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April 12, 1978
IPO-84

REGULATORY DOCKET FILE COPY

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Albert Schwencer, Chief
Division of Operating Reactors Branch No. 1

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286

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Dear Sir:

The Authority has been advised by the Westinghouse Electric Corporation of an error in their ECCS Evaluation Model. It is our understanding, based on Westinghouse information, that the error resulted from an incorrect derivation of the volumetric heat flux for the Zirconium-water reaction from a calculated surface heat flux. The volumetric heat flux due to Zirconium-water reaction is underestimated by a factor of 2. As a result of this calculational error, the total peaking factor for the Indian Point 3 facility must be revised.

There are several factors which are to be applied to the current full power F_Q^T limit of 2.32 as documented in the Indian Point technical specifications.

- 0.20 Penalty to be applied generically to correct the error in the Zirconium-water reaction rate.
- +0.07 Credit due to the fact that the original ECCS analysis showed a 75 F° margin to the 10 CFR 50.46 Appendix K limit of 2200 F° peak clad temperature (each 25 F° margin in PCT yielding a 1% credit in $F_Q^T = 2.32$).

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- + .01 Credit due to the fact that the blowdown portion (SATAN) of the ECCS calculation was performed at the engineered safeguards power level of 3216 MWt rather than the 3025 MWt rated power level.
- + .03 Credit due to the fact the original ECCS analysis employed generic fuel pellet data. Data available regarding manufacturing tolerances of pellet result in a benefit.

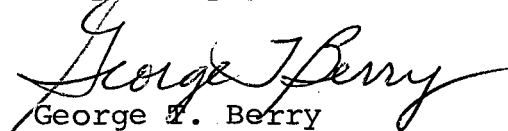
Combining the above penalty and credits results in a net penalty of -.09 to be applied to the current Technical Specification limit of 2.32 for F_{O}^{T} . Thus, the "new" full power F_{O}^{T} limit is 2.23. As of this date, the Authority will administratively control the operation of the Indian Point 3 facility to maintain the F_{O}^{T} at or below 2.23.

The Indian Point 3 facility is presently administratively limited to operation at 91% of rated power. Based on the information presented above, the Authority could operate the facility at 96% of rated power (i.e., $2.23/2.32 \times 100\%$) without the requirement for additional in-core surveillance.

The attached figure illustrates the steady-state F_{O}^{T} trend as a function of actual Cycle 1 burnup. It is seen that the F_{O}^{T} has steadily decreased with burnup. Compared to the 100% and 91% rated power technical specification limit of F_{O}^{T} of 2.32 and 2.55 respectively, the current measured value of the steady-state F_{O}^{T} is 1.7. Therefore, continued operation of the Indian Point 3 facility for the remainder of Cycle 1 will not require any revision to the Technical Specification or additional surveillance and will not create an undue risk to the health and safety of the public.

The Authority is currently working with Westinghouse to revise the October, 1975 version of our approved ECCS evaluation model. Once this model is developed and is acceptable to the NRC staff, the Authority intends to recalculate the ECCS analysis per 10 CFR 50.46.

Very truly yours,


George F. Berry
General Manager

F_Q^T VS. CYCLE 1 BURNUP

