

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
PRIVATE FUEL STORAGE, L.L.C.) Docket No. 72-22-ISFSI
)
(Independent Spent)
Fuel Storage Installation))

AFFIDAVIT OF GREGORY P. ZIMMERMAN CONCERNING CONTENTION SUWA B

I, Gregory P. Zimmerman, being duly sworn, do hereby state as follows:

1. I am employed as Leader of the Environmental Impact Analysis Program, in the Center for Energy and Environmental Analysis, at Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee. I am providing this affidavit under a technical assistance contract between the NRC Staff and ORNL. A statement of my professional qualifications is attached hereto.

2. This Affidavit is prepared in support of the "NRC Staff's Response To Applicant's Motion For Summary Disposition of Contention [Southern Utah Wilderness Alliance] SUWA B — Railroad Alignment Alternatives" ("Staff Response") filed herewith, concerning the "Applicant's Motion For Summary Disposition of Contention SUWA B — Railroad Alignment Alternatives" ("Motion") and the "Statement of Material Facts on Which No Genuine Dispute Exists" ("Statement of Material Facts") attached thereto, filed by Private Fuel Storage, L.L.C. ("PFS" or "Applicant") on June 29, 2001.

3. As part of my official responsibilities, I served as team leader and participated in an evaluation of the environmental impacts performed by the NRC Staff related to (1) the Applicant's proposed construction and operation of an independent spent fuel storage installation ("ISFSI") on the Reservation of the Skull Valley Band of Goshutes located in Skull Valley, Utah, and (2) the Applicant's proposed construction and operation of a new rail line in Skull Valley that would provide

access to the Reservation. I further assisted in the supervision and preparation of the NRC Staff's ("Staff's") "Draft Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Facility on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah," NUREG-1714, issued in June 2000 ("DEIS"), and am currently assisting in supervision and preparation of the Staff's Final EIS ("FEIS") related to this proposed facility.

4. As part of my official responsibilities, I reviewed the Applicant's Motion and the Statement of Material Facts attached thereto, in which PFS seeks summary disposition of Contention SUWA B. My review included the Declarations of Susan Davis, John Donnell, and Douglas Hayes, and excerpts from the Deposition of James Catlin, each of which were attached to the Applicant's Motion. With respect to the Applicant's Statement of Material Facts, I examined those statements which relate to work I have done or am doing with respect to the alternatives addressed in the DEIS and the FEIS. As relevant to Contention SUWA B, these portions of the Applicant's Statement of Material Facts are in Material Facts No. 6 through 26.

5. On the basis of my review of the Applicant's Environmental Report ("ER") and the DEIS, I am satisfied that Material Facts No. 6, 8, and 9 in the Statement of Material Facts attached to the Applicant's Motion are correct. These items are addressed in the DEIS. See DEIS Figure 1.2 and DEIS § 2.1.1.3 ("New rail line"). Based on my review of the maps attached to the Applicant's motion, I am also satisfied that Material Fact No. 7 is correct.

6. On the basis of my review of the Applicant's ER, the Applicant's Motion, the Declarations of Ms. Davis, Mr. Donnell, Mr. Hayes, the excerpts from the Deposition of Dr. Catlin attached to the Motion, and the DEIS, I am satisfied that Material Facts Nos. 18 through 26 in the Statement of Material Facts attached to the Applicant's Motion are correct.

7. Contention SUWA B asserts that "[t]he License Application Amendment fails to develop and analyze a meaningful range of alternatives to the Low Corridor Rail Spur and the

associated fire buffer zone that will preserve the wilderness character and the potential wilderness designation of a tract of roadless Bureau of Land Management (BLM) land — the North Cedar Mountains — which it crosses.”

8. The issues raised in Contention SUWA B concerning alternatives to the Low Corridor Rail Spur were considered and addressed in the DEIS. See DEIS § 2.2.4.2 (“Local Transportation Options in Skull Valley”). Thus, the DEIS specifically discusses other rail access routes through Skull Valley that would be alternatives to the proposed Low Corridor Rail Spur (see DEIS at p. 2-42, “Construction of a new rail line from a location other than Skunk Ridge”). In addition, the potential impacts to wilderness from the construction of the proposed Low Corridor Rail Spur are also addressed in the DEIS [see DEIS § 5.8.3.1 (“Construction impacts”)], as is the potential for initiating wildfires or inhibiting firefighting efforts in Skull Valley [see DEIS § 5.8.4 (“Wildfires”)].

9. Because the existing Union Pacific rail main line lies north of Interstate 80 (“I-80”) all along the northern end of Skull Valley, except where it crosses the interstate near the proposed Low siding, construction of a rail line from any location in Skull Valley other than the Low siding would involve crossing the interstate.

