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

Docket No.: 50-445

OCT 24 1984

Mr. M. D. Spence
President
Texas Utilities Generating Company
400 N. Olive Street
L. B. 81
Dallas, Texas 75201

Dear Mr. Spence:

Subject: Comanche Peak Steam Electric Station Containment Sump Performance

References: 1. TUGCO Letter #TXX-4239 dated July 26, 1984
(Schmidt to Youngblood)
2. TUGCO Letter #TXX-4298 dated September 10, 1984
(Schmidt to Youngblood)
3. TUGCO Letter #TXX-4337 dated October 12, 1984
(Beck to Youngblood)

Enclosed are requests for additional information related to your submittals on Containment Sump Performance, references 1 and 3 above. In addition, Mr. H. C. Schmidt of your staff, in discussions with the staff and in reference 2 above, agreed to prepare a revision of your June 1984 report, "Evaluation of Paint and Insulation Debris Effects on Containment Emergency Sump Performance," which would incorporate into a single document all revisions to analyses which have occurred since the original report submittal. We believe that satisfactory responses to the enclosed questions will conclude requests for additional information on this subject and it is appropriate to prepare your revision of the report at this time. Your responses and revision to your June 1984 report should be forwarded to the NRC no later than November 6, 1984. After your responses have been reviewed, a safety evaluation report will be prepared. This safety evaluation report along with the NRC Comanche Peak Review Team (TRT) findings will be presented in a future meeting.

COMANCHE PEAK

OCT 2 4 1984

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ENCLOSURE

REQUESTS FOR ADDITIONAL INFORMATION

(1) Your submittal of July 26, 1984, indicates that a potential area for accumulation of fines would be in the small valves and small bore orifices in the high head safety injection (SI) piping, but that the high head system is not required for post-accident recirculation. However, the high head system would be utilized in the event of a small break LOCA, when the RHR pumps are operated in series with the SI and/or centrifugal charging pumps. Therefore, discuss the effect of paint fines accumulation in the high head, SI orifices and throttle valves. Consider also the effect of paint fines accumulation in pump recirculation lines.

(2) State how cooling of the CPSES RHR pump shaft seals is accomplished. If cooling is provided from the pump discharge, provide the line size (if the flow is external to the pump) or passage size (if the flow is internal). If external lines are used, state whether they contain cyclone separators. Discuss the potential of plugging of these lines or passages by paint fines.

(3) State whether the information in your July 26, 1984 letter that the RHR pump hydraulic performance degradation due to paint fines "is negligible" has been verified by the pump vendor. Also discuss the effect of paint fines on the SI and centrifugal charging pumps during high head recirculation.

(4) Your July 26, 1984 letter indicates that Stokes' law was used to estimate the maximum size of paint fines that can be carried by vertical flow, and that spherical shapes were assumed for conservatism. However, an examination of Figure 5-70, "Drag Coefficients for Spheres, Disks and Cylinders," Perry's Chemical Engineers Handbook, Fourth Edition, indicates that for $Re>50$, this assumption is not conservative. Our calculation for the inlet plenum indicate that $Re>50$. Therefore, reconsider your assumption and make any necessary changes in your calculations with regard to particle shape.

(5) With regard to your October 12, 1984, submittal, discuss whether the calculated reactor vessel lower plenum velocity considers only unidirectional vertical flow or whether it also considers cross flow.

(6) Your July 26, 1984, submittal states that no credit is taken for settling out of debris in the containment building (Page 5). However, the maximum debris volume accumulating in the reactor vessel lower plenum is given as 400 cubic feet (Page 7). Clarify the apparent discrepancy between these two statements.

(7) Discuss what indication the operators would have that blockage is occurring in either the core or the ECCS, and what remedial action could be taken.

(8) Your conclusion in your October 12, 1984 submittal that the paint particles with diameter less than .019 inches will pass through the core because the minimum flow area in the core is .040 inches does not consider the case that the paint particles may be stuck on the grid strips and/or dimples. Provide a discussion on the consequences of the case where the paint particles may be stuck on the grid stripes and dimples. The discussion should include (a) accumulation of paint particles stuck on the strips and dimples, (b) the effects on local flow area reduction and flow degradation, (c) the effects on degradation of heat transfer effectiveness, especially in the hot spots and (4) the effectiveness of long term core coolability.

OCT 24 1984

If clarification of these requests for additional information is necessary, Ms. Annette Vietti, CP Technical Review Team Project Manager, is available to provide any additional information you need. Ms. Vietti's telephone number is (301) 492-4449.

Sincerely,

ORIGINAL SIGNED BY:

Vincent S. Noonan, Project Director
for Comanche Peak
Division of Licensing

Enclosure: As stated

cc: See next page

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10/23/84	10/23/84	10/24/84	10/23/84	10/24/84

Question #1-7

Question #8

RSB:DSI	RSB:DSI	CIB:DST
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