

April 21, 1999

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
)	
(Private Fuel Storage Facility))	

APPLICANT'S MOTION FOR SUMMARY DISPOSITION OF UTAH CONTENTION C – FAILURE TO DEMONSTRATE COMPLIANCE WITH NRC DOSE LIMITS

I. INTRODUCTION

Applicant Private Fuel Storage L.L.C. ("Applicant" or "PFS") files this motion for summary disposition of Contention "Utah C – Failure to Demonstrate Compliance with NRC Dose Limits," ("Utah C") pursuant to 10 C.F.R. § 2.749. Summary disposition is warranted on the grounds that there exists no genuine issue as to any material fact relevant to the contention and therefore, under the applicable Commission regulations, the Applicant is entitled to a decision as a matter of law. This motion is supported by a Statement of Material Facts as to which PFS asserts that there is no genuine dispute and an affidavit from William Hennessy, Assistant Project Manager and Lead Licensing En-

gineer for Stone & Webster Engineering Company, the architect engineer for the Private Fuel Storage Facility ("PFSF").

II. STATEMENT OF THE ISSUE

On April 22, 1998, the Atomic Safety and Licensing Board ("Licensing Board" or "Board") admitted Contention Utah C. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 251 (1998). The contention as admitted asserts that:

The Applicant has failed to demonstrate a reasonable assurance that the dose limits specified in 10 C.F.R. § 72.106(b) can and will be complied with in that:

- 1) License Application makes selective and inappropriate use of data from NUREG-1536 for the fission product release fraction.
- 2) License Application makes selective and inappropriate use of data from SAND80-2124 for the respirable particulate fraction.
- 3) The dose analysis in the License Application only considers dose due solely to inhalation of the passing cloud. Direct radiation and ingestion of food and water are not considered in the analysis.

10 C.F.R. § 72.106(b) provides that "[a]ny individual located on or beyond the nearest boundary of the controlled area shall not receive a dose greater than 5 rem to the whole body or any organ from any design basis accident."

In subpart 1 of Utah C above, the State claims that PFS's calculation "makes selective and inappropriate use of data from NUREG-1536 for the fission product release fraction." Private Fuel Storage, LBP-98-7, 47 NRC at 251. Furthermore, the State asserted specifically in the bases relating to subpart 1 that it was inappropriate for PFS to

assume in its dose analysis of a postulated loss of containment accident¹ that 90 percent of the volatile fission products that would be released from the spent fuel in such an accident would be retained in the canister and not released into the environment.²In relation to subpart 2 of Utah C above, the State similarly asserted that the assumption that only five percent of the isotopes Co-60 and Sr-90 released from the spent fuel will be respirable by a human, an assumption contained in SAND80-2124,³ was invalid. Utah Contentions at 20-21. Regarding the dose analysis, relating to subpart 3 of Utah C above, the State asserted that "PFS calculat[ed] the dose to an adult 500 m from the accident, due solely to inhalation of the passing cloud. Other relevant pathways, such as direct radiation from cesium deposited on the ground, and ingestion of food and water or incidental soil ingestion, are not considered" Id. at 21 (citations omitted).

The Applicant moves for summary disposition of Utah C on the grounds that there no longer exists a genuine dispute concerning any facts material to the foregoing matters because PFS has revised its dose analysis so as to render the issues in Utah C moot. In response to the NRC Staff's Requests for Additional Information, PFS has performed new dose calculations replacing those in the original application, in accordance with new

¹ PFS performed the dose analysis in its initial application for a hypothetical, non-mechanistic breach of a canister storing spent fuel at the PFSF based on existing Staff guidance. See Hennessy Aff. ¶ 3.

² "State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, L.L.C. for an Independent Spent Fuel Storage Facility," dated November 23, 1997 [hereinafter "Utah Contentions"] at 19; Private Fuel Storage, L.L.C. – Prehearing Conference (January 27, 1998) Tr. at 184-85. The State asserted that the use of that assumption, from SAND80-2124, was inconsistent with the use of data from NUREG-1536. Utah Contentions at 19-20.

³ Sandia National Laboratories, Transportation Accident Scenarios for Commercial Spent Fuel (1981).

guidance issued by the NRC Staff.⁴ Hennessy Aff. at ¶ 4. In these new calculations PFS no longer uses assumptions from NUREG-1536 or SAND80-2124. Id. at ¶¶ 6-7. Specifically, PFS no longer assumes that any of the volatile fission products would be held up in the canister. Rather, the calculation conservatively assumes that 100% of the radionuclides assumed to be released from the fuel rods are available for release from the canister. Similarly, PFS no longer assumes that only 5 percent of the radioactive material released would be respirable. Rather, it assumes that 100 percent of such material would be respirable. Finally, PFS's new calculation now includes other applicable pathways in addition to inhalation from a passing cloud, such as direct radiation and ingestion of food and soil. Hennessy Aff. at ¶¶ 6-8. Thus, the new calculations render moot each of the issues raised by the State in Utah C by adopting each of the bases put forward by the State. No contested issues remain. Accordingly, the Applicant is entitled to a decision as a matter of law.

