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September 30,1983
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Office of Nuclear Reactor Regulation
Attn: J. F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
Comments on NRC SER Concerning TMI-1
Steam Generators Repair

This letter is intended to convey GPUN's response to your August 25 safety evaluation on TMI-1 return to service with repaired steam generators. Attachment 1 to this letter documents GPUN actions on confirmatory items in your SER. Attachment 2 is a list of GPUN comments on the Staff SER.

We hope these items will support preparing the scheduled supplement to your SER.

Sincerely,

H. D. Hukill
Vice President - TMI-1

cc: H. Silver

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Attachment 1

GPUN Actions on Confirmatory Items

Section	Page, Paragragh		Item/Response
4.3.1	39(2nd)	Item:	"...an updated TDR 406 confirming the modifications discussed above and containing acceptable documentation of the analytical justifications for these modifications is submitted prior to restart."
		Response:	TDR 406, Rev. 2 is enclosed. Supporting references and procedures have been made available to members of your staff.
4.3.2	42(item 5)	Item:	Reactor Coolant Pump NPSH for Emergency Operations, "The licensee should insure that the copy for Control Room use is clear and legible".
		Response:	The Controlled Copy of the approved and formally issued 1202-5 has clear and legible copies of the NPSH curves. A copy of the procedure has been made available for review by members of your staff.
4.3.2	43(item 7)	Item:	S/G Isolation/Steaming Criteria, "...the licensee will make a change for SG isolation from a dose to dose rate criteria."
		Response:	The Controlled Copy of the approved and formally issued 1202-5 has dose rate rather than dose isolation criteria. A copy of the procedure has been made available for review by members of your staff.
4.3.2	43-44(item 8)	Item:	Pressure Control of Isolated SGs - "The licensee states that instructions for controlling pressure in an isolated SG are planned for inclusion in EP 1202-5".
		Response:	Although the subject of this quote is feeding an isolated OTSG for pressure control, the SER mistakenly refers to "steaming" an isolated SG in the sentence before the quote.

GPUN Comments on NRC SER (NUREG-1019)

Section	Page, Paragraph	Item/Comment
2	2(bottom) -3 (top)	Item: 22" expansion.
		Comment: This paragraph gives the impression that a 22" expansion was performed in each tube. As discussed in TR-008, a 22" expansion was used for tubes where the lowest defect was too low to be repaired by a 17" expansion.
3.1	8 (top)	Item: "The thiosulfate tanks have also been physically removed."
		Comment: The thiosulfate tank has been physically removed from communication with the reactor coolant system by cutting the connecting lines and sealing them with blind flanges, but the tank has not been physically removed from the plant.
3.2	9 (2nd)	Item: "The extent of corrosion was quantified and all corrosion affected sections in the waste gas system have been replaced."
		Comment: As discussed in our June 6 update on LER 82-02, all unacceptable corrosion affected sections of the waste gas system have been replaced. Minor indications were placed on an augmented inspection list. In addition, some surface corrosion and/or corrosion products may still be present.
3.2	13 (top)	Item: "...the PORV and safety relief valves, which exhibited pitting corrosion, were replaced".
		Comment: As discussed in our June 6 update to LERs 82-11 and 83-03, the PORV internals and safety relief valves were replaced. The PORV body was cleaned and inspected, then returned to service. The PORV internals were made of a number of materials some of which exhibited general corrosion and IGSCC as well as pitting corrosion. In addition the safety valves were replaced due to new ring settings not due to corrosion.
		Item: "The waste gas system was found to be affected, and all corroded portions of this system were replaced."
		Comment: See comment for p. 9, section 3.2.

Section	Page, Paragraph		Item/Response
			TDR 406, Rev. 2 no longer recommends feeding an isolated OTSG for pressure control (see last item of Summary of Change, page 9 of 74 TDR 406, Rev. 2). It should be noted, however, that due to an editing error a reference to this form of OTSG pressure control still exists in section 3.2.4 page 30 of 74. This error will be corrected with the next revision to TDR 406. EP 1202-5 reflects the revised TDR 406, Rev. 2.
4.3.2	44(item 9)	Item:	SG Shell to Tube Differential Temperature Limit. "The licensee will be required to clarify procedural action for Delta T's in excess of 100°F."
		Response:	The Delta T limit in the procedure is 70°F. If this limit is approached the guidance in 1202-5 does require that the cooldown rate be reduced or secured so as not to exceed 70°F. The guidance for a 100°F Delta T has been removed from TDR 406, Rev. 2 (see abstract and section 3.2.2.3 of TDR 406, Rev. 2). It should be noted, however, that due to an editing error, section 5.2.9 still contains the confusing second reference to a 100°F limit. This error will be corrected with the next revision to TDR 406. EP 1202-5 reflects the revised guidance in TDR 406, Rev. 2.

