

July 15, 1983



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
TEXAS UTILITIES GENERATING	)	Docket Nos. 50-445 and
COMPANY, <u>et al.</u>	)	50-446
	)	
(Comanche Peak Steam Electric	)	(Application for
Station, Units 1 and 2)	)	Operating Licenses)

APPLICANTS' SUMMARY OF THE RECORD  
REGARDING WEAWE AND DOWNHILL WELDING

I. Background

During the July 5, 1983 conference call the Board stated that in its proposed partial initial decision to be issued shortly it intended to identify two matters as open items and call for further testimony on those matters. Those matters concern weave and downhill welding practices of Comanche Peak. In addition, the Board stated that it would have the Texas Assistant Attorney General pursue these matters during his informal interviews to be conducted on another matter. Applicants posited that weave and downhill welding were properly addressed during the hearings conducted in September, 1982, but recognize that two of the Board members were granted leave to submit a summary of the record on these matters, with the expectation that the Board will conclude that the record is adequate and that further inquiry and hearings are unnecessary.

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This Board has demonstrated its fairness to withdraw similar requests for further hearings on issues where the parties have demonstrated that the present record is adequate.

Accordingly, Applicants hereby submit this summary of the record on weave and downhill welding at Comanche Peak. As will be demonstrated below, the record on all allegations regarding these matters is complete and there is no need for further investigation or hearings. In view of the pendency of the Attorney General's interviews on a portion of the matters addressed in this summary, Applicants request that the Board promptly determine and contact the parties as to whether it still perceives a need for further information on these matters.

## II. Statement of the Record

### A. Board Questions Regarding Weave and Downhill Welding

In its July 6, 1983 Memorandum (Response to Commission Order of June 30, 1983)<sup>1</sup>, the Board summarized its position regarding the record on weave and downhill welding. It considered both these topics to be "open matters" that would require further investigation as part of the Attorney General's interviews with potential witnesses on other matters. Memorandum at 5. Subsequently on July 12, 1983, the Board contacted the parties to refine its question with respect to weave welding. The Board

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<sup>1</sup> This Memorandum also summarized the results of the July 5, 1983 conference call.

indicated that in view of its revision to the question there would be no need for the Attorney General to pursue this matter. As revised, the Board's question on weave welding is as follows:

Mr. Stiner testified that some weave beading had been repaired by surface grinding without rewelding the entire weld. We infer, since Applicants support this method of repair, that there were some deficient welds that required repair. However, we do not understand the configuration of the welded joints well enough to accept Applicants' explanation without further information. In particular, we do not understand how grinding cures any weakness of a joint that may exist due to weave beading.

As for downhill welding, in its Memorandum the Board stated that its concern was, as follows:

. . . applicant's response on downhill welding is that it is permitted in root-and-cover pass welds. Apparently, applicant assumes that those are the only welds that the person making the allegation could have any knowledge of. But the record does not show the scope of the alleged knowledge, nor does it show any follow-up investigation to ascertain whether there were improper downhill welds that were made. (See, Tr. 8640-44.)

The Board stated that it considered the record to be "incomplete" on these matters. Memorandum at 6. Applicants will address both the Board's questions below.

#### B. General Evidentiary Considerations

There are certain considerations which we believe the Board has overlooked in reaching the tentative determination that the record is incomplete and whether additional evidence need be taken on these matters. These considerations involve (1) the expertise and credibility of the witnesses on these matters, and (2) the appropriateness of requiring further investigation by

Applicants into these matters. Applicants submit that given the present status of the record, the nature of the allegations and the relative credibility and expertise of the witnesses, there is no need to require further testimony or investigation into these matters.

1. Expertise and credibility of witnesses

The proper evidentiary weight to be afforded the testimony of the different witnesses and the credibility of those witnesses, strongly suggests that the present record is adequate. Specifically, with respect to the weave welding allegations, CASE's witnesses (Henry and Darlene Stiner) testified as lay witnesses, and did not purport to render or be qualified to render an engineering judgment regarding the structural significance of their allegations (Tr. 4028, 4271, 4274). Further, Mr. Stiner admitted his criminal (felony) record, and admitted to have fabricated his claim of a "GED" high school equivalency degree on his application for employment. See Applicants' Proposed Finding 227.<sup>2</sup> These facts should influence both the weight to be afforded that testimony, and the credibility of the witness.

