

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

August 3, 2004

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Before the Atomic Safety and Licensing Board

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

In the Matter of )  
 )  
PRIVATE FUEL STORAGE L.L.C. )  
 )  
(Private Fuel Storage Facility) )

Docket No. 72-22

ASLBP No. 97-732-02-ISFSI

**APPLICANT’S RESPONSE TO STATE OF UTAH’S MOTION TO STRIKE REBUTTAL TESTIMONY OF CHARLES J. MCMAHON JR.**

Applicant Private Fuel Storage L.L.C. (“Applicant” or “PFS”) hereby responds to the State of Utah’s Motion to strike the rebuttal testimony of Charles J. McMahon Jr.<sup>1</sup> On July 29, Applicant filed its “Rebuttal Testimony of Alan I. Soler and Charles J. McMahon, Jr., on the Structural Effects of a Potential F-16 Impact on a Spent Fuel Cask – Contention Utah K/Confederated Tribes B”(PFS Rebuttal”). The State claims that Dr. McMahon’s rebuttal testimony should have been presented as direct testimony because it addresses an issue “which has continually been the focus of the proceeding in this cask breach probability phase of Contention Utah K, *i.e.*, the material properties and failure rates of stainless (austenitic) steel.” State Motion at 2.

The State’s assertion is entirely inaccurate. The State *itself* has transmogrified its case, seeking to transform the material properties and failure rates of stainless steel from mere input data used by all parties in their analyses into the focus of this proceeding. Both the Original July 2003 and the Updated January 2004 Holtec Reports set forth the material properties of the stainless steel multipurpose canister (“MPC”) used in PFS’s analyses from the relevant design

<sup>1</sup> “State Of Utah’s Motion To Strike Testimony Of Applicant’s New Witness For The Cask Breach Probability Hearing On Contention Utah K/Confederated Tribes B” (Aug. 2, 2004) (“State’s Motion”).

documents, without challenge from the State. Similarly, the State's September 2003 Report set forth the properties of stainless steel used in its analysis, but did not dispute PFS's choice of stainless steel properties in PFS's own analysis. Most telling, when expert witnesses and their areas of anticipated testimony were identified by the parties, the State felt no need to assert that any of its witnesses was an expert on, or would address, the "material properties and failure rates stainless (austenitic) steel."<sup>2</sup>

After the pre-hearing conference calls in April 2004, the State re-performed its computer simulations to take into account the modifications to the cask that had been incorporated into the PFS analyses presented in the Updated Holtec Report. In its May 11, 2003 Supplemental Report, the State corrected an error it had made in its September 2003 Report, which essentially invalidated its September 2003 F-16 impact analyses.<sup>3</sup> The State's Supplemental Report introduced for the first time the need for prototype testing, but did so in the context of prudent engineering practices and because of alleged potential differences between material properties derived from coupon testing and those of fabricated components. State Supp. Rept. at 16-17, 43. The State's Supplemental Report raised no claim that any industry standards required particular limits on the allowable strain on stainless steel, and made no reference to the Department of Energy ("DOE") standard for the evaluation of aircraft crash hazards<sup>4</sup> or AISC/ANSI (American Institute of Steel Construction/American National Standards Institute) standards<sup>5</sup> as justification for its position.

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<sup>2</sup> State of Utah's Identification of Experts for the Contention Utah K Consequences Proceeding, (Sept. 5, 2003). Indeed, Dr. Sozen, the State's alleged expert on stainless steel properties, claimed only limited working knowledge of the properties of stainless steel. June 23-25 Deposition Tr. at 92-93 (Sozen).

<sup>3</sup> The State's September 2003 Report had incorrectly stated a yield stress for the MPC of 483 Mpa instead of 169 Mpa. (483 Mpa or 70,000 ksi is the ultimate strength of the stainless steel MPC, not its yield strength.) June 23-25 Deposition at 409-410 (Kilac, Sozen). This error greatly overstated the asserted damage to the MPC. "NRC Staff's Evaluation Of The State Of Utah's Report: Structural Evaluation Of Impacts From F-16 Aircraft And Military Ordnance On Holtec HI-STORM 100 Overpack And Multi-Purpose Canister," May 11, 2004, 71 at 26-28. Staff Exh 71 at 26-28.

