

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of:

PRIVATE FUEL STORAGE, LLC
(Independent Spent Fuel
Storage Installation)

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Docket No. 72-22-ISFSI

ASLBP No. 97-732-02-ISFSI

February 9, 2001

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

STATE OF UTAH'S REPLY TO NRC STAFF'S RESPONSE TO
APPLICANT'S MOTION FOR SUMMARY DISPOSITION OF
UTAH CONTENTION L (GEOTECHNICAL)

Pursuant to the Licensing Board's Order of January 4, 2001 and 10 CFR § 2.749, the State replies to the Staff's January 30, 2001, Response to Applicant's Motion for Summary Disposition of Utah Contention L ("Staff's Response"). While the Staff's Response supports PFS's Motion for Summary Disposition ("PFS Motion") in its entirety, the State does not believe that the Staff can defensibly hold that position until it has evaluated PFS's revised analyses of the geophysical characterization of the proposed PFS facility site.

The Staff's Response consists of a summary of Contention Utah L and the PFS Motion (Staff Response at 2-3); the legal and regulatory standards applicable to the Motion (*id.* at 4-9); a deferral to the Staff's Position on Utah L, issued on April 28, 2000, and the Final Safety Evaluation Report ("SER"), dated September 29, 2000; and the affidavits of Drs. John Stamatakos and Goodluck Ofoegbu, as support that the Applicant's geotechnical investigations are adequate (*id.* at 9). Finally, the Staff has concluded that PFS's Statement of Material Facts ("PFS Facts") is correct and, even though the Staff has proposed changes to those PFS Facts, it asserts that none of the Staff's "proposed corrections and

modifications ... affect the Staff's conclusion that summary disposition of this contention is appropriate." Id. at 10.

Notwithstanding the Staff's belief that PFS's Material Facts are correct, the affidavits of Stamatakos (§§ 6 through 19) and Ofoegbu (§§ 6 through 14) edit those PFS Facts. The State has reviewed the Staff's corrections to PFS's Facts and concludes that there is no reason for the State to add to, change or otherwise revise its Statement of Disputed and Relevant Material Facts ("Utah Facts") (January 30, 2000), and that to the extent the Staff's editorial changes may be considered substantive, the relevant paragraphs of the Utah Facts dispute the Staff's editorial changes too. For example, in § 7 of the Ofoegbu Affidavit, there is a wording change from "accurate" to "adequate" to characterize PFS's supplemental investigations of subsurface soils. This in no way changes Utah Material Fact § 38 wherein the State disputes that PFS has resolved the degree and nature of cementation that PFS says exists in the Bonneville deposits. The State, therefore, stands by its Utah Facts as disputing both the PFS Facts and any changes thereto by the Staff.

As support for the PFS Motion, the Staff relies, in part, on a position it took nine months ago and on the Final SER issued four months ago. The Staff's Response, however, only makes token reference to PFS's letter dated December 11, 2000, advising the Staff that some data may not have been fully integrated into PFS's geotechnical assessment of the site, and PFS is assessing the implications this may have on design basis ground motion, soil/structure interactions, stability analyses, and other related issues. See Utah Response¹,

¹ Utah Response to Applicant's Motion for Summary Disposition of Utah Contention L (January 30, 2001) ("Utah Response").

Exhibit 8. Similarly, the Staff's Response also disregards PFS's letter dated December 22, 2000, advising the Staff that PFS will need to submit a license amendment "to reflect the required changes in the PFS [facility] design basis ground motion and dynamic stability analyses based on new shear and pressure wave velocity profiles being developed for the site." Utah Response, Exhibit 9 at 1. The Staff's only comment on the substantive revisions that PFS is now conducting in its geotechnical characterization and analyses of the PFS facility site is to summarily conclude it does not believe that PFS's new geotechnical investigations and analyses will affect the Staff's position on Contention Utah L. Staff Response at n.13.

In support of its Response, the Staff relies on various provisions of the SAR that will be affected by PFS's proposed license application revisions. In describing the perceived adequacy of PFS's site investigation, John Stamatakis in his affidavit refers to his review of geotechnical issues in the SAR as revised through Rev. 13 (June 28, 2000), his assistance in preparing both sections 2.1.6 of the SER, and the Staff's Position issued on April 28, 2000, as well as PFS's responses to RAIs. Stamatakis Aff. ¶¶ 3, 4. Dr. Stamatakis makes no reference whatsoever to whether he has reviewed the scope of the Applicant's proposed revisions to the geotechnical characterization of the PFS facility site and whether those proposed revisions may affect his conclusion.