With respect to the downhill welding allegation, the CASE witness (Mr. Atchison) did not purport to be, and was clearly shown not to be, an expert on welding. Further he was shown to have lied under oath in this proceeding and to have altered

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<sup>2</sup> References in this Statement to Applicants' Proposed Findings are to the numbered findings in "Applicants' Proposed Findings of Fact in the Form of a Partial Initial Decision", dated February 25, 1983.

documents concerning his educational qualifications on applications for employment with Applicants and their Constructor, Brown & Root. See Applicants' Proposed Finding 204. We believe that the Board must consider both the absence of expert testimony supporting these allegations and the lack of credibility of Mr. Atchison in determining whether there is a need for further examination of those allegations.

On the other hand, Applicants' witness regarding these allegations, Mr. Brandt, is an expert in welding and welding inspection (Tr. 4420, 4440). Mr. Atchison admitted that Mr. Brandt was more qualified than he to judge welding (Tr. 3377). Mr. Brandt presented uncontroverted testimony regarding the applicable codes and procedures and appropriate inspection practices for weave and downhill welding. He further presented uncontroverted testimony regarding the structural significance of weave and downhill welding. Applicants' Exhibit 141 at 22-23, 29-31; Tr. 4411-14, 4430-31 and 4638-40.

The relative levels of expertise and credibility of Applicants' and CASE's witnesses must be taken into account not only in the weighing of evidence on matters in dispute, but also when the Board considers pursuing questions tangential to the particular issues placed in controversy. We submit that for whatever purpose the Board weighs the evidence on these issues, it must assign, as a matter of law, greater weight to the testimony of an expert such as Mr. Brandt over that of CASE's lay witnesses. Public Service Electric & Gas Company (Hope Creek

Generating Station, Units 1 and 2), LBP-78 15, 7 NRC 642, 647, n. 8 (1978). Further, as a matter of law, the Board may rightfully presume that the testimony of Messrs. Stiner and Atchison, whose lack of credibility has been clearly demonstrated, is not credible. Kennerly v. Aro, 447 F. Supp. 1083, 1089 (E.D. Tenn. 1977). This of course does not suggest that the Board may never seek to take further evidence on matters raised by incredible witnesses that already have been fully litigated by the parties. However, such Board action should be confined to instances where the Board identifies a matter which raises serious safety or environmental questions warranting sua sponte consideration or where the Board perceives an obvious inadequacy in the evidence of record. Texas Utilities Generating Company (Comanche Peak) Steam Electric Station, Units 1 and 2), CLI-81-36, 14 NRC 1111, 1114 (1981). As will be shown below, neither situation exists here.

2. Need for further investigation into these matters

The Board has indicated that it believes that Applicants should conduct a "follow-up investigation" of the allegations regarding downhill welding<sup>3</sup> to determine whether there are additional aspects regarding this practice (other than the specific allegations presented) that need be addressed. In short, the Board apparently is suggesting that Applicants further pursue allegations made by CASE witnesses who have been shown to

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<sup>3</sup> The Board had also requested such further investigation with respect to weave welding (Memorandum at 5) but apparently has since changed its position, as evidenced by the revision to its weave welding question, discussed supra.



be either incredible or lay witnesses, or both, even though the allegations were addressed by uncontroverted expert testimony of Applicants' witnesses which demonstrate that those allegations are unfounded and in any event insignificant from a safety standpoint. Although there is no apparent distinction between these allegations and the dozen of others raised in this case, the Board would have Applicants pursue these allegations, apparently without regard for their lack of merit, even beyond the bounds of the allegations themselves to determine whether there "may" be a "real problem" that exists. See Memorandum at 5 (emphasis added). To impose such an unreasonable burden on Applicants is wholly inappropriate. It would result in the unnecessary dedication of valuable resources and would unfairly shape the public's perception of the safety of plant construction by lending undue credence to patently meritless allegations.

Accordingly, Applicants submit that in view of the above considerations and the record on these matters (discussed below), the Board should not require further inquiry into these matters.