III. LEGAL BASIS FOR SUMMARY DISPOSITION

Because this is the first motion for summary disposition filed by PFS, we set forth the relevant law at some length.

⁴ Interim Staff Guidance 5 (ISG 5), Accident Dose Calculations (October 6, 1998); see also, Interim Staff Guidance 3 (ISG 3), Post Accident Recovery and Compliance with 10 CFR 72.122(l) (October 6, 1998).

A. Rule

A party is entitled to summary disposition "as to all or any part of the matters involved in [a] proceeding," 10 C.F.R. § 2.749(a), "if the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits [provided], if any, show that there is no genuine issue as to any material fact and that the . . . party is entitled to a decision as a matter of law," 10 C.F.R. § 2.749(d). In general, the same standards apply to motions for summary disposition as apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure. Advanced Medical Systems, Inc. (One Factory Row, Geneva, Ohio 44041) CLI-93-22, 38 NRC 98, 102 (1993). "Rule 56 is analogous to section 2.749." Id.

The movant for summary judgment bears the initial burden of showing the absence of a genuine issue as to any material fact. Id. If the movant makes such a showing, and it is not countered by the opposing party, the Board may summarily dispose of the arguments in question on the basis of the pleadings. Id. "The opposing party must controvert any [individual] material fact properly set out in the statement of material facts that accompanies a summary disposition motion or that fact will be deemed admitted." Id. at 102-03.⁵ Opponents must "pinpoint[] each of [the movant's] stated material facts which they genuinely dispute and set[] forth the basis for their belief that the facts are not

⁵ Alternatively, the opponent must submit an affidavit explaining why it is impractical to do so. Advanced Medical Systems, CLI-93-22, 38 NRC at 103, 117; see 10 C.F.R. § 2.749(c). In this case, because the State already possesses all the evidence relevant to the disposition of the contention, namely, PFS' new dose calculation, there is no reason why the State should not be able to respond to this motion.

as stated.” Commonwealth Edison Company (Braidwood Nuclear Power Station, Units 1 and 2), LBP-86-12, 23 NRC 414, 420 (1986). A board has no obligation to develop an argument from material submitted by an opponent where the opponent does not articulate the argument. See, e.g., Blue Cross and Blue Shield of Alabama v. Weitz, 913 F.2d 1544, 1550 (11th Cir.), reh’g en banc denied, 921 F.2d 283 (1990).

B. Material Fact

Material facts are determined by the substantive law applicable to the case. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986).

Only disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted.

Id. A licensing board will ultimately determine which facts are material on the basis of the parties’ submissions and the record. Advanced Medical Systems, CLI-93-22, 38 NRC at 115 & n.65.

C. Genuine Issue

To counter a motion for summary disposition, an opponent “may not rest upon ‘mere allegations or denials,’ but must set forth specific facts showing that there is a genuine issue.” Advanced Medical Systems, CLI-93-22, 38 NRC at 102. “Bare assertions or general denials are not sufficient. Although the opposing party does not have to show that it would prevail on the issues, it must at least demonstrate that there is a genuine factual issue to be tried.” Id. (citations omitted). “[Opponents] have to present con-

trary evidence that is so significantly probative that it creates a material factual issue."

Id. n.13 (citing Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-92-8, 35 NRC 145, 154 (1992)) (emphasis added). Merely a "metaphysical doubt" concerning the material facts is insufficient. Id. n.13 (citing Matsushita Electrical Industrial Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 586-87 (1986)).

D. Evidence

Evidence in support of or opposition to a motion for summary disposition can include: "filings in the proceeding, depositions, answers to interrogatories, . . . admissions . . . , . . . statements of the parties and . . . affidavits." 10 C.F.R. § 2.749(d). It can also include documents produced in discovery. See Washington Public Power Supply System (WPPSS Nuclear Project No. 1), ALAB-771, 19 NRC 1183, 1189 (1984); see Matsushita, 475 U.S. at 577.⁶ All factual material in the administrative record may be used by pointing it out to the Board. See Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986). Identifying such material, however, is an obligation of the party, not the Board. E.g., Barge v. Anheuser-Busch, Inc., 87 F.3d 256, 260 (8th Cir. 1996). The Board, however, retains the power to request and consider further materials from the parties to make a decision on a summary disposition motion. Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752 (1977).

⁶ Motions for or against summary disposition may also rely on facts subject to judicial notice. E.g., Clay v. Equifax, Inc., 762 F.2d 952, 956 (11th Cir. 1985); see Fed. R. Evid. 201.