10. The construction necessary to provide either a new overpass or underpass across I-80 was considered in the DEIS to offer unresolved problems with respect the potential environmental impacts. See DEIS at 2-42 (“Construction of a new rail line from a location other than Skunk Ridge”). That is, notwithstanding the absence of a specific overpass or underpass design upon which to base an impact assessment, there would likely be disturbance of habitat and land areas, impacts to traffic on I-80 , and consumption of construction materials.

11. Based on the likely impacts identified in my statements in paragraph 10, above, new rail corridors originating from a location in the northern end of Skull Valley other than the proposed siding at Low (Skunk Ridge) were eliminated from detailed evaluation in the DEIS. In view of these

likely impacts, the new rail corridor alternatives in Skull Valley, whether located in the center of Skull Valley, or on its eastern side were deemed to offer similar or greater impacts when compared to the Low Corridor Rail Spur.

12. The DEIS explicitly considered alternatives that would locate the new rail line on the eastern side of Skull Valley. See DEIS at 2-42 ("Construction of a new rail line from a location other than Skunk Ridge"). Two such options were considered.

13. First, access was considered from a location north of the existing Timpie interchange of I-80. Because any new rail line from this location would have to cross the interstate, as stated above in paragraph 10, the likely impacts identified in that paragraph would be associated with this alternative.

14. Second, access was considered from the neighboring Tooele Valley to the east. However, substantial excavation would be required for this route at the north end of the Stansbury Mountains, which separate Tooele Valley from Skull Valley. See DEIS at 2-42.

15. The DEIS eliminated the alternatives identified in paragraphs 13 and 14, above, from detailed evaluation because of the likelihood for construction on the eastern side of Skull Valley to directly impact wetlands at Horseshoe Springs, existing houses and ranches, and traffic on Skull Valley Road. See DEIS at 2-42. In view of these likely impacts, the two eastern Skull Valley alternatives were deemed to offer similar or greater impacts when compared to the Low Corridor Rail Spur.

16. The DEIS concluded that the impacts from construction of the proposed Low Corridor Rail Spur would be small to moderate. See DEIS §§ 5.1.1, 5.2.1, 5.3.1, 5.4.1, 5.5.1, 5.6.1, 5.7.1, and 5.8.

17. Based on my review, I agree with the Applicant's view that the construction of the proposed Low Corridor Rail Spur would not result in larger environmental impacts when compared

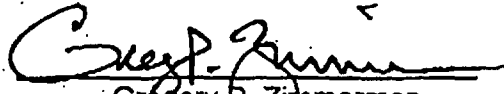
to either the Central or East rail-alignment alternatives, as identified in the Motion (see Material Facts No. 21 and 26, respectively, in the Applicant's Statement of Material Facts).

18. The maps of the West route and alignment attached to the Applicant's motion show that the West route would lie extremely close (i.e., within about 3,000 feet) to the proposed Low Corridor Rail Spur for about 6.5 miles and would be co-located with the route and alignment of the Low Corridor Rail Spur for the remainder of its 32-mile length. Because of the close proximity of the two routes, the types of environmental impacts that would likely result from the construction of the West alternative route would largely be indistinguishable from the impacts of constructing the proposed Low Corridor Rail Spur, with the possible exception of the unevaluated claims (as identified in Material Fact No. 15 in the Applicant's Statement of Material Facts) of increased amounts of fill material that might be required and/or increased costs.

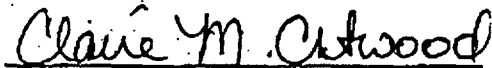
19. The "West Skull Valley Alternative," as identified and described in Material Facts No. 10 through 17 in the Applicant's Statement of Material Facts, is an alternative that was not discussed or addressed in the DEIS; and the Staff has not been given the specific design details or a detailed alignment for this alternative. Hence, the Staff has not fully evaluated this alternative, and expresses no position with respect to Material Facts Nos. 10 through 16. Nonetheless, and based on my statements in paragraph 18, above, I agree with the Applicant's view that the construction of the West rail-alignment alternative would result in similar or greater environmental impacts when compared to the proposed Low Corridor Rail Spur (see Material Fact No. 17 in the Applicant's Statement of Material Facts).

20. Further, I agree with the Applicant's view that the concerns raised by SUWA in Contention B regarding railroad alignments have been addressed satisfactorily, and no genuine issue of material fact exists with respect to these matters.

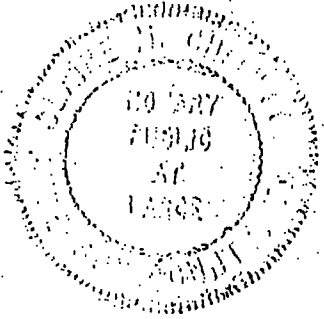
21. I hereby certify that the foregoing statements are true and correct to the best of my knowledge, information, and belief.


