

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

TEXAS UTILITIES GENERATING
COMPANY, et al.

(Comanche Peak Steam Electric Station
Station, Units 1 and 2)

'84 SEP -4 110:41

Docket Nos. 50-445-1 C
and 50-446-1 C

CASE'S PARTIAL ANSWER TO APPLICANTS' STATEMENT OF MATERIAL FACTS
AS TO WHICH THERE IS NO GENUINE ISSUE REGARDING
DIFFERENTIAL DISPLACEMENT OF LARGE-FRAMED, WALL-TO-WALL
AND FLOOR-TO-CEILING PIPE SUPPORTS

in the form of

AFFIDAVIT OF CASE WITNESS MARK WALSH

It should be noted at the outset that Applicants state that the Affidavit addresses the Licensing Board's questions (see discussion on page 2 of the Iotti/Finnegan Affidavit). However, I challenge that statement. In order for Applicants to have adequately resolved the Board's questions, they should have included documentation of their claims. They did not. There is not one drawing, not one calculation, not one regularly used site document attached to their Affidavit.

In addition, Applicants have not adequately answered the Board's questions. On page 6 of Applicants Affidavit, Applicants attempt to answer the Board's first question, "how it came about that PSE violated its own design guidelines." As will be shown in the answers herein, the PSE Group

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did not have guidelines when these supports were originally designed. In addition, it is a code requirement to consider the effects of this type of support configuration, as will be shown in the answers herein. This is contrary to the statement provided in the Affidavit.

On page 7 of the Affidavit, Applicants attempt to answer the Board's second question, "how did this event (come) to be reflected in the design quality assurance system?" The response provided by the Applicants is a bunch of baloney. As will be shown herein, QC does not interface with design.

On page 7 of the Affidavit, Applicants attempt to answer the Board's third question, "whether this problem received prompt attention." As indicated herein, the Applicants informed the NRC Special Inspection Team (SIT) that these supports were unable to withstand differential seismic displacements and were being redesigned. This redesign and modification occurred one year after the Applicants claimed they knew of the problem. This is not prompt. It only became prompt after Jack Doyle and I went to the Licensing Board.

1. Applicants state:

"In late 1981 Applicants identified four floor-to-ceiling supports designed by PSE without slip joints as being inconsistent with PSE guidelines. The PSE guidelines state that such large-framed supports should have slip-joints, the purpose being to negate the need to analyze differential displacements of the supports between floor and ceiling or between walls. Affidavit at p. 3."

The Applicants did not state which four supports they identified as not being consistent with the PSE Guidelines. And more

specifically, when in late 1981 did they find these? The specific date is important since there were no PSE guidelines prior to late 1981 /1/. Since the PSE identified these problems in late 1981 and the supports had already been designed and constructed prior to that, these supports had been designed and constructed without any documented guidelines to follow, including which code was to be utilized.

2. Applicants state:

"The four supports were conservatively designed such that the floor-to-ceiling columns could simply be cut off and the support would still be adequate. Id. at p. 4."

Applicants did not provide copies of the support calculations or drawings with their Motion to substantiate this statement. Therefore, I cannot agree.

Further, Applicants are trying to tell the Board that the "four supports were conservatively designed such that the floor-to-ceiling columns could simply be cut off and the support would still be adequate." However, this is not what Applicants told the NRC Special Inspection Team (SIT). They told the SIT /2/:

"During the course of the inspection, the Applicant informed the Special Inspection Team that these supports would be unable to withstand differential seismic displacements and were being redesigned." (Emphasis added.)

/1/ See discussion in CASE's 8/13/84 Answer to Applicants' Statement of Material Facts As to Which There Is No Genuine Issue Regarding CASE Allegations Regarding Section Property Values, last paragraph on page 3 continued on page 4, and Footnote 2.

/2/ See discussion in CASE's 8/22/83 Proposed Findings of Fact and Conclusions of Law (Walsh/Doyle Allegations) (hereinafter referred to as CASE's Proposed Findings), page VI-11.

This does not support Applicants' statement that the supports were conservatively designed to begin with.

3. Applicants state:

"To demonstrate the adequacy of the initial designs, using the computer code STRUDL, one of the four identical supports was analyzed using conservative assumptions and the resulting stresses in the support were all below allowables. Indeed, the actual differential seismic displacement was calculated to be .006 inches; a limited displacement of this magnitude would, as a practical reality, not be a concern for these supports. Id. at pp. 4-5.