1. Depositions

Deposition evidence may support motions for summary disposition. 10 C.F.R. § 2.749(d). Deposition evidence, however, must first be admitted by the Board. 10 C.F.R. § 2.740a(g); see 10 C.F.R. § 2.740a(d) (objections). Depositions are granted more weight than affidavits when evaluated for summary disposition because they present the opposing side the opportunity for cross-examination and they reflect the actual words of the witness. 11-18 James Wm. Moore et al., Moore's Federal Practice ¶¶ 56-179 (3rd ed. 1997). Therefore, "[w]here deposition and [subsequent] affidavit are in conflict, the affidavit is to be disregarded unless it is demonstrable that the statement in the deposition was mistaken" Russell v. Acme-Evans Co., 51 F.3d 64, 67-68 (7th Cir. 1995).

2. Interrogatories

Responses to interrogatories may also be used in support of or opposition to motions for summary disposition. 10 C.F.R. § 2.749(d). To be admissible, they must meet the same standards as affidavits—they must be made on personal knowledge and must contain information admissible at trial. Garside v. Osco Drug, Inc., 895 F.2d 46, 49-50 (1st Cir. 1990) (rejecting as hearsay third party description of anticipated expert testimony); see Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 NRC 1170, 1175 (1983). An opposing party's responses to interrogatories may be admitted as admissions by party opponents. Bell v. A-Leet Leasing Corp., 863 F.2d 257, 259 (2d Cir. 1988). Hence, they need not be made on personal

knowledge. 4 Christopher B. Mueller and Laird C. Kirkpatrick, Federal Evidence § 372 at 36 (2d ed. 1994).

3. Admissions

Admissions “on file” may be used to support or oppose motions for summary disposition. 10 C.F.R. § 2.749(d). Admissions include responses to requests for admission filed on opposing parties. 10 C.F.R. § 2.742; Fed. R. Civ. P. 36. “[A] matter admitted is ‘conclusively established.’” United States v. Kasuboski, 834 F.2d 1345, 1350 (7th Cir. 1987). “[A] party cannot attack issues of fact established in admissions” with other forms of evidence such as affidavits or depositions. Id.⁷ Failing to respond to a request for admission results in default with the facts in question being conclusively admitted. Id. at 1349-50.

4. Affidavits

Affidavits are to supplement other material used to support a motion for summary disposition. See 10 C.F.R. §§ 2.749(a) and (d). “[They] shall set forth such facts as would be admissible in evidence and shall show affirmatively that the affiant is competent to testify to the matters stated therein.” 10 C.F.R. § 2.749(b).⁸ Thus, an affidavit must ordinarily be made on the basis of the personal knowledge of the affiant. Braid-

⁷ Nor may a court ignore an admission “because it finds evidence presented by the party against whom the admission operates to be more credible.” American Auto Ass’n, Inc. v. AAA Legal Clinic of Jefferson Crooke, P.C., 930 F.2d 1117, 1120 (5th Cir. 1991).

⁸ Courts should strike inadmissible portions of affidavits and consider the remainder. Salas v. Carpenter, 980 F.2d 299, 304 (5th Cir. 1992).

wood, LBP-86-12, 23 NRC at 418-19; Columbia Pictures Industries, Inc. v. Professional Real Estate Investors, Inc., 944 F.2d 1525, 1529 (9th Cir. 1991), aff'd on other grounds, 508 U.S. 49 (1993) (rejecting affidavit based on information and belief).⁹ Hearsay is not admissible unless it falls under an exception to the hearsay rule. Winskunas v. Birnbaum, 23 F.3d 1264, 1268 (7th Cir. 1994). Thus, factual assertions by non-witness attorneys are not admissible. Seabrook, LBP-83-32A, 17 NRC at 1175; Friedel v. City of Madison, 832 F.2d 965, 969-70 (7th Cir. 1987).

5. Expert Opinion

An affidavit containing expert opinion may be used to support or oppose summary disposition. Kerr-McGee Chemical Corporation (West Chicago Rare Earths Facility), ALAB-944, 33 NRC 81, 146 n.308, 148 (1991) (quoting Bulthuis v. Rexall Corp., 789 F.2d 1315, 1318 (9th Cir. 1985)). To be admissible: 1) the affiant must be an expert, Sullivan v. Rowan Cos., 952 F.2d 141, 144 & n.6 (5th Cir. 1992); 2) his or her opinion must be reliable and relevant, Kumho Tire Co. v. Carmichael, No. 97-1709, 119 S. Ct. 1167, 1999 U.S. LEXIS 2189, at *17 (March 23, 1990); and 3) the affidavit must otherwise satisfy the requirements for affidavits, Duplantis v. Shell Offshore, Inc., 948 F.2d 187, 191-92 (5th Cir. 1991); see 10 C.F.R. § 2.749(b). See also, e.g., Houston Lighting