Section	Page, Paragraph		Item/Comment
3.3	15(table)	Item:	Table 3.3-1.
		Comment:	The numbers of tubes listed in the last two columns are approximations only. In some cases more were done in the baseline and will be repeated after 90 days. In some cases fewer were done because the population of tubes in that category was less than shown in the table due to plugging of adjacent tubes or the tubes location in the periphery.
3.3	16 (top)	Item:	"As early as feasible in post critical operation, the licensee shall confirm the baseline primary-to-secondary leakage rate, and establish the minimum increase in such leakage rate which can reliably be measured (expected to be about .1gpm) . If leakage exceeds the baseline leakage rate by that minimum increase, the plant shall be shut down and leak tested".
		Comment:	As discussed in TR-008, GPUN has established .1 gpm as an administrative limit on leakage above baseline. This leakage rate is detectable.
3.4.1.b	16(bottom)	Item:	Planned testing.
		Comment:	The second phase of testng is complete and results have been reported in TR-008, Rev. 3. Assessment of the joint for the full 35 year design life will be performed when data on actual steam generator performance is available to supplement the results of the 5 year and 15 year test programs. No additional testing is planned prior to the startup after the first refueling outage.
3.4.1.c	17 (top)	Item:	"This objective assures that compressive loads during operation and vibrational characteristics of the tube will remain unchanged."
		Comment:	As stated in TR-008, only the maintenance of vibrational characteristics is an objective. It is also a goal that the tubes not be in compression when cold.

Section	Page, Paragraph		Item/Comment
3.4.2.d	20(3rd)	Item:	"...the 1025 pounds necessary to cause tube bowing."
		Comment:	As discussed in TR-008 and our letter of August 3, tube bowing begins at approximately 800 lbs, but loads must reach 1025 lbs before the lateral displacement of the tube exceeds the nominal size of the space between tubes.
3.4.2.d	21(4th)	Item:	"...1.0 ksi $in^{1/2}$."
		Comment:	Calculations were done at 4.0 ksi $in^{1/2}$.
3.4.2.d	21(bottom)	Item:	Stable cracks.
		Comment:	This paragraph may need revision based on TR-008,. Rev. 3.
3.4.2	23(bottom)	Item:	"The Staff will condition the license to require submittal of the extended life cycle program qualification test results by Startup after the first regularly scheduled refueling after restart."
		Comment:	See comments for p. 16, section 3.4.1.b.
3.5	28-29	Item:	Cleanup of Contaminant
		Comment:	Some parameters throughout in this section may need to be updated to reflect actual chemical cleaning as discussed in TR-008, Rev. 3.

Boron (boric acid)	1800-2300 ppm
pH (ambient temperature)	8.0-8.5
H_2O_2 concentration	15-25 ppm
Temperature	130°F ± 5°F
Cover Gas	N_2 (pzr)
Lithium ion concentration	1.8-2.2
Duration of Treatment	400 hrs.

Testing using samples prior to beginning cleaning monitored performance through 500 hrs.

3.6	30(item 2)	Item:	"All RCS piping..were flushed..."
		Comment:	All RCS piping with a diameter greater than 1" was flushed.

Section	Page, Paragraph		Item/Comment
3.6	30(item 4)	Item:	"The coolant will be...monitored continuously for pH and conductivity."
		Comment:	Per TR-008, as recorded in your Table 3.6-1, these parameters will be monitored five times per week.
3.6	31(table)	Item:	Table 3.6-1.
		Comment:	There are several differences in Table 3.6-1 from our plans as outlined in TR-008.

Parameter	Old Limit	New Limit
Lithium	0.2-2.0(ppm)	1.0-2.0(ppm)
Chlorides	0.15(ppm)	0.10(ppm)
Sodium	None	0.1 (ppm)

3.8	33-35	Item:	Occupational Dose Assessement.
		Comment:	Final man-rem exposures and final numbers of tubes plugged are recorded in TR-008, Rev. 3.
4.3.1	39(2nd)	Item:	"This dose corresponds to levels prescribed in 10CFR, Part 20..."
		Comment:	This dose corresponds to emergency plan action levels.
4.3.2	41(item 1)	Item:	"...a 50-gpm leak rate criterion...corresponds to the complete separation of one tube."
		Comment:	A 50-gpm leak rate is approximately 10% of the leakage from a complete separation (double ended tube rupture) of one tube. The criterion corresponds to emergency plan action levels.
5.2	46	Item:	License Conditions 4 and 5.
		Comment:	See comments for page 16, section 3.3. and page 16, section 3.4.1.b.