potentially cause loss of only the inboard limit switch, whereas a PBOC would potentially cause the loss of only the outboard limit switch. Therefore, following MSIV closure, the position indication for the unaffected MSIV would still be available to give the status of that valve.

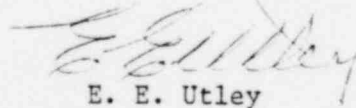
The various failure modes of the switches have been considered, and the worst case has been determined to be a short to ground. This will result in blowing the power fuses in each contact circuit. For the position indicating circuits, the result would be a loss of position indication for the affected valve. In the case of the reactor protection input, a blown fuse would result in an additional scram signal being present; because the scram relays are fail safe, a loss of power will result in a trip.

Based on the above evaluation, General Electric has concluded that the MSIV limit switches do not need to be environmentally qualified, since their postulated failure would not affect the reactor system's response to a postulated LOCA or PBOC; and, therefore, continued operation with these switches poses no threat to the public health and safety.

In addition to the analysis above, CP&L has requested that United Engineers and Constructors and General Electric provide to us an identification of an environmentally qualified switch for use on the MSIV's. When this information is received, these new switches will be obtained and installed at the first outage of sufficient length following their receipt. Also, the relevant Operating Procedures and Emergency Instructions will be revised by September 30, 1979 to include a caution to warn the operators that indications received from the MSIV limit switches may not reflect the MSIVs' actual positions in a LOCA environment.

I trust that this information is suitable for your use. If you have any questions, please do not hesitate to contact the appropriate members of my staff.

Yours very truly,



E. E. Utley
Executive Vice President
Power Supply & Customer Services

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cc: Mr. J. P. O'Reilly
United States Nuclear Regulatory Commission - Region II

1020 293