There is no documentation to confirm Applicants' statement at page 3 of their Affidavit that the four supports were identical. If they weren't, I don't know if they had evaluated the worst case; that is, being a member that was already close to allowables, one with maximum differential seismic displacements, concrete creep displacement effects, thermal loads, or local effects. Therefore, since this information was not provided, I cannot agree with the statements above for all supports. In any case, this is not what the Applicants told the SIT, as shown above in Answer 2.

4. Applicants state:

"Applicants have reviewed all Unit 1 and common safety related piping supports and determined that there are an (sic) 26 supports spanning from wall-to-wall or floor-to-ceiling. Of these 26 supports, seven have slip-joints, four have small spans and negligible movements and are not considered large-framed supports, and the remaining 15 have been evaluated and adequately consider the potential for differential seismic displacement. Id. pp. at 5-6."

Of the twelve supports (the original four discovered in 1981 plus the eight shown in Attachment 1 to Applicants' Affidavit) which are considered to be a PSE design, only four (or 33%) meet the design criteria. For all the remaining supports, since I have not reviewed the documents (drawings and calculations), I cannot agree with any of Applicants' conclusions.

5. Applicants state:

"None of these remaining 15 supports were designed by PSE, and all were designed prior to the time that the PSE guideline was made applicable to the other design organizations. Id. at p. 6."

Applicants' statement above is completely contradictory to what they told the NRC Special Inspection Team (SIT). The SIT stated (page 25 of SIT Report, NRC Staff Exhibit 207) /3/:

"Regarding the effects of differential seismic displacements, the Special Inspection Team verified that the PSE guidelines require that when large frames are necessary to span across a corridor or from floor-to-ceiling, one end connection must be designed as a slip joint. (Paragraphs 2 and 13, TUSI Engineering Guidelines, Section II). ITT-Grinnell and NPSI guidelines do not have a similar requirement. However, the Special Inspection Team was informed that neither of these pipe support design groups have designed wall-to-wall or floor-to-ceiling support frames. In subsequent discussions the Applicant provided the Special Inspection Team a copy of a memorandum dated January 19, 1983 directing the recipients, specifically ITT-Grinnell and NPSI personnel, to use the same seismic guidelines as those contained in the TUSI Engineering Guidelines in the event they design these types of support frames." (Emphases added.)

/3/ See also discussion in CASE's Proposed Findings, page VI-11.

6. Applicants state:

"The PSE guideline regarding floor-to-ceiling and wall-to-wall supports is not a code or procedural requirement, but rather guidance for the designer. Id. at p. 6."

This is not the implication Applicants gave the SIT (see quote in answer 5 above, first sentence). In addition, a requirement of the ASME Code not considered by Applicants is to consider all possible loadings, including seismic displacements, as set forth in ASME NF 3111(d through f) (see CASE Exhibit 659B, Attachment to 7/82 Testimony of Mark Walsh).

"NF-3111 Loading Conditions

"The loadings as specified in the Design Specifications (NA-3250) that shall be taken into account in designing a component support include, but are not limited to, the following:

". . . (d) Dynamic loads, including loads caused by earthquake and vibration;

"(e) Restrained thermal expansion;

"(f) Anchor and support movement effects . . . "

(Emphasis added.)

Although not included in the ASME section referenced above, concrete creep displacements should have been included in the original calculations but were not shown in Applicants' Motion for Summary Disposition. There is no documentation to indicate that any of these effects have been considered. The importance of these items is discussed in detail in CASE's 8/22/83 Proposed Findings, Section VI.

Further, Applicants have offered no explanation as to why these supports were improperly designed to begin with. On page 6, they state that the individuals who were the designer and the reviewer are no

longer employed at CPSES; however, they do not state that these individuals had already left the site at the time Applicants discovered this problem in late 1981. There is nothing to indicate that Applicants attempted to find out in late 1981 why these individuals did not follow the guideline for these four PSE supports.

7. Applicants state:

"The failure to follow the PSE guideline for these four supports did not require the generation of any QC non-conformance documentation. If the supports had not been adequately designed, in the first instance, corrective action would have been required. Id. at p. 7."

It is highly unlikely that QC would ever have known anything about this problem, since they have no contact with Engineering. Applicants' Witness Gary Krishnan (Site Stress Analysis Group Supervisor and my former immediate supervisor), during his 7/10/84 deposition in the intimidation portion of the proceedings, discussed how his group fits into the engineering organization (Tr. 42,005/17-42,006/18 and 42,008/22-42,014/11). And at Tr. 42,006/19-24, he stated:

"Q: In your position, do you have contact with any QA-QC inspectors?"