C. Weave Welding Allegations

As noted above, the Board's question regarding weave welding concerns the "repair" methods for such welding. That question is, as follows:

Mr. Stiner testified that some weave beading had been repaired by surface grinding without rewelding the entire weld. We infer, since Applicants support this method of repair, that there were some deficient welds that required repair. However, we do not understand the configuration of the welded joints well enough to accept Applicants' explanation without

further information. In particular, we do not understand how grinding cures any weakness of a joint that may exist due to weave beading.

As will be demonstrated below, the Board's question can be answered by a discussion of (1) what is weave welding; and (2) what is the technical significance of weave welding. Both of these questions were fully answered in the record. Applicants summarize below the record on these matters and demonstrate thereby that the Board's question is answered.

1. What is weave welding

As was demonstrated by Applicants' expert witness, CASE's witnesses misunderstood the intent of applicable codes and procedures regarding weave welding. Specifically CASE's witnesses alleged that various welding codes and procedures prohibited weave welding, but could not specify the nature of the alleged prohibitions. In fact, these witnesses simply asserted that all weave welding was prohibited. CASE Exhibit 666 at 8-10; CASE Exhibit 667 at 23. However, Applicants' expert, Mr. Brandt, testified that the ASME Code considers weave welding to be an important consideration only for materials requiring Charpy impact testing. Tr. 4411-12, 4430-31. In addition, Mr. Brandt testified that welding resulting in a maximum bead width of 4 core wire diameters was permitted regardless of the material being welded, and that such welding requires some transverse oscillation of the weld electrode, a technique which the Stiners contend is prohibited weave welding. Applicants' Exhibits 141 at 30, 141 N-V; CASE Exhibit 667 at 24; Tr. 4420-22, 4432-33. Thus,



CASE's witnesses would erroneously prohibit as "weave welds" even those welds with allowable transverse oscillation, i.e. welds with bead widths of less than four core wire diameters.

2. Structural significance of weave welding

Applicants' expert witness testified that even if the bead width on a weld is greater than 4 core wire diameters, there is no structural concern with the weld or welded material so long as the welded material does not require Charpy impact testing (Tr. 4413, 4430, 4638-40). CASE's broad assertion that weave welds were "weak" (CASE Exhibit 666 at 13; CASE Exhibit 667 at 27) is simply wrong, reflecting the lack of expertise of the CASE witness. Applicants' expert witness further testified that the reason the procedures governing the welding which is the subject of these allegations generally limit the bead width to 4 core wire diameters is to enable the use of the procedures to envelope welding on as wide a range of material thicknesses as possible. Thus, the procedures may unnecessarily limit bead width on certain materials, i.e., those which do not require Charpy impact testing, even though there are no structural reasons for doing so. Applicants' Exhibits 141 at 29-31, 141J-M; Tr. 4636-37.

As to the question of "repairing" weave welds, CASE's witnesses contend that such welds should have been ground to base metal and completely rewelded. As has already been demonstrated, these witnesses were patently unqualified to address the adequacy of the weld repair procedures, and their testimony should not serve as the basis to infer, as the Board has, that there is a

need to "repair" such welds. Nonetheless, we note that Applicants' expert witness testified that while reworking a weld which exceeds the maximum bead width limitation may be properly achieved by grinding the weld to conform to that limitation (Tr. 4598-99, 4650-51), such repair is rarely necessary in that excessive bead width is of concern only on material requiring Charpy impact testing (Tr. 4413, 4430-31, 4638-40). In short, the bead width limitation is procedurally imposed, and the grinding of welds to achieve proper bead width on material which does not require impact testing is performed solely to bring the weld within procedural limitations, and not for any structural reason. See e.g., Applicants' Exhibits 141J-M. Thus, the contention that weave welds should be ground to base metal for "repair" simply is incorrect.

It is clear that the "repair" alleged by the Stiners to have been performed was not required because of some structural weakness in the weld or welded material. Rather, the repair was cosmetic, there being no structural reason for limiting weave welding on materials not requiring Charpy impact testing. The sole remaining question to be addressed, therefore, was whether the particular welds cited by these witnesses could have been on material that required impact testing (Tr. 4429, 4643).