<sup>4</sup> DOE Standard, Accident Analysis for Aircraft Crash Into Hazardous Facilities, DOE-STD-3014-96 (Oct. 1996).

<sup>5</sup> American National Standard Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities, ANSI/AISC N690-1994 ("AISC Design Specification").

At the depositions of the State's witnesses on June 23 to June 25, 2004, prudent engineering practices and alleged uncertainties as to the properties of fabricated components were again cited by the State's witnesses as justification for prototype testing, but no mention was made of the DOE or AISC/ANSI standards. PFS dutifully addressed, at length, in its direct testimony why it believed that the State's alleged uncertainties concerning material property values in the fabricated component were incorrect.<sup>6</sup>

*For the first time*, like a bolt out of the blue, the State alleged in its pre-filed direct testimony filed July 12, 2004 that the maximum allowable strain for stainless steel must be established analytically by following the DOE Standard and applying formulations in the AISC/ANSI Design Code in order to determine the acceptable strains for the MPC.<sup>7</sup> It was in response to this sudden shift in the State's litigating position that PFS determined the need for a materials expert to assist in responding to the State's claims as to the applicability of AISC/ANSI standard to the analysis of the MPC and the consequences of its use. Dr. McMahon was retained and asked to discuss in PFS's rebuttal testimony the properties of austenitic stainless steels,<sup>8</sup> contrast them to those of ferritic steel to which the AISC/ANSI standard applies, and opine that, based on their significant property differences in properties, it would be inappropriate to apply the ISC/ANSI Design Specification standards – which by its own terms is inapplicable to stainless steel pressure vessels – to the MPC shell. Soler/McMahon Rebuttal Test. at A5, A16, A20, A21.<sup>9</sup>

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<sup>6</sup> Testimony of Alan I. Soler on the Structural Effects of a Potential F-16 Impact on a Spent Fuel Cask Contention Utah K/Confederated Tribes B Cask (July 12, 2004 at Section V.

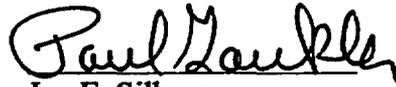
<sup>7</sup> State of Utah Testimony of Mete A. Sozen, Christopher M. Hoffmann, and Sami Kilac for Contention Utah K/Confederated Tribes B Cask Breach Proability Proceeding (Structural) (July 12, 2004) at A19.

<sup>8</sup> While the State in its motion refers to "austenitic" stainless steel as if that term had been commonly used throughout the proceeding, the first time the term was used was in Dr. McMahon's rebuttal testimony.

<sup>9</sup> The State claims that Dr. McMahon's testimony only marginally addresses he applicability of the AISC/ANSI standard, because most of his testimony appears in Section II.A and non II.B. See State Motion at note 1. The State, however, ignores that the Sections II.A and II.B of the rebuttal testimony are integrally related (PFS Rebuttal at A20) and that Dr. McMahon directly refers to his testimony in Section II.A in stating his opinion as to why it is inappropriate to apply the AISC/ANSI standard here (id. at A21).

In short, the Dr. McMahon's testimony is appropriate rebuttal to address the shifting State case. Accordingly, the State's motion to strike should be denied.

Respectfully submitted,



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Dated: August 3, 2004

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**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

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**CERTIFICATE OF SERVICE**

I hereby certify that copies of the Applicant's Response To State Of Utah's Motion To Strike Rebuttal Testimony Of Charles J. McMahon Jr, were served on the persons listed below (unless otherwise noted) by e-mail with conforming copies by U.S. Mail, first class, postage prepaid, this 3<sup>rd</sup> day of August, 2004.

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