Gregory P. Zimmerman

Sworn to before me this
19th day of July 2001


Notary Public

My commission expires: 6/30/2004



GREGORY P. ZIMMERMAN
Leader, Environmental Impact Analysis Program
Center for Energy and Environmental Analysis
Oak Ridge National Laboratory
Oak Ridge, TN 37831

Education:

M.S. Degree, Mechanical Engineering, University of Tennessee, Knoxville, 1977
B.S. Degree, Mechanical Engineering, University of Tennessee, Knoxville, 1975.

General Qualifications:

Mr. Zimmerman has over 20 years' experience at Oak Ridge National Laboratory (ORNL) in risk and safety analyses, radioactive waste management, and environmental impact assessment. In 1988, he participated in the preparation of a Programmatic Environmental Impact Statement (EIS) for the U.S. Army's proposal to destroy the national stockpile of lethal chemical weapons, and in 1989, he assumed program management responsibility at ORNL for the preparation of eight site-specific EISs related to that U.S. Army program. He has also provided assistance to the U.S. Department of Energy (DOE) and U.S. Nuclear Regulatory Commission (NRC) in the preparation of environmental impact assessments and EISs. In his involvement with those programs, Mr. Zimmerman has conducted accident analyses, exposure assessments, and dose analyses for facilities handling radioactive materials and wastes under the jurisdiction of both the DOE and the NRC.

Mr. Zimmerman developed a mathematical technique for blending population data with information about atmospherically dispersed pollutants in order to quantify the spatial distribution of potential human health impacts. This analytical technique has been successfully applied to the siting of hazardous facilities and has potential application to the investigation of issues related to environmental justice or environmental equity.

Experience:

January 1977 to Present — OAK RIDGE NATIONAL LABORATORY
Oak Ridge, TN

ORNL is a multi-program national science and technology laboratory managed for the U.S. Department of Energy by UT-Battelle, LLC. In his program manager duties, Mr. Zimmerman is responsible for coordinating and supervising the technical progress of a multidisciplinary team of individuals who conduct environmental impact analyses and assessments for a variety of federal agencies. The program specializes in the preparation of environmental impact statements and assessments. His managerial responsibilities include the development of schedules, budgets, and work assignments, as well as technical oversight, quality control, preparation, and assembly of final project deliverables and documents.

Mr. Zimmerman is presently assisting the NRC Staff in its environmental review of a license application by Private Fuel Storage, L.L.C. for a proposed independent spent fuel storage installation to be constructed and operated on the Reservation of the Skull Valley Band of Goshute

Indians, located within the boundaries of Tooele County, Utah. As part of this effort, along with members of the NRC Staff, he is coordinating an environmental impact analysis review being performed by a team of reviewers at ORNL and other federal agencies and contractors. In this regard, he supervised and assisted in the preparation of the NRC Staff's "Draft Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Facility on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah," NUREG-1714, issued in June 2000 ("DEIS"); and is participating in the development of the Staff's Final EIS for this proposed facility.

In 1993, Mr. Zimmerman led the ORNL effort to assist the NRC Staff in its review of the license application of Envirocare of Utah for an 11e.(2) byproduct disposal facility near Clive, Utah. He provided technical assistance to the NRC Staff and coordinated the preparation of the NRC Staff's final EIS as part of this effort. In 1995, Mr. Zimmerman conducted radiological and chemical accident analyses for the NRC Staff's license renewal review of Nuclear Metals, Inc., in Concord, Mass. In 1994 to 1996, he served as the ORNL Core Team leader for Performance Evaluations of fifteen potential DOE mixed, low-level (radioactive) waste disposal sites. This project was a coordinated effort between ORNL and Sandia National Laboratories.

September 1975 to December 1976 — UNIVERSITY OF TENNESSEE
Department of Mechanical Engineering, Knoxville, TN

Under a graduate research assistantship, Mr. Zimmerman participated in nuclear safety studies involving heat and mass transfer in nuclear reactors cooled by liquid metals.

March 1971 to June 1974 — NATIONAL AERONAUTIC & SPACE
ADMINISTRATION (NASA), Huntsville, AL

As part of his cooperative education experience, Mr. Zimmerman assisted with mission planning aspects of the U.S. Space Shuttle program, including payload packaging and scheduling, as well as in-flight operations and orbital mechanics & maneuvering.

Technical Specialties:

Project and Program Management	Environmental Impact Analyses
Risk and Accident Analyses	Nuclear Waste Management
Heat Transfer and Thermodynamics	Nuclear Weapons Effects
Scientific Programming (Computers)	

Professional/Academic Awards and Honors:

Member of Tau Beta Pi, the engineering honorary society.

Joel F. Bailey Award for academic achievement in engineering,
University of Tennessee, 1975

Martin Marietta Energy Systems, Inc., *Significant Event Award*, July 1991.

UT-Battelle, *Significant Event Award*, October 2000.