⁹ Nevertheless, a Licensing Board, as an administrative board, may "dispense with the personal knowledge requirement with less constraints than a judicial court, to expedite and facilitate the adjudicatory process, but not to the exclusion of a fair opportunity for the opponent of the proffered evidence to rebut it." Braidwood, LBP-86-12, 23 NRC at 419. Moreover, personal knowledge may be inferred from the position of the affiant. E.g., Catawba Indian Tribe v. South Carolina, 978 F.2d 1334, 1342 (4th Cir. 1992) (family members knowledgeable of family affairs; corporate officers knowledgeable of corporation).

and Power Company (Allens Creek Nuclear Generating Station, Unit 1), LBP-81-34, 14 NRC 637, 669 (1981). "It is the burden of the party offering the expert testimony to lay a foundation for its admission." United States v. Williams, 95 F.3d 723, 729 (8th Cir. 1996).

a) Expert Qualification

Only experts may offer opinion testimony, including that not based on firsthand knowledge. Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 592 (1993) (citing Fed. R. Evid. 701, 702, 703). Therefore expert affidavits must demonstrate the qualifications of the affiant as an expert. See Duplantis, 948 F.2d at 191. A board will determine the affiant's qualifications under Rule 702 of the Federal Rules of Evidence. Florida Power & Light Company (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-950, 33 NRC 492, 501 n.5 (1991). Non-expert testimony, regarding "matters [outside the firsthand knowledge of the witness] which are beyond the realm of common experience and which require the special skill and knowledge of an expert" is simply inadmissible. Randolph v. Collectramatic, Inc., 590 F.2d 844, 846 (10th Cir. 1979);¹⁰ see Turkey Point, ALAB-950, 33 NRC at 500-01; Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), LBP-88-31, 28 NRC 652, 663 (1988) (non-experts may not re-analyze technical material submitted by an opponent).

¹⁰ Accord Doddy v. Oxy USA, Inc., 101 F.3d 448, 460 (5th Cir. 1996).

To qualify as an expert, an affiant must possess “knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. While either formal education or significant experience may suffice, Sullivan, 952 F.2d at 144-45, it must be shown that the expertise possessed by an expert is significant. United States v. An Article of Drug, 661 F.2d 742, 745 (9th Cir. 1981). Moreover, the expert’s education or experience must pertain particularly to the matter to which he or she testifies. E.g., Eagleston v. Guido, 41 F.3d 865, 874 (2d Cir. 1994), cert. denied, 516 U.S. 808 (1995) (must embrace “specific body of scientific or technical expertise pertinent” to the issue in question).

b) Reliability and Relevance

To be admissible, the expert opinion in the affidavit must be both reliable and relevant. Kumho Tire, 1999 U.S. LEXIS 2189, at *17.¹¹ Reliability means trustworthiness. Daubert, 509 U.S. at 590 n.9. Relevance means being “sufficiently tied to the facts of the case that it will aid the [trier of fact] in resolving a factual dispute.” Id. at 591.

To be reliable, an opinion must have a sufficient basis in “the knowledge and experience of [the relevant] discipline.” Kumho Tire, 1999 U.S. LEXIS 2189, at *21 (alteration in original). Knowledge is “[a] body of known facts or [a] body of ideas inferred from such facts or accepted truths on good grounds.” Daubert, 509 U.S. at 590. Thus, an opinion must be based on “more than subjective belief or unsupported speculation.” Id.

¹¹ Expert opinion must also not be within the common knowledge of lay persons. E.g., Evans v. Mathis Funeral Home, Inc., 996 F.2d 266, 268 (11th Cir. 1993).

It must also not rest on demonstrably false premises or faulty logic. See In re Air Crash Disaster at New Orleans, 795 F.2d 1230, 1233-35 (5th Cir. 1986) (testimony “unsupported by the record and completely incredible,” “abusive of the known facts”); Daubert, 509 U.S. at 590 & n.9 (to be “valid”, an asserted scientific principle must support what it purports to show). If an expert opinion is not based on firsthand knowledge, it must be based only on “facts or data . . . ‘of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject.’” Daubert, 509 U.S. at 595 (quoting Fed. R. Evid. 703) (emphasis added). “[The objective] is to make certain that an expert . . . employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” Kumho Tire, 1999 U.S. LEXIS 2189, at *25.¹²

c) Requirements for Summary Disposition Affidavits

Expert affidavits must satisfy the requirements for affidavits in support of summary disposition as well as containing reliable and relevant opinions. Duplantis, 948 F.2d at 191-92; see 10 C.F.R. § 2.749(b). Thus, the affidavit must not contain inadmissible hearsay, it must set forth specific facts rather than mere conclusions, and it must show the absence or presence of genuine issues regarding material facts. See id. While expert opinions may be based on hearsay reasonably relied upon by other experts in a field, Fed.

¹² Thus, reliability can be inferred from the qualifications, i.e., training and experience, of the testifying expert. United States v. Jones, 107 F.3d 1147, 1160-61 (6th Cir.), cert. denied, 521 U.S. 1127 (1997); see Kumho Tire, 1999 U.S. LEXIS 2189, at *22.

