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 Document Control Branch (Document Control Desk)

SUBJECT: Special rept: on 871223, excore quadrant power tilt ratio exceeded Tech Spec 6.9.3.1 by 2% for more than 24 h. Caused by misinterpretation of requirements. Detector currents calculated & detectors calibr based on currents.

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 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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	NRR/DRIS/SIB	1 1	NRR/PMAS/ILRB	1 1
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	RGN2 FILE 01	1 1		
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	H ST LOBBY WARD	1 1	LPDR	1 1
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	NSIC MAYS, G	1 1		



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JANUARY 22 1988

L-88-36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: Turkey Point Unit 3
Docket No. 50-250
Special Report - Radial
Flux Tilt Greater Than 2%

In accordance with Technical Specification 6.9.3.1 the attached Special Report is provided for your information.

Should there be any questions on this information, please contact us.

Very truly yours,


C. O. Woody
Executive Vice President

COW/SDF/gp

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator,
Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

SDF/022.SR

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SPECIAL REPORT

Turkey Point Unit No. 3
January 21, 1988

RADIAL FLUX TILT GREATER THAN 2 %

PURPOSE:

Technical Specification (TS) 6.9.3.1 requires that if the excore quadrant power tilt ratio (QPTR) exceeds a value of 2% for more than 24 hours, except for physics and rod exercise testing and if design hot channel factors for rated power are not exceeded, an evaluation as to the cause of the discrepancy shall be made and submitted as a report to the Commission.

On December 23, 1987, the excore QPTR was found to be in excess of 2% at 0900 hours, and was not returned to less than 2% within 24 hours. Since the excore QPTR was not returned to less than 2% within 24 hours, this special report is being submitted to the NRC. The unit was not operated above 50% power until the hot channel factors (HFCs) were verified to be within their limits and the fuel vendor notified.

EVENT:

When Unit 3 started up after refueling, all of the zero power physics test results were within their acceptance criteria. During the initial power ascension on September 13, 1987, the reactor power was held at 30% to perform the first power distribution flux map and for steam generator (SG) chemistry. The results of this flux map showed the HFCs to be well within their limits for 30% reactor power, but the incore QPTR was greater than 2%. Corrective actions were taken and this event was discussed in a special report submitted to the NRC (L-87-423).

Unit 3 was shutdown for a maintenance outage without ever exceeding 50% power. On December 22, 1987, Unit 3 was placed back on the line at 1539. Power escalation was held at 30% power for SG chemistry limits. During the performance of off normal operating procedure (ONOP) 12308.2, Power Range Nuclear Instrumentation Verification of Upper, Lower, and Channel Deviation Alarms, at 0900, it was discovered that the excore QPTR for the upper section of the core was 3% and the lower section was 6%. Reactor Engineering was notified for investigation. At 1400 SG chemistry limits were lifted and power ascension was commenced to approximately 48% reactor power in order to help reduce the incore QPTR as recommended by the fuel vendor. While calculating the HFCs as required by TS 3.2.6.i, the flux map computer malfunctioned which prevented Reactor Engineering from completing the HCF calculations within the initial 24 hour period.

Discussions were held with plant management on the course of action to take at this time. It was determined that Unit 3 would be held to below 50% power until the HCFs were determined. At 1355 on December 24, 1987, the calculations of the HCFs were completed which verified that the design HCFs had not been exceeded. Prior to this event, the plant was already planning to perform a full recalibration of all four NIS channels and remeasure incore radial tilt prior to increasing reactor power above 50%. The TS requirements were met because the reactor was in initial power ascension, the High Flux trips were already preset at 80% power, the reactor power was well below the limiting power for the QPTR, and the HCF were within their limits.

On December 25, 1987, unit 3 experienced a subcritical reactor trip (LER 250-87-033) during a manual reactor shutdown due to pressurizer control problems. Unit 3 was placed back on the line at 0535 on December 27, 1987. Power escalation was stopped at 48% reactor power to allow the Instrumentation and Control (I&C) Department to install new NIS detector currents based on the flux maps performed at 50% power. At 0615 on December 29, 1987, I&C completed the NIS current calibrations and the excore QPTR was verified to be below 1% which satisfied TS requirements and power escalation was commenced.

CAUSE OF EVENT:

The incore radial tilt was measured at greater than 2% during the Unit 3 continued escalation after refueling. This was not considered a highly significant condition considering the reactor power level, the effect of the control rod position and xenon on flux distribution, and the measured HCF being within their limits. The Westinghouse core designers were notified of the condition. The Turkey Point current Technical Specifications do not provide clear guidance on the applicability modes for QPTR. It was interpreted that the QPTR requirements did not apply below 50% reactor power. However, the QPTR requirements must be satisfied before escalating above 50% power.

CORRECTIVE ACTIONS:

- 1) The Plant stayed well below the limiting power for the excore QPTR value, the high flux trip setpoints were already set at 80%, and the HCF were within their limits.
- 2) New NIS detector calibration currents were calculated using the 50% power flux maps. The NIS detectors were calibrated based on the new currents and the excore QPTR was calculated and found to be within TS limits.

