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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23  
1994 ANNUAL REPORT OF PRIMARY SAFETY AND RELIEF VALVE CHALLENGES

Gentlemen:

In accordance with the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 Technical Specifications, Section 6.9.1.2.4, Carolina Power & Light Company submits the enclosed 1994 Annual Report of Primary Safety and Relief Valve Challenges.

If you have any questions concerning this submittal, please contact Mr. Keith R. Jury at (803) 857-1363.

Very truly yours,

R. M. Krich  
Manager - Regulatory Affairs

SAB:sb  
Enclosure

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## **1994 ANNUAL REPORT PRIMARY AND SAFETY RELIEF VALVE CHALLENGES**

**EVENT:** Challenge to Primary Relief Valve

**DATE:** August 2, 1994

**DESCRIPTION:**

At 0541 hours on August 2, 1994, control room operators initiated a manual reactor trip in response to a rapid and unexplained decreasing of turbine generator load. This rapid reduction in load caused an expected subsequent increase in primary system pressure due to the reduction in secondary system heat removal. Pressurizer Power Operated Relief Valve (PORV), PCV-455C, opened in response to the increasing primary system pressure.

The circumstances and causes of this loss of load were evaluated by an Event Review Team and were further documented under Adverse Condition Report 94-01142. As part of this evaluation, the sequence of events was developed describing the response of PCV-455C to the primary system pressure increase. The transient initiated at 05:41:11 when turbine first stage pressure began decreasing. From this time until the reactor was manually tripped 24 seconds later, the sequence of events shows that PCV-455C cycled four times. The maximum primary system pressure observed during this transient was 2270 psig. Normal operating primary system pressure is 2235 psig, with the normal PORV setpoint being 2335 psig. PCV-455C is also provided with a "rate circuit," which allows faster response to changing primary system pressure, which resulted in the PORV opening prior to reaching the 2335 psig setpoint.

At 05:42:58, primary system pressure reached its lowest value of 1893 psig; primary system pressure began to increase at 05:43:18. Although primary system pressure had decreased below the 2000 psig closure setpoint for PCV-455C, control room operators observed indication that PCV-455C had not completely reclosed. As a result, the PORV Block Valve, RC-536, was closed at 05:44:23. An Unusual Event was declared at 0554 hours due to indication that the PORV had not reclosed after lifting. The Unusual Event was terminated at 0717 hours following verification that there was no leakage through the PORV Block Valve. All other plant equipment operated as required, and the unit was placed in the hot shutdown condition in accordance with plant procedures. The actuations of PCV-455C resulted in a peak PRT level and pressure of 78% and 15 psig, respectively.

A more detailed description of this event, including the cause, significance, and corrective actions, was provided to the NRC under Licensee Event Report (LER) No. 94-016, dated September 1, 1994. A supplement to this LER was provided on November 15, 1994.

Pressurizer PORV PCV-455C was found to operate properly and in conformance with its design during the loss of load transient and subsequent reactor trip. The failure of this valve to fully close following the primary system pressure reduction, was mitigated by closure of the PORV Block Valve, RC-536. A Work Request (WR 94-ARET1) was initiated to correct PCV-455C seat leakage during the upcoming refueling outage.