CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9811130246 DOC.DATE: 98/11/06 NOTARIZED: NO DOCKET #
FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
AUTH.NAME AUTHOR AFFILIATION
ABBOTT,R.B. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
Records Management Branch (Document Control Desk)

SUBJECT: Submits response to NRC RAI re P-T curve submittal & reactor pressure vessel matls.

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

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-1 LA	1	1	PD1-1 PD	1	1
	HOOD,D	1	1			
INTERNAL:	ACRS	1	1	FILE CENTER 01	1	1
	NRR/DE/ECGB/A	1	1	NRR/DE/EMCB	1	1
	NRR/DRCH/HICB	1	1	NRR/DSSA/SPLB	1	1
	NRR/DSSA/SRXB	1	1	NUDOCS-ABSTRACT	1	1
	OGC/HDS3	1	0			
EXTERNAL:	NOAC	1	1	NRC PDR	1	1

CATEGORY 1 DOCUMENT

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

Niagara Mohawk

Richard B. Abbott
Vice President
Nuclear Engineering

Phone: 315.349.1812
Fax: 315.349.4417

November 6, 1998
NMP1L 1377

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

RE: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Subject: ***Pressure-Temperature Curves***

Gentlemen:

By letter dated June 19, 1998, Niagara Mohawk Power Corporation (NMPC) requested approval of a Technical Specification (TS) Amendment Application which would revise the Nine Mile Point Unit 1 (NMP1) pressure-temperature (P-T) curves. Attachment D to this application, MPM-59838, "Pressure Temperature Operating Curves for Nine Mile Point Unit 1," describes the analyses performed to determine the revised P-T limits. Following completion of MPM-59838, NMPC performed additional neutron transport calculations to accurately determine the shroud fluence and to resolve a discrepancy between the Fe and Ni dosimeters. The details of these transport calculations are given in report MPM-108679, "Nine Mile Point Unit 1 Shroud Neutron Transport and Uncertainty Analysis," which was submitted to the NRC on October 22, 1998. MPM-108679 also contains revised calculations for the 210 degree surveillance capsule and for the reactor pressure vessel. These latest calculations have demonstrated that the calculated fluxes at the capsule and in the vessel are lower than previously calculated. As a result, the P-T curves submitted in our June 19, 1998 Amendment Application are conservative by 8.3 degrees Fahrenheit. During recent communications with the NRC, the Staff requested that NMPC provide additional information regarding our P-T curve submittal and the reactor pressure vessel materials. This letter satisfies the Staff's request.

1/1

A001

The impact of report MPM-108679 on the limiting Adjusted Reference Temperature (ART) determination is shown in attached Tables 4-1, 4-2, and 4-4. These Tables were used to disposition the new fluence values and demonstrate that the P-T curves found in report MPM-59838 are conservative. As shown in Table 4-1, the 30 degree and 210 degree capsule measured shifts are within one sigma of the predicted shifts and the measured data are less than the predicted values. The 300 degree capsule measured shift is 19 degrees Fahrenheit above the predicted value. This measurement is only 2 degrees Fahrenheit higher than the 17 degree

Fahrenheit one sigma value. Based on the fact that the 30 and 210 measured data are below the predicted values, and the fact that the 300 degree point is very close to the one sigma limit, NMPC has concluded that Regulatory Guide (RG) 1.99, Revision 2, data credibility criteria have been met and by engineering judgement, has concluded that the three capsule data points are credible.

The applicability of the RG 1.99, Revision 2 model to the NMPC beltline plate G-8-1 is illustrated in Table 4-2. The 30 and 210 degree measured shifts are one sigma below the RG model shift +34 prediction and the 300 degree capsule point is only 6 degrees Fahrenheit higher than the RG model shift +34 prediction. Accordingly, NMPC has concluded that the RG model shift +34 is a bounding model for NMP1.