R. Evid. 703, an expert opinion must be the opinion of the affiant; it must not merely recite the opinions of others.¹³

To determine whether an expert opinion raises a genuine issue regarding a material fact, a board or court "must 'look behind [the expert's] ultimate conclusion . . . and analyze the adequacy of its foundation.'" Mid-State Fertilizer Co. v. Exchange Nat'l Bank of Chicago, 877 F.2d 1333, 1339 (7th Cir. 1989). "Scientific evidence and expert testimony must have a traceable, analytical basis in objective fact before it may be considered on summary judgment." Bragdon v. Abbott, 118 S. Ct. 2196, 2212 (1998). Thus, if an expert affidavit does not contain the facts and reasons supporting the expert's opinion, it will be excluded outright as not useful, Fed. R. Evid. 702, or will be deemed not to raise a genuine issue regarding a material fact, Fed. R. Civ. P. 56(c); 10 C.F.R. § 2.749(a). Mid-State Fertilizer, 877 F.2d at 1339; Harris, *supra* note 11, LBP-84-7, 19 NRC at 447; *see* Richardson v. Richardson-Merrell, Inc., 857 F.2d 823, 829 (D.C. Cir. 1988), *cert. denied*, 493 U.S. 882 (1989) (looking behind conclusions); 10 C.F.R. § 2.749(b) (affidavits "must set forth specific facts").¹⁴ Hence, expert affidavits that are

¹³ *See* Engelbrechtsen v. Fairchild Aircraft Corp., 21 F.3d 721, 728-29 (6th Cir. 1994). The expert must "say 'what he thinks,' not what 'someone else thinks.'" 3 Mueller and Kirkpatrick, *supra*, § 357 at 686. Hearsay opinions "can be used only as the basis for the expert's opinion and not for the truth of the matter asserted." United States v. Affleck, 776 F.2d 1451, 1457 (10th Cir. 1985). Thus, for example, a published work, itself, is inadmissible without an affidavit from the author. Carolina Power & Light Company and North Carolina Eastern Municipal Agency (Shearon Harris Nuclear Plant, Units 1 and 2), LBP-84-7, 19 NRC 432, 436 (1984).

¹⁴ *But see* Kerr-McGee, ALAB-944, 33 NRC at 146 n.308 (expert affidavit requires factual basis but not "underlying factual details and the reasoning upon which the opinion is based"). However, if it is impossible for the court to evaluate the soundness of an opinion without supporting facts or reasoning, a court may subsequently require the expert to provide them. M&M Medical Supplies & Service, Inc. v. Pleasant Val-

merely unsupported conclusions will be rejected out of hand. Seabrook, LBP-83-32A, 17 NRC at 1177; Pennsylvania Dental Assoc. v. Medical Service Assoc., 745 F.2d 248, 261-62 (3d Cir.), cert. denied, 471 U.S. 1016 (1985).¹⁵

Finally, once a board has admitted an affidavit containing an expert opinion in opposition to a motion for summary disposition, it must determine whether that affidavit is sufficient to support or defeat the motion, i.e., whether it contains "contrary evidence that is so significantly probative that it creates a material factual issue." Advanced Medical Systems, CLI-93-22, 38 NRC at 102 & n.13 (citing Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), 35 NRC 145, 154 (1992); see Daubert, 509 U.S. at 596 (if "the scintilla of evidence presented supporting a position is insufficient to allow a reasonable juror to conclude that the position more likely than not is true, the court remains free to . . . grant summary judgment"); Gulf States Utilities Company (River Bend Station, Unit 1), LBP-95-10, 41 NRC 460, 469-73 (1995) (weighing sufficiency of expert opinions). Therefore, for example, where expert opinions submitted by opposing parties differ, a board may weigh the support for the opinions and the relative qualifications and experiences of the experts in determining the existence of a genuine issue. See Shearon Harris, LBP-84-7, 19 NRC at 453-54.

ley Hosp., Inc., 981 F.2d 160, 165 (4th Cir. 1992), cert. denied, 508 U.S. 972 (1993). Failure to provide such information upon request is grounds for exclusion of the affidavit. Claar v. Burlington Northern R.R., 29 F.3d 499, 502 (9th Cir. 1994).

¹⁵ The provision of Federal Rule of Evidence 705 that allows an expert to testify to conclusions at trial does not allow conclusory affidavits to support summary judgment. M&M Medical Supplies, 981 F.2d at 165.

