ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8802170173 DOC.DATE: 88/02/04 NOTARIZED: NO DOCKET #
FACIL:STN-50-529 Palo Verde Nuclear Station, Unit 2, Arizona Publi 05000529
AUTH.NAME AUTHOR AFFILIATION
VAN BRUNT,E.E. Arizona Nuclear Power Project (formerly Arizona Public Serv
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards util response to NRC questions re Cycle 2 reload, per 870113 telcon.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: OR Submittal: General Distribution

NOTES:Standardized plant. 05000529

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD5 LA	1	0	PD5 PD	5	5
	LICITRA,E	1	1	DAVIS,M	1	1
INTERNAL:	ACRS	6	6	ARM/DAF/LFMB	1	0
	NRR/DEST/ADS7E4	1	1	NRR/DEST/CEB8H7	1	1
	NRR/DEST/MTB	1	1	NRR/DEST/RSB	1	1
	NRR/DOEA/TSB	1	1	NRR/PMAS/ILRB	1	1
	OGC 15-B-18	1	0	REG FILE 01	1	1
	RES/DE/EIB	1	1			
EXTERNAL:	LPDR	1	1	NRC PDR	1	1
	NSIC	1	1			
NOTES:		1	1			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 28 ENCL 25

R I D S / A D D S

R I D S / A D D S

Arizona Nuclear Power Project
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

Docket No. STN 50-529

February 4, 1988
161-00785-EEVB/PGN

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

ATTN: Document Control Desk

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 2
Cycle 2 Reload Questions
File: 88-056-026

Reference: Telecon between Manny Licitra (NRC), Larry Kopp (NRC), Carter Rogers (ANPP), Jeff Riedesel (ANPP), and Peggy Nelson (ANPP) on January 13, 1987. Subject: Unit 2-Cycle 2 Reload Questions.

Attached please find ANPP's response to the questions provided by the Reference 1 telecon.

If you have any questions or require additional information, please call A. C. Rogers at (602) 371-4087.

Very truly yours,

E. E. Van Brunt, Jr.
Executive Vice President
Project Director

EEVB/PGN/jlm

Attachments

cc: O. M. De Michele (all w/a)
A. C. Gehr
G. W. Knighton
E. A. Licitra
J. B. Martin
J. R. Ball

A001
1/1

P559091956

NRC QUESTIONS ON PALO VERDE

UNIT 2 CYCLE 2 RELOAD AND ASSOCIATED TECH SPEC CHANGES

QUESTION #1

Which low power events were reanalyzed due to a higher allowable azimuthal tilt? Why are these still bounded by the reference analysis?

ANPP RESPONSE

The CEA ejection, CEA withdrawal and Part Length CEA drop analyses have been reevaluated due to a higher allowable azimuthal tilt. Only those analyses which involve parameters (e.g.. single rod worths) which depend on the local flux level require explicit reconsideration due to the increase in allowed azimuthal tilt.

The higher allowable azimuthal tilt would not impact other analyses. The DNBR and Linear Heat Rate margin LCO's which restrict the initial conditions as well as the CPC DNBR and Local Power Density trips credited in these analyses automatically accommodate the higher tilt.

The rate of approach to the DNBR Safety Analysis Fuel Design Limit (SAFDL) is important to the results of the safety analyses because of sensor lags and the time required to insert CEA's after a trip signal is generated. An evaluation was performed to verify that the rate of approach to the DNB SAFDL would be no worse than previously considered.

Core design differences between Cycle 2 and the reference cycle (Cycle 1) resulted in less severe consequences for the CEA ejection, CEA withdrawal and Part Length CEA drop analyses in Cycle 2 relative to the reference cycle even with consideration of the higher azimuthal tilt limit. Therefore, the reference cycle analyses are bounding.

QUESTION #2

T. S. 3.2.3 requires the tilt allowance to be adjusted to greater than or equal to the measured tilt value when the measured value exceeds the CPC allowance but is within the limits of proposed Figure 3.2-1A.

Why is the CPC tilt allowance not adjusted when the measured tilt exceeds the limits in Figure 3.2-1A?