The Ofoegbu Affidavit is also deficient in discussing PFS's proposed revisions. Dr. Ofoegbu relies on the same documents as John Stamatakis, makes specific reference to SER

§§ 2.1.6.4 and 2.2, and refrains from expressing a position on PFS Fact No. 17.² Ofoegbu Aff. §§ 3-4, 16. SER section 2.1.6.4 variously describes the Staff's analysis, with reliance on Section 2.6 of the SAR, of the stability of the cask-storage-pad foundation; pad stability against bearing-capacity failure under static and dynamic loading; stability of the canister transfer building ("CTB") foundation; CTB stability against sliding under dynamic and static loading; and CTB stability against bearing capacity failure under dynamic loading. All of PFS's calculations relating to the stability analyses of the pad-foundation system and the CTB are being revised because the design basis ground motion is used as an input to these calculations. *See e.g.*, Utah Response at 13-14; Bartlett Dec. ¶ 17; Ostadan Dec. ¶¶ 10-17. Moreover, SER section 2.2. is a general conclusion in which the Staff finds the site characterization presented in the SAR acceptable to meet the criteria of Part 72 subpart E (Siting Evaluation Factors). Clearly, the Stamatakos and Ofoegbu affidavits do not withstand scrutiny because they make no effort to evaluate their previous review of the SAR sections upon which they rely in their affidavits to determine whether PFS's proposed revisions have any impact on whether PFS has satisfied the State's concerns in Contention Utah L. *See* Stamatakos Aff. ¶ 20; Ofoegbu Aff. ¶ 15.

None of the Staff's support for granting PFS's motion addresses PFS's failure to adequately characterize the design basis ground motion. Whether under Basis 2 or Basis 3, this has a significant and pervasive effect on PFS's geotechnical analysis. It will require PFS

² PFS Fact No. 17 appears to have nothing to do with PFS's current re-evaluation of the design basis ground motion and related analyses; it relates to future borings in non-safety areas of the facility which may be undertaken some time in 2001. *See* PFS Facts at 8.

to make corresponding changes in its site specific dynamic analyses for the pads, foundations, CTB, casks and soil stability. *Sæ e.g.*, Utah Response at 12-14, 21, 23; Bartlett Dec. ¶ 17. The Affidavit of Ofoegbu ¶ 13, for example, states that “the undrained shear strength . . . is not affected by any ‘mobilization’ in response to . . . any free field ground motion, nor by seismic cycling,” but this very issue is being revised by PFS. *Sæ* Utah Facts ¶ 72; Utah Response, Exhibit 9. Thus, the Staff cannot conclude that PFS has satisfied Utah L unless and until it evaluates PFS’s revised analysis.

The Staff in its Position refers to various data PFS provided to the NRC and of which the NRC’s review concluded “these data and their use in the geotechnical analyses and design presented in Revision 10 of the SAR (PFS, March 2000) satisfy the requirements for use of site-specific static and dynamic soil properties.” Staff Position at 5. Two sets of data included in the Staff’s reference are “shear wave velocities from field dynamic cone penetrometer testing” and “shear wave velocities from field seismic refraction survey.” *Id.*

The State believes that PFS’s failure to account for the disparity in the shear wave velocities obtained from two difference sources -- the 1996 seismic refraction data and the 1999 cone penetration testing (“CPT”) -- is a pivotal reason for PFS having to re-evaluate its site characterization and analyses.³ *Sæ* Utah Response at 12-14, 21, 23. Nowhere in the Staff’s Response or any other Staff document available to the State is there a discussion or

³ PFS’s December 11, 2000 letter to the NRC refers to some test data that may not have been fully integrated into PFS’s geotechnical site assessment. Utah Response, Exhibit 8. In its follow-up letter, PFS refers to a change in “design basis ground motion and dynamic stability analyses based on new shear and pressure wave velocity profiles being developed for the site.” *Id.*, State’s Response, Exhibit 9 at 1 (*emphasis added*).

evaluation of the disparity in these data. The disparity in the data is not a mere oversight but has a pervasive effect on all of PFS's dynamic and stability analyses for the site. The State is encouraged that PFS has decided to re-evaluate its site characterization and analyses but PFS's action speak volumes that there is something fundamentally wrong with its original evaluation. The glaring deficiency in the Staff's evaluation of PFS's data supports the State's position that there are relevant material facts still in dispute. Accordingly, the Board should deny PFS's motion.

In addition, the Staff's position specifically states that it has

reviewed information presented in SAR §§ 2.6.1.11 ("Static and Dynamic Soil and Rock Properties at the Site") and 2.6.1.12 ("Stability of Foundations for Structures and Embankments"), and determined that the information provided by PFS is acceptable and satisfies the regulatory requirements of 10 C.F.R. §§ 72.102(c) and (d).

Staff Position at 4. PFS specifically cites SAR § 2.6.1.12 as requiring updating to discuss the results of dynamic analyses resulting from changes to the design basis ground motion.⁴ Furthermore, in asserting that PFS's sampling and analyses program is inadequate, Contention Utah L⁵ specifically cites to 10 CFR § 72.102(d). Utah L at 85. Moreover, Contention L, Basis 2, references 10 CFR § 72.102(c). *Id.* at 83. Again the Staff's reliance on sections of the SAR that are subject to revision and are encompassed in Contention Utah L offer sufficient reason for the Board to deny PFS's motion.

