SAFETY EVALUATION

MODIFICATION TO SAFETY

INJECTION ACTUATION SYSTEM

INDIAN POINT UNIT 3

I. INTRODUCTION

The licensee, Power Authority of the State of New York, in its submittal of April 26, 1979, proposed certain modifications to the safety injection actuation system logics for Indian Point Unit 3 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 Indian Point Unit 3 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 (TS) 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 modification will be implemented during the weekend when the load on Unit 3 can be reduced. The change will be made one train at a time, with each train tested before being placed in service. We find this modification acceptable.

We have reviewed the instrumentation power sources and determined there are four 120V instrument buses. Three of the buses (31, 32 and 33) are supplied from inverters which in turn are energized from three independent battery banks for the plant. The fourth bus (34) is supplied by a constant voltage transformer connected to 480 volt (emergency power) motor control center 36B. Alternate power to the four buses can be supplied from the lighting switchgear. The three pressurizer pressure transmitters channels are energized from buses 31, 32 and 34; consequently, a single failure will fail only one instrument channel. The licensee has committed to install a fourth battery and inverter as an additional source of instrument power during the next refueling outage (fall 1979), pending the receipt on site of the necessary materials, but to be installed not later than 1981 refueling outage.

The proposed TS change Section 3.5 to specify automatic safety injection actuation on a two-out-of-three pressurizer low pressure of 1700 psig. We find the changes to the TS to be acceptable.

III. 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 TS are correct; and therefore, are acceptable.