REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8210130107 DOC.DATE: 82/10/05 NOTARIZED: NO DOCKET #
FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
AUTH.NAME AUTHOR AFFILIATION
MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Submits addl info to 820927 ltr re analysis criteria for recirculation sys piping replacement.Reanalysis criteria provides same margin as original criteria.High energy line break would not affect engineered safeguard sys.

DISTRIBUTION CODE: A001S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 3
TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
	NRR ORB2 BC	01	7	7				
INTERNAL:	ELD/HDS3		1	0	NRR/DHFS DEPY	08	1	1
	NRR/DL DIR		1	1	NRR/DL/ORAB		1	0
	NRR/DSI/RAB		1	1	REG FILE	04	1	1
	RGN1		1	1				
EXTERNAL:	ACRS	09	6	6	LPDR	03	1	1
	NRC PDR	02	1	1	NSIC	05	1	1
	NTIS		1	1				

TOTAL NUMBER OF COPIES REQUIRED: LTTR 24 ENCL 22

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

October 5, 1982

Mr. Darrell G. Eisenut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

Dear Mr. Eisenhut:

Our letter of September 27, 1982 provided information regarding our plans for removal and replacement of the reactor recirculation piping. Additional information has been requested by members of your staff and is provided herein.

Analysis Criteria for Recirculation System Piping Replacement

Our referenced letter indicated that we would redo the stress analysis prior to start-up using the as-built configuration consistent with the requirements of the 1955 Edition of the ASA B31.1 Power Piping Code. We further indicated the equations presented in the 1977 Edition through Winter 1979 Addenda of the ASME B&PV Code, Section III, Subsection NC, Subsubarticle NC-3650 would be utilized. In addition, it was stated the allowable stress would be extracted from the 1955 Edition of ASA B31.1 for comparable materials. Our current plans are for the re-analysis to use the allowable stress values for the replacement piping material (316 NG or equivalent, with a carbon content of less than 0.02 percent meeting material strength requirement of 316) as presented in the referenced ASME Code. Use of the equations and allowable stress values presented in the referenced ASME Code provides a consistent basis for evaluating the design of the recirculation piping system. In summary, the re-analysis will be performed as follows:

A001

1. General Criteria

   - ASME Boiler and Pressure Vessel Code, Section III
   - 1977 Edition through Winter 1979 Addenda
   - Subsubarticle NC-3650

2. Specific Criteria

   The following specific criteria will be applied in the analysis phase of the recirculation system piping replacement.

   a. The effects of design pressure and deadweight will meet the following:

$$S_{SL} = \frac{P_D D_O}{4t_n} + 0.75\ i\ \frac{M_A}{Z} \leq 1.0 S_h$$

   b. The effects of operating pressure, deadweight and seismic* will meet the following:

$$S_{OL} = \frac{P_{max}\ D_O}{4t_n} + 0.75\ i \left(\frac{M_A + M_B}{Z}\right) \leq 1.2 S_h$$

   c. The effects of thermal expansion will meet the following:

$$S_E = \frac{i\ M_c}{Z} \leq S_A$$

   or

$$S_{TE} = \frac{P_D D_O}{4t_n} + 0.75\ i\ \frac{M_A}{Z} + i\ \frac{M_c}{Z} \leq (S_h + S_A)$$

3. Original plant design piping analysis criteria

   a. General Criteria

      - ASA B31.1 - 1955

   b. Specific Criteria

      - Seismic Loading $\leq 1.2\ S_h$
      - Thermal Expansion $\leq S_A$

---

* Seismic analysis is performed using original seismic input which is ground motion spectra.

4. Comparison of original criteria and re-analysis criteria

The re-analysis criteria essentially provides the same margin as the original criteria. Direct comparison between the original criteria and the proposed re-analysis criteria is not feasible due to 1) calculational model changes, 2) allowable stress changes and; 3) code interpretations. The re-analysis criteria will be more specific with respect to the following:

- Calculation of sustained load stresses
- Calculation of occasional load stresses
- Load combination, particularly as related to seismic loading
- Use of stress intensification factors
- Allowable stress for the replacement piping material

Affect of Stress Re-Analysis on Pipe Break Analysis

Our letter of June 12, 1979 provided additional information regarding I.E. Bulletin 79-07. It indicated that the re-analysis performed in response to I.E. Bulletin 79-07 had no affect on our pipe break analysis. That analysis (presented as response to question 10 of Amendment No. 1 to the Technical Supplement to Petition for Conversion from Provisional Operation to Full Term Operating License) assumed that any of the high energy lines could break anywhere inside the primary containment. It concluded if a break did occur, the engineered safeguard systems would still perform their intended functions due to redundancy and separation. The basis for that conclusion will not be affected by the proposed stress re-analysis discussed above.

Man-Rem Exposure Estimates

Our letter of September 27,1982 provided our current exposure estimate for the recirculation system piping and safe-end replacement programs. The Task Track Report is being revised to reflect the additional work scope associated with the recirculation piping replacement program. It will be available for review prior to initiation of piping replacement activities.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan, Vice President
Nuclear Engineering & Licensing