Selected Publications:

K.S. Gant and G.P. Zimmerman, *Tooele Chemical Agent Disposal Facility: Review and Evaluation of Information for Updating the 1989 Final Environmental Impact Statement*, ORNL/TM-13542, Oak Ridge National Laboratory, Oak Ridge, Tenn., July 1999.

R.M. Reed and G.P. Zimmerman, "Analyses of Environmental Justice Concerns for the U.S. Army's Chemical Stockpile Disposal Program," proceedings of *Environmental Forum VII*, Denver, Colo., April 28 and 29, 1999, sponsored by the Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md.

Co-author, U.S. Department of the Army, *Final Environmental Impact Statement for Pilot Testing of Neutralization/Supercritical Water Oxidation of VX Agent at Newport Chemical Activity, Indiana*, Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md., December 1998.

Blasing, T.J., G.F. Cada, C.E. Easterly, L.N. McCold, G.P. Zimmerman, *Environmental Assessment: Renewal of Materials Licenses for ALARON Corp. Northeast Regional Service Facility, Wampum, Pennsylvania*, NUREG/CR-5549, prepared by the Oak Ridge National Laboratory, Oak Ridge, Tenn., for the Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission, Washington, D.C., December 1998.

Project leader, U.S. Department of the Army, *Final Environmental Impact Statement for Pilot Testing of Neutralization/Biotreatment of Mustard Agent at Aberdeen Proving Ground, Maryland*, Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md., July 1998.

Co-author, U.S. Department of the Army, *Revised Final Environmental Impact Statement for Disposal of Chemical Agents and Munitions Stored at Pine Bluff Arsenal, Arkansas*, Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md., April 1997.

G.P. Zimmerman, *Review and Evaluation of Updated Numerical Input Values for Determining Risks to Threatened and Endangered Species near the Umatilla Chemical Depot, Oregon*, prepared for the Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md., by the Oak Ridge National Laboratory, Oak Ridge, Tenn., April 1997.

R.L. Miller, C.E. Easterly, D.A. Lombardi, I.E. Treitler, R.T. Wimbrow, and G.P. Zimmerman, *Environmental Assessment for Proposed License Renewal of Nuclear Materials, Inc., Concord, Massachusetts*, NUREG/CR-6528, prepared by Oak Ridge National Laboratory, Oak Ridge, Tenn., for U.S. Nuclear Regulatory Commission, Office of Nuclear Materials Safety and Safeguards, Washington, D.C., February 1997.

Project leader, U.S. Department of the Army, *Revised Final Environmental Impact Statement for Disposal of Chemical Agents and Munitions Stored at Umatilla Depot Activity, Oregon*, Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, Md., November 1996.

Technical Core Team Leader, U.S. Department of Energy, *Performance Evaluation of the Technical Capabilities of DOE Sites for Disposal of Mixed Low-Level Waste*, DOE/ID-10521 (Vols. 1, 2, and 3) and SAND96-0721 (Vols. 1, 2, and 3), prepared by Sandia National Laboratories, Albuquerque, New Mexico, March 1996.

J.D. Tauxe, D.W. Lee, J.C. Wang, and G.P. Zimmerman, "A Comparative Subsurface Transport Analysis for Radioactive Waste Disposal at Various DOE Sites," P95-79881, *Proceedings of the 1995 Fall Meeting of the American Geophysical Union*, San Francisco, Calif., December 11-15, 1995.

Contributor, National Research Council, *Recommendations for the Disposal of Chemical Agents and Munitions*, National Academy Press, Washington, D.C., 1994. [provided the text and Figure 4-3 on the comparative risk of destroying the U.S. stockpile of chemical weapons versus continuing to store the stockpile.]

G.P. Zimmerman, *The National Environmental Policy Act (NEPA): A Training Session on Its Requirements and Its Implementation*, presented at the request of the NEPA Office of the U.S. Army Chemical Materiel Destruction Agency, Aberdeen, Maryland, February 15, 1994.

Project leader, U.S. Nuclear Regulatory Commission, *Final Environmental Impact Statement to Construct and Operate a Facility to Receive, Store, and Dispose of 11e.(2) Byproduct Material Near Clive, Utah*, NUREG-1476, U.S. Nuclear Regulatory Commission, Office of Nuclear Materials Safety and Safeguards, Washington, DC, August 1993.

Co-author, *Chemical Stockpile Disposal Program Final Programmatic Environmental Impact Statement*, Vols. 1, 2, and 3, Program Executive Officer-Program Manager for Chemical Demilitarization, Aberdeen Proving Ground, MD, January 1988.

G.P. Zimmerman, *Better Understanding of Bubble Behavior in Liquid Environments: The Rise and Collapse of Large Vapor Bubbles*, Master's Thesis, University of Tennessee, Department of Mechanical Engineering, 1977.