With respect to that question, Applicants presented testimony regarding the only clear instance of allegedly unacceptable weave welding cited by CASE's witnesses (CASE Exhibit 667Q (also Applicants' Exhibit 141J)). There was no

testimony by CASE's witnesses that this was not a typical example of the weave welding with which they were concerned. Applicants' uncontroverted expert testimony demonstrated that there was no technical basis for that concern. Applicants' Exhibit 141 at 30-31. In addition, CASE's witnesses never indicated that any of the welds to which they only generally alluded were on material that required Charpy impact testing. Thus, Applicants' testimony was complete as to the specific allegations made by CASE's witnesses. Nonetheless, to assist the Board in making a determination regarding the welds only generally alluded to by CASE, Applicants provide the attached affidavit of Mr. Brandt to address the question of whether welds in the areas identified by CASE's witnesses as containing weave welds could have been on materials which require Charpy impact testing. As demonstrated in Mr. Brandt's affidavit, there are no instances of such welds in the areas identified by CASE's witnesses.

Accordingly, the Board should find that the allegations regarding weave welding are without merit, and were founded on erroneous beliefs regarding the requirements of applicable codes, procedures and instructions. Further, the Board should find that none of the instances of alleged weave welding at Comanche Peak identified or generally alluded to by CASE's witnesses, even if true, gives rise to a concern regarding the structural integrity of welds or welded material at Comanche Peak. Finally, the Board should conclude that the record on this matter is adequate and that no evidence is necessary.

### III. Downhill Welding

The Board's question regarding the record on downhill welding is apparently founded on a concern that the allegation by Mr. Atchison regarding downhill welding may extend beyond welding of root and cover passes, which was the only aspect of downhill welding addressed by Applicants. Memorandum at 5; Tr. 8640-41. The Board stated, however, that if it can be demonstrated that Mr. Atchison's allegations involved only cover passes, then the Board may not require further inquiry on this subject. (Tr. 8643-44).

The record is clear that Mr. Atchison's allegations concern only the cover passes of the welds which he inspected. Although Mr. Atchison does not himself state that the welds for which he expressed a concern regarding downhill welding were only cover passes, it is obvious to one familiar with the welding he inspected that only the cover pass of the weld is visible because that pass "covers" over the underlying welds. To illustrate this point, Applicants refer the Board to Applicants' Exhibit 141H at pp. 4 and 6 (pages 2 of 4 and 4 of 4 of WPS-E7018/82105) where the configuration of root and cover passes is shown. First, the Board should note that on page 2 of 4 of WPS-E7018/82105 it is stated "vertical welds shall be deposited uphill except root and cover passes which may be deposited uphill or downhill." Bearing that fact in mind, the Board should turn to the illustrations of the weld joint cross-sections on page 4 of that specification. There it is clear that the cover pass is the finishing layer of

weld material which covers the underlying weld layers. Thus, viewing the weld from the top, the weld passes underneath the cover pass are completely covered and not visible to one inspecting a finished weld.

Further the record demonstrates that Mr. Atchison could have been inspecting only finished welds on which the cover passes already were in place. In this regard the Board should note first that Mr. Atchison testified that the restraints he inspected for welding were CB&I restraints (Tr. 3376) that were already fabricated with finished welds when received on site and inspected by Mr. Atchison in the lay down yards (CASE Exhibit 650 at 40; Applicants' Exhibit 122 at 3). Thus, Mr. Atchison could have inspected only the cover passes of the finished welds on those restraints (rather than some intermediate step in the welding process). In addition, the Board should note that Mr. Brandt's testimony that the only welding which was inspected by Mr. Atchison was the cover pass (Applicants' Exhibit 141 at 23) was not challenged by CASE during CASE's cross-examination of Mr. Brandt concerning downhill welding (Tr. 4601-02).

Accordingly, the Board must find that the only portion of the weld Mr. Atchison could have observed was the cover pass, and that the scope of his allegation concerning downhill welding was, therefore, limited only to cover passes. Further, in view of Applicants' uncontroverted expert testimony that downhill welding

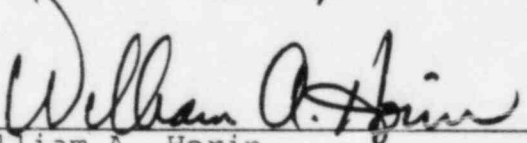
of cover passes is permitted (Applicants' Exhibits 141 at 23; 141H), there is no basis for requiring further inquiry into downhill welding.

IV. Conclusion

For the foregoing reasons, the Board should find that there is no reason to require further inquiry into weave and downhill welding allegations.

Respectfully submitted,

  
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