6. Documents

A document may serve to establish a material fact to be considered in summary disposition, but ordinarily, because it is hearsay, it must be submitted under an affidavit of an individual competent to testify to its contents or who is an expert in its subject matter. See Perry, ALAB-443, 6 NRC at 755; Engelbrechtsen, supra note 13, 21 F.3d at 728-29 (rules of evidence allow expert testimony based on hearsay documents but not admission of documents themselves). A board is under no obligation to consider documents merely quoted or cited in support of a motion without an affidavit. Shearon Harris, LBP-84-7, 19 NRC at 435-36, 458-59; see First Nat'l Life Ins. Co. v. California Pac. Life, 876 F.2d 877, 881 (11th Cir. 1989), reh'g denied, en banc, 887 F.2d 1093 (unsworn documents not considered). Nor need it consider unauthenticated documents. Id. A board may disregard technical documents whose content is not scientifically valid, even when submitted under affidavit, similarly to the way it can exclude invalid expert testimony. See Shearon Harris, LBP-84-7, 19 NRC at 452-54, 456, 463 (disregarding documents); Daubert, 509 U.S. at 593-95 (test for scientific validity).

IV. THE APPLICANT IS ENTITLED TO SUMMARY DISPOSITION OF CONTENTION UTAH C

PFS is entitled to summary disposition of Utah C because there remains no genuine issue as to any material fact relevant to the contention. Pursuant to new NRC staff guidance, issued after PFS submitted its application and after the Board admitted Utah C, PFS has performed a new analysis of the projected radiation dose associated with a pos-

tulated loss of confinement accident during the storage of the spent fuel at the ISFSI. That new analysis renders the contention moot.¹⁶ Where a contention is rendered moot by events occurring after its admission, summary disposition is warranted.¹⁷

Basis 1 for Utah C is now moot because PFS's new calculation no longer uses any assumptions from NUREG-1536 or SAND80-2124. Hennessy Aff. at ¶ 6; see Section II, supra. Specifically, PFS uses new Staff guidance regarding fission product release from the fuel, in lieu of NUREG-1536. Id. It also no longer assumes that 90 percent of the volatile fission products that would be released from the spent fuel in an accident would be retained in the canister. In the new calculation, "[n]o credit was taken for holdup (plateout, deposition, etc.) of particulates or volatile fission products released from the fuel inside the canister." Id. (quoting Response to Request for Additional Information, RAI 7-1 at 2).¹⁸ Thus, this issue is moot and PFS is entitled to summary disposition.

Basis 2 for Utah C is now moot because PFS's new calculation no longer uses the assumption, contained in SAND80-2124, that only five percent of the isotopes Co-60 and Sr-90 released from the fuel will be respirable by a human. See Section II, supra. In the new calculation, "the respirable fraction of the material released for all radionuclides is

¹⁶ PFS does not concede that such an accident is credible. It performed the analysis to define an upper bound for accident consequences pursuant to NRC Staff guidance. See Hennessy Aff. ¶ 3.

¹⁷ See Seabrook, CLI-92-8, 35 NRC at 154; Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-945, 33 NRC 175, 177 (1991).

¹⁸ Submitted under letter from John D. Parkyn, Chairman, Private Fuel Storage, to Director, Office of Nuclear Material Safety and Safeguards, USNRC (Feb. 10, 1999). Hereinafter "RAI Resp. 7-1."

assumed to be 1.0,” or 100 percent. Hennessy Aff. at ¶ 7 (quoting RAI Resp. 7-1 at 2).

Thus, this issue is also moot and PFS is entitled to summary disposition.

Basis 3 for Utah C is now moot because PFS’s new calculation does consider potential radiation doses from applicable environmental pathways following the deposition of radioactive material in the plume from an accident, as claimed necessary by the State in subpart 3 of Utah C, in addition to doses from inhalation and direct shine from the passing plume. Hennessy Aff. at ¶ 8 (quoting RAI Resp. 7-1 at 3-4).¹⁹ The calculation “includes direct exposure to contaminated ground, inhalation of resuspended radioactive material, ingestion of milk and beef following grazing, and ingestion of soil.” Id. (quoting RAI Resp. 7-1 at 4).²⁰ Thus, this issue is also moot (PFS has addressed other applicable dose pathways as urged by the State) and PFS is entitled to summary disposition.

In short, as demonstrated in the Hennessy Affidavit, PFS’s new accident dose calculation renders moot each of the issues raised by the State in Utah C. Therefore, PFS is entitled to summary judgment as a matter of law.

¹⁹ See also RAI Resp. 8-4 (showing that dose from environmental pathways is not significant compared to that from direct inhalation of material from the passing plume).

²⁰ Water was not included as an applicable dose pathway because such a pathway would need to involve surface drinking water to be of any significance and “[t]here are no public or private surface drinking water supplies in the PFSF vicinity.” Hennessy Aff. at ¶ 8, quoting PFSF ER at Section 2.5.1

V. THE TIME FOR CHALLENGING THE ADEQUACY OF PFS' NEW DOSE CALCULATION HAS PASSED

In addition to the issues raised in Contention Utah C being moot as shown, the time has passed for any intervenor to challenge PFS's new dose calculation (and hence argue that genuine issues as to material facts remain). If any party had wished to challenge the adequacy of the calculation, it should have filed a new contention after the calculation became available. See Duke Power Company (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045 (1983). Such filing would have had to satisfy the requirements for late-filed contentions. See id.; Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-99-3, 49 NRC __, __, slip op. at 7 (1999).

