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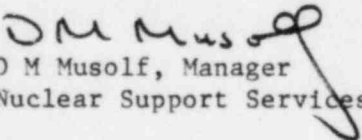
January 31, 1983

Director
Office of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Supplement Information for the Review of the NSP
Safety Evaluation Methods Topical - COBRA-IIIC/MIT - Correction

Please replace the attachment to the January 28, 1983 letter with the enclosed attachment. Data was missing from the Locked Rotor Analysis Table on page one.


D M Musolf, Manager
Nuclear Support Services

DMM/TMP/dab

cc Regional Admin-III, NRC
NRR Project Mgr, NRC
NRC Resident Inspector
G Charnoff

Attachment

A001

Not all of the local parameters can be corrected to the FSAR value since some of these are not shown. However, by correcting the few variables shown above, the MDNBR results show better agreement with the FSAR indicating the deviations in the original calculation of MDNBR were due to the DYNODE-P input and not in the COBRA IIIC/MIT code. Note that in the Slow Rod Withdrawal case the initial DNBR calculations in the FSAR disagree by approximately 0.07 with both that calculated by COBRA IIIC/MIT and also with the initial values from all other transients shown in the FSAR. This indicates a probable error in Figure 14.1-9 of the FSAR. If this bias of -0.07 is applied to the NSP revised calculation, the MDNBR becomes 1.464 which is in better agreement with the FSAR value of 1.36. Also, the FSAR calculations were probably run with a single channel model. Figure 3.2-8 of reference 1 shows a difference of approximately -0.07 between the single channel model and the 1/8 assembly model MDNBR. If this bias is applied to the revised calculation, it brings the MDNBR value down to 1.394 which is in good agreement with the FSAR number.

REFERENCES

1. Prairie Island Nuclear Power Plant "Reload Safety Evaluation Methods for Application to PI Units," NSPNAD-8102P Rev 1, December 1, 1982.
2. Northern States Power Company, Prairie Island Nuclear Power Plant, Final Safety Analysis Report.

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION ON NSPNAD-8102P

The following Locked Rotor and the Slow Rod Withdrawal transients were rerun, with respect to MDNBR, using input parameters, to COBRA IIIC/MIT, which better represent the local conditions calculated in the FSAR. The following results were obtained using an 1/8 assembly COBRA model⁽¹⁾ run in a psuedo steady state mode at the point of minimum DNBR in the transient.

LOCKED ROTOR ANALYSIS

	Reference ⁽¹⁾ Calculation	Revised Calculation	FSAR ⁽²⁾
Pressure (psia)	2410	2740	2740
Heat Flux (MBtu/hr ft ²)	0.2317	0.2317	-
Inlet Temperature (°F)	540.0	540.0	-
Inlet Flow (Mlbm/hr ft ²)	1.124	1.124	-
MDNBR	1.068	1.375	1.30

SLOW ROD WITHDRAWAL ANALYSIS

	Reference ⁽¹⁾ Calculation	Revised Calculation	FSAR ⁽²⁾
Pressure (psia)	2326	2355	2355
Heat Flux (MBtu/hr ft ²)	0.2821	0.3264	0.3264
Inlet Temperature (°F)	541.7	541.7	-
Inlet Flow (Mlbm/hr ft ²)	2.400	2.400	-
MDNBR	1.691	1.534	1.36
Initial DNBR	1.891	1.891	1.82