Dispositioned Table 4-4 shows that the highest ART calculated using the MPM-108679 fluences, with the full margin of 34 degrees Fahrenheit for the beltline plates, is conservatively less than the 167.7 degree Fahrenheit ART (plate G-307-4/5) used in the P-T curve TS Amendment Application. Although Table 4-4 shows plate G-8-1 as the limiting material, application of the reduced margin of 17 degrees Fahrenheit (for credible surveillance data), results in plate G-307-4/5 remaining the limiting material. In conclusion, the P-T curves submitted on June 19, 1998 remain bounding.

Very truly yours,

Richard B. Abbott
Vice President – Nuclear Engineering

RBA/JMT/kap
Attachments

xc: Mr. H. J. Miller, NRC Regional Administrator
Mr. S. S. Bajwa, Director, Project Directorate I-1, NRR
Mr. G. K. Hunegs, Senior Resident Inspector
Mr. D. S. Hood, Senior Project Manager, NRR
Records Management

Table 4-1 Surveillance Data Credibility Assessment for Plate G-8-1

Capsule Identification	Fluence (n/cm^2)	Fluence Factor (FF)	Measured ΔRT_{NDT} (F)	Predicted ΔRT_{NDT} (Surveillance CF) (F)	Measured ΔRT_{NDT} Minus Predicted ΔRT_{NDT} (F)
30°	3.60×10^{17}	0.244	54.0	55.71	-1.71
210°	9.00×10^{17}	0.396	77.7	90.43	-12.73
300°	4.78×10^{17}	0.286	84.4	65.30	19.09

(Old CF=221.26, New CF=228.355)

Table 4-2 RG1.99(2) Table CF Applicability Analysis for Plate G-8-1

Capsule Identification	Fluence (n/cm^2)	Fluence Factor (FF)	Measured ΔRT_{NDT} (F)	Predicted ΔRT_{NDT} + 34 F (RG1.99(2) Table CF) (F)	Measured ΔRT_{NDT} Minus Predicted ΔRT_{NDT} + 34 F (F)
30°	3.60×10^{17}	0.244	54.0	71.56	-17.56
210°	9.00×10^{17}	0.396	77.7	94.96	-17.26
300°	4.78×10^{17}	0.286	84.4	77.98	6.42

(Table CF=153.95)

Table 4-4 Analysis of NMP-1 Beltline Materials at 28 EFPY to Identify Limiting ART

Material ID	1/4 T Fluence (n/cm^2)	RG1.99 Fluence Factor (FF)	Cu Content (wt %)	Ni Content (wt %)	RG 1.99 Chemistry Factor (CF) (F)	RG 1.99 Source of CF	Initial RT_{NDT} (TL) (F)	ΔRT_{NDT} (F)	Margin (F)	ART (F)
Plate G-307-4/5	1.31×10^{18}	0.473	0.27	0.53	173.85	Table	40	82.3	34	156.3
Plate G-307-3	1.31×10^{18}	0.473	0.20	0.48	134.60	Table	28	63.7	34	125.7
Plate G-307-10	1.31×10^{18}	0.473	0.22	0.51	148.85	Table	20	70.4	34	124.4
Plate G-8-1 [a]	8.78×10^{17}	0.391	0.23	0.51	228.35	Surveillance Data	36	89.3	34	159.4
Plate G-8-3/4 [a]	8.78×10^{17}	0.391	0.18	0.56	130.20	Table	-3	50.9	34	81.9
Weld Seam 2-564 A/C	1.31×10^{18}	0.473	0.22	0.20	112.0	Table	-50	53.0	56	59.0
Weld Seam 2-564 D/F	1.31×10^{18}	0.473	0.22	0.20	112.0	Table	-50	53.0	56	59.0
Weld Seam 3-564	1.31×10^{18}	0.473	0.22	0.20	112.0	Table	-50	53.0	56	59.0

[a]The fluence to the lower shell course plates is lower than that of the upper shell plates because the axial flux peak is above the core midplane.