Since the new calculation has been available to the intervenors for more than two months, Hennessy Aff. at ¶ 4, any such filing made now would lack good cause and should be rejected. See Private Fuel Storage, LBP-99-3, 49 NRC __, __, slip op. at 8 (45 days late was "approaching the outer boundary of 'good cause'"). See also, Board Memorandum and Order ("General Schedule for Proceeding and Associate Guidance"), dated June 29, 1998 at 5 ("any contentions based on [the SERs or DEIS/FEIS] should be submitted no later than thirty days after these documents are made available to the public").²¹

²¹ The NRC Staff is to alert intervenors of its intention to make its SER or DEIS/FEIS publicly available 15 days before doing so. June 28, 1998 Memorandum and Order at 5. In a similar fashion, PFS informed the State in January that it was going to file its response to the RAIs in mid-February by serving the State (and the other parties) with a copy of its letter to the NRC Staff indicating an intent to do so. Letter from John Parkyn, Chairman, PFS, to Director, Office of Nuclear Material Safety and Safeguards, USNRC (Jan. 21, 1999).

Therefore, no party should be allowed to come forward to challenge PFS's calculation at this late date. Thus, regardless of any belated attack on the adequacy of PFS's calculation, PFS is entitled to summary disposition of this contention Conclusion

For the forgoing reasons, the Board should grant the Applicant summary disposition with respect to the issues raised in Contention Utah C.

Respectfully submitted,



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Dated: April 21, 1999

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
)	
(Private Fuel Storage Facility))	

STATEMENT OF MATERIAL FACTS
ON WHICH NO GENUINE DISPUTE EXISTS

The Applicant submits, in support of its motion for summary disposition of Utah C, this statement of material facts as to which the Applicant contends that there is no genuine issue to be heard.

1. PFS's initial License Application dated June 20, 1997, calculated radiation doses resulting from a postulated loss of confinement event for a canister storing spent fuel at the PFSF.
2. On November 23, 1997, the State of Utah filed as part of its contentions, Contention Utah C, challenging the adequacy of PFS's calculation of accident doses.
3. In its Memorandum and Order of April 22, 1998, LBP-98-7, the Licensing Board admitted Contention Utah C in part as follows:

The Applicant has failed to demonstrate a reasonable assurance that the dose limits specified in 10 C.F.R. § 72.106(b) can and will be complied with in that:

1. License Application makes selective and inappropriate use of data from NUREG-1536 for the fission product release fraction.

2. License Application makes selective and inappropriate use of data from SAND80-2124 for the respirable particle fraction.
3. The dose analysis in the License Application only considers dose due solely to inhalation of the passing cloud. Direct radiation and ingestion of food and water are not considered in the analysis.
4. In its original dose calculation, PFS had used the fission product release fractions from NUREG-1536. PFS had also assumed that 90 percent of the particulates and volatile fission products that were released from the spent fuel would be held up in the canister through plate-out or deposition.
5. In subpart 1 of Utah C, the State claimed that the PFS calculation "makes selective and inappropriate use of data from NUREG-1536 for the fission product release fraction." In its bases related to subpart 1, the State asserts that it was inappropriate for PFS to use the assumption that 90 percent of the volatile fission products released from the spent fuel would be retained in the canister through plate-out or deposition.
6. In its response to RAI 7-1, dated February 10, 1999, PFS filed a new dose calculation for a postulated loss of confinement event in accordance with new guidance issued by the NRC Staff. That new calculation does not rely on NUREG-1536 or SAND80-2124 in any way.
7. In its new calculation, PFS does not use the fission product release fractions from NUREG-1536.
8. PFS now uses the fission product release fractions from NUREG 1617 in accordance with the new NRC Staff guidance, ISG-5.
9. In its new calculation, PFS does not assume that 90 percent of the volatile fission products or particulates released from the spent fuel would be retained in the canister through plate-out or deposition.
10. PFS now takes no credit for holdup (plateout, deposition, etc.) of particulates or volatile fission products released from the fuel inside the canister. PFS now assumes that 100 percent of the particulate and volatile fission products from the spent fuel are available for release.

11. In PFS's original calculation, PFS assumed based on information from the SAND80-2124 that only five percent of the isotopes Co-60 and Sr-90 released from the spent fuel would be respirable by a human.
12. The State in its bases related to Subpart 2 of Utah C asserts that the assumption that only five percent of the isotopes Co-60 and Sr-90 released from the fuel will be respirable by a human is invalid.
13. In its new dose calculation, PFS no longer uses the assumption, contained in SAND80-2124, that only five percent of the isotopes Co-60 and Sr-90 released from the fuel will be respirable by a human.
14. In PFS's new dose calculation, the respirable fraction of the material released for all radionuclides is assumed to be 1.0, or 100 percent.
15. In PFS's original calculation, PFS calculated the radiation doses based on inhalation and did not consider secondary environmental dose pathways such as ingestion of food and water.
16. The State in subpart 3 of Contention C asserts that PFS's original dose calculation is inadequate because it only considered doses due solely to inhalation of the passing cloud and did not consider direct radiation and ingestion of food and water in the analysis.
17. In PFS's new dose calculation, PFS does consider other applicable dose pathways in addition to inhalation from the passing cloud, specifically direct exposure to contaminated ground, inhalation of resuspended radioactive material, ingestion of milk and beef following grazing, and ingestion of soil.
18. Water is not an applicable dose pathway here because it would need to involve surface drinking water to be of any significance and there are no public or private surface drinking water supplies in the PFSF vicinity.

