



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 197 TO FACILITY OPERATING LICENSE NO. DPR-64

POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated January 29, 1999, as supplemented by letter dated August 2, 1999, the Power Authority of the State of New York (PASNY or the licensee) submitted amendments to modify Indian Point Unit 3 (IP3) Technical Specifications (TSs) 3.10.5, "Rod Misalignment Limitations" and 3.10.6, "Inoperable Rod Position Indicator Channels" and their associated BASES. The proposed amendments would allow ± 24 steps misalignment (currently it is ± 18 steps), at or below 85% of Rated Thermal Power (RTP). Above 85% of RTP, the indicated misalignment between the group step counter demand position and the analog rod position indicator shall remain less than or equal to ± 12 steps unless the bank position is greater than 225 steps, in which case peaking factors are sufficient to use the limits of Figure 3.10-1. The proposed change is based on an evaluation performed by Westinghouse (WCAP-14668).

The licensee's experience with the Analog Rod Position Indication (ARPI) System shows that indicated misalignment is often greater than ± 12 steps. The root cause of this phenomenon is the analog rod position indication variation with temperature, most often after a recent power level change.

IP3 has modified TS 3.10.5.1 to allow up to 1 hour after control rod motion to verify control rod position. The 1 hour time period is consistent with the NRC approved time extensions at other plants.

Westinghouse performed the evaluations of the effects of increasing the allowed control rod indicated misalignment from ± 12 steps to an indicated misalignment of up to ± 24 steps when the core power is less than or equal to 85% of RTP and ± 12 steps above 85% of RTP. Changing the TS to allow ± 24 steps misalignment will reduce the use of the flux mapping system. Frequent use of the flux mapping system may lead to more maintenance work required on the system, and an "As Low as is Reasonably Achievable" (ALARA) concern. The results of the analyses were documented in WCAP-14668, and submitted to the staff by PASNY letter IPN-97-024 dated February 26, 1997. A review of the results is presented below.

2.0 SAFETY EVALUATION

The ARPI system is designed to an accuracy of 12 steps. Therefore, in order to guarantee a rod misalignment of less than ± 24 steps (12 steps misalignment + 12 steps ARPI uncertainty), the individual ARPI readings must be no larger than 12 steps. In order to justify changing the misalignment to ± 24 steps, the licensee did evaluations for misalignments of up to 36 steps