

SAFETY EVALUATION
MODIFICATION TO SAFETY
INJECTION ACTUATION SYSTEM
H.B. ROBINSON, UNIT 2

I. INTRODUCTION

The licensee, Carolina Power and Light Company, in its submittal of May 18, 1979, proposed certain modifications to the safety injection actuation system logics for H.B. Robinson, Unit 2 in response to Item 3 of IE Bulletin 79-06A dated April 14, 1979.

Since the date of licensing until the issuance of IE Bulletin 79-06A, safety injection was initiated, in addition to other parameters, from a coincident trip of 1/3 matched pairs of low pressurizer level and low pressurizer pressure. Item 3 of IE Bulletin 79-06A directed all facilities using pressurizer water level coincident with pressurizer pressure for automatic initiating of safety injection to trip the low pressurizer level setpoint bistables so that when pressurizer pressure reaches the low setpoint, safety injection would be initiated regardless of the pressurizer level.

Because of the concern that this action has resulted in placing H.B. Robinson Unit 2 in a condition (one-out-of-three trip) which is more susceptible to spurious actuation of the safety injection system, the licensee has proposed the following modifications and Technical Specification changes to correct this situation.

II. EVALUATION

The proposed modification to the safety injection actuation system entails removing the pressurizer level signal from each of the pressurizer level/pressure channel trips and converting the system to a two-out-of-three pressurizer low pressure trip. The instrumentation logic takes pressurizer pressure signals from three pressure transmitters and initiates a safety injection actuation whenever two of the three signals reach the low pressure setpoint of 1700 psig. This modification does not involve a change in the setpoint. These modifications will satisfy the requirements of IEEE 279-1971, and other applicable standards required during the plant construction stage. The modifications will be implemented during the present refueling outage. The change will be made one train at a time, with each train tested before being placed in service. We find these modifications acceptable.

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We have reviewed the instrumentation power sources. There are four instrument buses. Two buses are supplied from inverters which in turn are energized from two independent battery banks for the plant. The two remaining instrument buses are supplied by constant voltage transformers connected to separate vital 480 volt motor control centers (MCC 5 and MCC 6). The three pressurizer pressure transmitter channels are energized from the two inverters and MCC 5. The system satisfies the single failure requirement of IEEE 279-1971. However, a single failure with loss of off-site power will trip two channels resulting in a spurious safety injection. This undesirable operational event has been brought to the attention of the licensee and will be resolved with the licensee as a separate issue in a follow-up letter. We find this acceptable.

The proposed Technical Specifications revise Tables 3.5-1 and 3.5-3 and associated bases to specify automatic safety injection actuation on a two-out-of-three pressurizer low pressure of 1700 psig. We find these changes to the Technical Specifications to be acceptable.

111. CONCLUSION

Based on our review of the licensee's submittal, we conclude that the modifications to the safety injection actuation system logic satisfy the requirements of IEEE 279-1971 and that the associated Technical Specifications are correct; and therefore, are acceptable.