"A: No, I do not.

"Q: Do QA-QC inspectors judge the design ability judged by the SAG or STU DL (sic) groups?"

"A: No."

For this reason, Applicants' statement is meaningless, misleading, and deceptive.

8. Applicants state:

"Because there was a design change of the four supports, the QA program required generation of appropriate design change documentation. Id. at p. 7."

This statement is misleading, because it implies that this problem was all properly taken care of under Applicants' QA/QC program.

However, both Jack Doyle and I were having to analyze supports of this kind as though they were all right, and complaining about it, in mid-1982. It was not until we went to the Licensing Board that Applicants did anything about the problem.

9. Applicants state:

"The seismic deflection that could occur on wall-to-slab (ceiling or floor) supports consists of vertical deflection of the slab and horizontal deflection of the wall. In that such supports are near the juncture of the slab and wall, the actual deflection realized at the support would be minimal and less than the maximum deflection realized toward the middle of the wall or slab. Id. at p. 8."

I agree with the first sentence.

I disagree with the second sentence, in particular the term "minimal." To meet the seismic requirements, Comanche Peak instituted a rigid type of framework, which results in minimal deflections but large seismic loads. When a support goes from floor-to-ceiling or wall-to-wall, the support member intercepts this load from the wall or floor-to-ceiling and acts as a structural building member and receives the load as if it were a building column.

10. Applicants state:

"To determine if differential seismic deflection appeared to be a problem with wall-to-slab supports, Applicants analyzed three representative supports using a computer code, STRUDL. The differential seismic displacement calculated ranged from .00035 inches to .0045 inches, which, as a practical reality, would not be a concern to any such supports. In any event, the results of the computer analyses reflects (sic) that stresses for all members are within allowables. Id. at pp. 8-9."

Again, Applicants did not include any documentation to support their claims. For example, there is no indication of the methodology used to determine which supports were "representative." There were no STRUDL runs included (although both Jack Doyle and I are very familiar STRUDL). I therefore cannot agree with their statements.

In addition, as discussed herein, Applicants have failed to adequately answer the three questions set forth in the Board's 2/8/84 Memorandum and Order at p. 30 (see Applicants' Affidavit, page 2).

Also, I have not had time even to scan the transcript of the 8/6/84 Applicants/NRC Staff/CASE telephone conference call (although I was on the call, there were some statements made which might be helpful), the transcripts of the 8/8/84 and 8/9/84 Bethesda meetings between the NRC Staff and the Applicants (all of which were just received by CASE on 8/22/84), and of course, the transcript of the meeting held at Comanche Peak 8/23/84 between the NRC Staff and the Applicants. Also, it is my understanding that there will be some changes (at least one substantive) to some of Applicants' Affidavits regarding some of the Motions for Summary Disposition and that by 8/30/84 the Applicants are to provide the Staff with several documents

relating to Motions for Summary Disposition (which obviously we also need to adequately answer Applicants' Motions).

I would have liked to be able to do a more thorough job, and would like to be able to supplement my testimony after I have had a chance to review the referenced transcripts, changed Affidavits, and additional documents.

The preceding CASE's Answer to Applicants' Statement of Material Facts As To Which There Is No Genuine Issue was prepared under the personal direction of the undersigned, CASE Witness Mark Walsh. I can be contacted through CASE President, Mrs. Juanita Ellis, 1426 S. Polk, Dallas, Texas 75224, 214/946-9446.

My qualifications and background are already a part of the record in these proceedings. (See CASE Exhibit 841, Revision to Resume of Mark Walsh, accepted into evidence at Tr. 7278; see also Board's 12/28/83 Memorandum and Order (Quality Assurance for Design), pages 14-16.)

I have read the statements therein, and they are true and correct to the best of my knowledge and belief. I do not consider that Applicants have, in their Motion for Summary Disposition, adequately responded to the issues raised by CASE Witness Jack Doyle and me; however, I have attempted to comply with the Licensing Board's directive to answer only the specific statements made by Applicants.

Mark Walsh

(Signed) Mark Walsh

STATE OF TEXAS

On this, the 27 day of August, 1984, personally appeared Mark Walsh, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes therein expressed.

Subscribed and sworn before me on the 27 day of August, 1984.

Samuel W. Nestor

Notary Public in and for the

SAMUEL W. NESTOR of Texas
My Commission Expires
1-31-85

My Commission Expires: _____