NRC QUESTIONS ON PALO VERDE

UNIT 2 CYCLE 2 RELOAD AND ASSOCIATED TECH SPEC CHANGES

ANPP RESPONSE

In order to assure conservatism in the CPC's, the CPC tilt allowance should be adjusted to greater than or equal to the measured tilt no matter how large the measured tilt is. This issue is independent of the change requested for Unit 2 Cycle 2 since all PVNGS plant Technical Specifications currently include the phrase in question. Action a. of 3.2.3 should apply in all cases that the measured tilt exceeds the CPC tilt allowance, not just when the measured tilt is less than the limits specified in Action b. ANPP will revise the operating procedures to ensure that the azimuthal power tilt will be less than the allowance used in the CPC's.

ANPP further proposes to provide more restrictive limits on azimuthal power tilt for Tech Spec 3.2.3 which will explicitly require that the azimuthal power tilt be less than the allowance used in the CPC's at all times.

QUESTION #3

Why are the consequences of an uncontrolled CEA withdrawal from low power or subcritical conditions still bounded by the reference analysis even with a more positive MTC?

ANPP RESPONSE

In the reference cycle, the uncontrolled CEA withdrawal from low power or subcritical conditions was analyzed with an MTC of $+0.5 \times 10^{-4}$ delta rho/ deg. F which is more restrictive than the Tech Spec limit. The Tech Spec limit on MTC for Cycle 1 for Units 1, 2, & 3 was $+0.22 \times 10^{-4}$ delta rho/ deg F. Because the most positive allowed value of MTC has not been increased beyond the value used in the reference cycle analysis, there were no adverse consequences due to this change.

Core design differences between Cycle 2 and the reference cycle (Cycle 1) resulted in less severe consequences for this event in Cycle 2 relative to the reference cycle. Therefore, the reference cycle analysis is bounding.

NRC QUESTIONS ON PALO VERDE

UNIT 2 CYCLE 2 RELOAD AND ASSOCIATED TECH SPEC CHANGES

QUESTION #4

The most negative allowed value of MTC has been decreased to $-3.5x10^{-4}$ from $-3.0x10^{-4}$. Since not specifically mentioned in the Technical Specification Amendment Request, please verify that all events which are adversely affected by a negative MTC were analyzed with $-3.5x10^{-4}$.

ANPP RESPONSE

All events were initially analyzed with $-3.5x10^{-4}$ delta rho/ deg F (CESSAR 15.0.3.3.2). During initial testing on Unit 1, a concern was raised over the location of the safety injection line drains and its effect on safety analysis assumptions. The larger dilution volume which resulted was compensated for by using a reduced value of MTC ($-3.0x10^{-4}$ delta rho/ deg F) in the Steam Line Break analysis.

A Tech Spec change request was submitted for Unit 1 to reduce the lower MTC limit to $-3.0x10^{-4}$ delta rho/ deg F to reflect the assumptions used in the Steam Line Break analysis. Before this change was approved by the staff, the drain line was relocated. As a result, the Tech Spec change was no longer necessary and was withdrawn.

The lower limit of $-3.0x10^{-4}$ delta rho/ deg F on MTC was incorporated in the initial submittal of the Unit 2 Technical Specifications under the assumption that the drain line relocation for Units 2 & 3 would be performed at the first refueling outage. In reality, the drain line relocation was performed for Units 2 & 3 prior to the initial start-up of each unit. The Tech Spec limit of $-3.0x10^{-4}$ delta rho/ deg F on MTC was never changed back to the original value assumed in CESSAR ($-3.5x10^{-4}$ delta rho/ deg F).

In the reference cycle, all the events which are adversely affected by a negative MTC were analyzed based on an MTC of $-3.5x10^{-4}$ delta rho/ deg F which is more restrictive than the Tech Spec limit. Because the most negative allowed value of MTC has not exceeded this value, there were no adverse consequences due to this change.

NRC QUESTIONS ON PALO VERDE

UNIT 2 CYCLE 2 RELOAD AND ASSOCIATED TECH SPEC CHANGES

QUESTION #5

Figure 3.1-1A, which is referenced in the CEA drop analysis, is the Technical Specification shutdown margin figure. Should the reference be Figure 3.1-2A (Core Power Limit after CEA deviation)?

ANPP RESPONSE

Yes. The RAR CEA drop analysis should refer to Figure 3.1-2A (Core Power Limit after CEA deviation) in Section 7.4.3.3.