UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 26 1979

MEMORANDUM FOR: V. S. Noonan, Chief
Engineering Branch
Division of Operating Reactors

FROM: K. S. Herring
Engineering Branch
Division of Operating Reactors

THRU: B. D. Liaw Section B Leader
Engineering Branch
Division of Operating Reactors

SUBJECT: TRIP REPORT: GETR SITE VISIT

On June 18, 1979, myself, J. Martore and H. Polk visited the site of the General Electric Test Reactor (GETR). The purpose of this visit was to familiarize J. Martore and H. Polk (who have recently been assigned to the task for the GETR review) with the site, and to review the layouts of the completed and the proposed modifications for the seismic upgrade of the facility.

The day was spent viewing in detail the modifications being made to the primary heat exchanger, the primary piping system, the reactor pool drain lines, the missile impact system for the protection of the reactor vessel and the fuel storage canal, the spent fuel storage tanks, and the reactor vessel modifications. Additionally, the conceived layout of the fuel flooding system was studied both inside and outside of the containment, including actual hardware consisting of the flexible hose, the shield pipe and the valve cabinets. The tour was conducted by D. Heggett of the General Electric Company, with some specific details being provided by GE personnel responsible for the completion of various aspects of the modifications.

As a result of the site visit, the following questions were posed to GE:

(1) Provide the details of the evaluations of the effects of the impact of the stack, or any credible portion of the stack, and all of the cooling tower hardware on the fuel flooding system supply lines.

(2) Regarding the screw jacks providing vertical support for the primary heat exchanger:

(a) Justify that it is not necessary to provide a locking mechanism (e.g. lock nuts).

(b) Discuss how impact loads were considered in the design of these supports to resist earthquake loadings since they are capable

of resisting only compressive forces and verticle deflections due to upward loading may create gaps between the heat exchange and the jacks.

(c) Discuss in detail the installation procedures for these jacks, including the significance of any precompression and how the magnitude of this precompression was determined.

(3) Indicate any systems inside the containment building which will have to be moved to accommodate the installation of the fuel flooding system and describe in detail the nature of the required modifications.

(4) Provide the deflection patterns and the deflections of the containment building under the maximum seismic loadings, including the consideration of buckling.

(5) Demonstrate that all modes of containment building failure will not impact the fuel flooding system penetrations.

(6) Discuss how base plate flexibility was considered in the design of additional supports and in the evaluation of original supports for all safety related systems, equipment and components.

(7) Provide the factors of safety assumed for all new and original concrete expansion anchor bolts used in the support systems for all safety related systems, equipment and components. Justify the adequacy of the factor(s) of safety.

(3) Provide the height above finished grade of the tops of the walls surrounding the water bladders for the fuel flooding system.

(9) Provide complete details of the automatic level sensing system for the fuel flooding system. Include a discussion of the confidence that can be placed on the functioning of this detection system and the basis for this confidence.

(10) Discuss the surveillance program which will be implemented on the components of the fuel flooding system to assure that they will have the required strength to function subsequent to a seismic event. Focus especially on deterioration of the fuel flooding system hoses and bladders.

(11) Verify that short threaded bolts on the primary piping restraints will be replaced prior to any restart of GETR.

(12) Attachment 1 indicates that during the installation of thirteen (13) out of fifty-six anchor bolts that rebar was encountered and drilled through. Additionally, at some other places it was noted that when rebar was encountered in drilling, the supports were relocated and holes redrilled without the plugging of the initially drilled holes.

Indicate the locations where holes were left unplugged. Discuss the effects of the drilling through of the rebar on the strength of the structure. Also, discuss the potential for and the consequences of moisture contacting the rebar (e.g., corrosion) in the holes containing anchors and in the unplugged holes on the strength of the structure, the anchor bolts, and the overall support. Provide the bases for your conclusions.

D. Haggett indicated that a formal response to these questions would be provided within two weeks of the date of the NRC site visit.

Kenneth S Herring

K. Herring
Engineering Branch
Division of Operating Reactors

Enclosure: As stated

cc: D. G. Eisenhut
B. K. Grimes
W. Gammill
J. P. Knight
L. Shao
C. Nelson
V. Noonan
B. D. Liaw
J. Martore
H. Polk

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Attachment 4

RESTRAINT INFORMATION

NUMBER OF ANCHORS	HOLES WHERE HOOK WAS GIVEN	RESTRAINT	GE-VNC DRAWINGS Assy	GE-VNC DRAWINGS Details	GENERAL DESCRIPTION
2	0	1-1	195F434	913E173 G1 913E173 G6	14" pipe clamp, double angle strut, channel wall pad
2	0	1-2	195F438	913E173 G1 913E173 G4	14" pipe clamp, double angle strut, channel wall pad
4	2	1-3	129D4599	153C4667 G2 129D4609 183C8001	Modified 14" pipe clamp for two restraints custom 2½" pipe strut, custom wall pad - 45°
4	0	1-4	129D4599	153C4667 G3 129D4609 183C8001	Modified 14" pipe clamp for two restraints, custom 2½" pipe strut, custom wall pad - 45°
2	0	1-5	195F440	153C4662 153C4666	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 45°
(4)	-	1-6	129D4543	153C4667 G2 183C8010	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 55°
(4)	-	1-7	129D4543	153C4667 G1 183C8000	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 45°
2	1	1-8 and 2-9	195F462	293A6005 17889879 17889880 17889888 153C4668 153C4675	TRAPEZE HANGERS - double 14" U-Bolt, custom saddle, 4x4 double angle trapeze, bolted friction joints, custom ceiling brackets.
4	2				
4	1	1-9 and 2-8	195F462	293A6005 17889879 17889880 17889888 153C4668 153C4675	TRAPEZE HANGERS - Double 14" U-Bolts, custom saddle, 4x4 double angle trapeze bolted friction-type joints, custom ceiling brackets.
4	2				
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2	0	1-11	195F440	153C4662 153C4666	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 45°
2	0	1-12	195F434	913E173 G1 913E173 G5	14" pipe clamp, double angle strut, channel wall pad
4	0	2-1	195F441	17889876 153C4665	Double 12" pipe clamps, custom 3" pipe strut, channel wall pad
4	2	2-2	195F441	153C4661 153C4664 G1	Double 12" pipe clamp, custom "T" strut, custom wall pad - 65°
4	0	2-3	195F437	153C4664 G2 913E173 G2	Double 14" pipe clamps, custom "T" strut, channel wall pad
4	0	2-4	195F436	913E173 G2 913E173 G3	Double 14" pipe clamps, double angle strut, channel wall pad
2	1	2-5	195F434	913E173 G1 913E173 G5	14" pipe clamp, double angle strut, channel wall pad
2	1	2-6	195F440	153C4662 153C4667 G1	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 45°
2	1	2-7	195F440	153C4662 153C4667 G1	14" pipe clamp, custom 2½" pipe strut, custom wall pad - 45°
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2	0	2-10	129D4563	[illegible]	14" U-Bolt, custom built saddle, 4" pipe strut to floor