⁴ See PFS Dec. 22, 2000 letter, State's Response, Exh. 9 § 1.

⁵ State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, LLC for an Independent Spent Fuel Storage Facility (November 23 1997) at 80-95 ("Utah L").

In addition to the Staff's failure to analyze PFS's proposed revision to its geotechnical investigation and dynamic analyses, nowhere in the Staff's Response and affidavits, SER, or the Staff's Position is there a substantive discussion or analysis of the concerns raised by the State in Utah L. These concerns have recently been described by the State's experts in their depositions and in the State's Response. The State's experts testified that the SER was woefully deficient in addressing the concerns raised by the State in Utah L. The following deposition testimony relating to the SER demonstrates this point:

Q. Let's go now to page 2-48. And looking at the first full paragraph on that page, it reads, "The staff concludes that the geotechnical site characterization information presented in the SAR is adequate for use in other sections of the SAR to develop the design basis for the facility and perform additional safety analysis."

...

Q. (By Mr. Travieso-Diaz) Do you agree, disagree, or have no opinion with respect to that statement?

A. (Dr. Bartlett) I disagree with it.

Q. On what basis do you disagree?

A. (Dr. Bartlett) First, the site characterization to me involves more than just borings and numbers of boreholes that were put in the ground. We've already stated that, at least based on the density that we have seen at this site in the pad emplacement area, that it doesn't appear to follow Reg Guide 1.13 -- 1.132. Also, characterization to me involves -- when we say "geotechnical site characterization," then we are also doing testing, including laboratory testing, to define soil properties.

We have serious reservations about the number of laboratory samples that have been done for this particular facility. We see the design of the foundation system is being done on very limited numbers, in which we cannot tell whether these are high values, average values, or low values for the respective layers. It's difficult in reading the SAR whether we can determine based on the layering scheme where exactly these things were done. They have not been tabulated by -- layer by layer. One could do so,

but it's extremely inconvenient.

We have reservations about the shear wave velocity data. We see some inconsistencies and cannot quite resolve which are right and which are wrong. Well, I won't say wrong. We shouldn't really use the word "wrong." But if there's any potential bias between the two data sets.

We have stated the applicant hasn't drilled any deep borings, at least geotechnical borings, down to the presumed bedrock somewhere between 800 and 500 feet. We don't know where it's at.

We see discussions of cementation in layer 2. We do not see any objective evidence to show the degree or amounts of cementation or the lack thereof.

I need to pause. I'm drawing a blank. Maybe Dr. Ostadan can add something.

A. (Dr. Ostadan) I only can add from experience. I think your expert testified yesterday that geotechnical engineers always like to have more data, and I think that is true. We're always constrained to the schedule and budget. However, we have a leverage in our practice if we don't get our wish granted to exercise and recognize the variation and potential scattering of data and bring that element into our design. I think in general that element of our practice has not been rigorously implemented here in the SAR.

Bartlett & Ostadan Tr. at 126-128; *see also id.* at 128-32 (Exhibit 6 to State's Response).

The issues raised by the State's experts are within the scope of Utah L. *See* Utah Response at 14-24. The Staff's Response, however, is silent on whether PFS's Motion satisfies those concerns. Thus, as support for PFS's Motion, the Staff's Response is totally ineffective.

The Staff's perfunctory evaluation of PFS's Motion for Summary Disposition offers no support for the motion but, conversely, strengthens the State's position that the Board should deny the motion.

CONCLUSION

Again the State urges the Board to set this technically challenging issue for hearing, and for the reasons stated above, rule that PFS is not entitled to Summary Disposition.

DATED this 9th day of February, 2001.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Denise Chancellor", is written over a horizontal line.

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CERTIFICATE OF SERVICE

I hereby certify that a copy of STATE OF UTAH'S REPLY TO NRC STAFF'S RESPONSE TO APPLICANT'S MOTION FOR SUMMARY DISPOSITION OF UTAH CONTENTION L (GEOTECHNICAL) was served on the persons listed below by electronic mail (unless otherwise noted) with conforming copies by United States mail first class, this 9th day of February, 2001:

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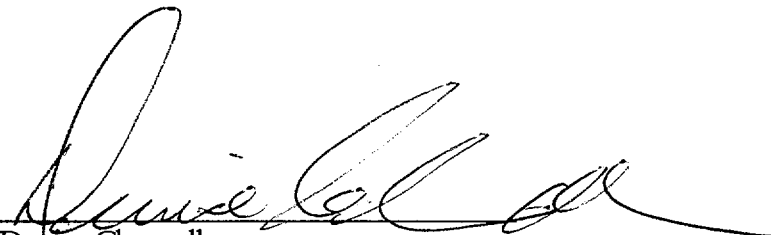
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