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
)	
(Private Fuel Storage Facility))	

AFFIDAVIT OF WILLIAM HENNESSY

CITY OF CHARLOTTE)	
)	
STATE OF NORTH CAROLINA)	

William Hennessy, being duly sworn, states as follows:

1. I am the Assistant Project Manager and Lead Licensing Engineer with Stone & Webster Engineering Corporation (Stone & Webster) for the Private Fuel Storage Facility (PFSF). Stone & Webster is the architect-engineer for the PFSF. My professional and educational experience is summarized in the curriculum vitae attached as Exhibit 1 to this affidavit.
2. In my capacity as Stone & Webster Assistant Project Manager and Lead Licensing Engineer for the PFSF, I oversaw the preparation and am knowledgeable of the radiation dose calculations prepared on behalf of Private Fuel Storage, L.L.C. (PFS) for the licensing of the PFSF by the Nuclear Regulatory Commission (NRC). I am also familiar with Contention Utah C raised by the State of Utah in the NRC licensing hearing for the PFSF.
3. Based on then existing NRC Staff guidance, the PFS initial License Application dated June 20, 1997, analyzed the dose consequences for a postulated loss of confinement accident assuming a hypothetical, non-mechanistic breach of a canister storing spent fuel at the

PFSF. The fission product release fractions from NUREG-1536 were used in performing this calculation. It was further assumed, based on information from Sandia National Laboratories Report SAND80-2124, "Transportation-Accident Scenarios for Commercial Spent Fuel," that 90 percent of the particulate and volatile fission products of various radionuclides (Co-60, Sr-90, I-129, Ru-106, Cs-134, and Cs-137) released from spent the fuel assemblies would be held up within the breached canister and would not escape to the atmosphere. PFSF Safety Analysis Report (SAR), Section 8.2.7.2. It was also assumed, based on information from SAND80-2124, that only 5 percent of the isotopes Co-60 and Sr-90 were of a size that would be respirable by a person. SAR at Section 8.2.7.3. On that basis, PFS calculated the total effective dose equivalent resulting from this hypothetical canister breach to an individual assumed to be located at the closest point on the boundary of the Owner Controlled Area from inhalation of radionuclides in the plume and exposure to direct radiation from the plume (submersion). Secondary environmental pathways, such as direct exposure to contaminated soil, inhalation and ingestion of contaminated soil, and ingestion of milk and beef from animals that have grazed on grass/fodder grown in contaminated soil, were not included in this calculation because the contribution from such pathways was believed to be negligible.

4. In its second round Requests for Additional Information (RAI) dated December 10, 1998, the NRC requested PFS in RAI 7-1 to analyze the dose consequences for a postulated loss of confinement accident in accordance with the most recent Staff guidance provided in Interim Staff Guidance 5 (ISG 5) (October 6, 1998) which provides for the calculation of radiation doses resulting from canister leakage, with the leak rate based in part on the closure lid weld helium leak test acceptance criteria. PFS performed the analysis of the canister leak accident in accordance with ISG-5 for hypothetical accident conditions, and submitted the results of this analysis (which constitutes the new PFSF licensing basis for accident dose consequences) in its response to RAI 7-1. PFS's response to RAI 7-1, filed under cover letter dated February 10, 1999, is attached as Exhibit 2 to this affidavit. A copy of PFS's responses to the second round RAIs, including PFS's response to RAI 7-1, was sent to the State of Utah via overnight mail on February 11, 1999. A copy of the calculations and other backup to PFS's responses, including the backup calculations for PFS's response to RAI 7-1, were sent to the State for next business day delivery on February 13, 1999.

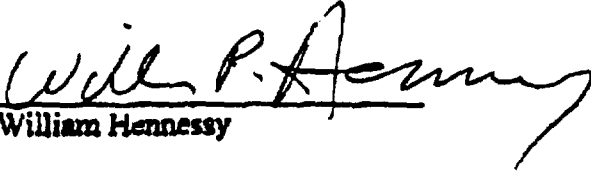
5. I have reviewed the State's bases underlying the three subparts of Contention Utah C as well as the contention itself. PFS's new calculation of radiation doses described in PFS's response to RAI 7-1 addresses the issues raised in each of the three subparts of Utah C.

6. In subpart 1 of Utah C, the State claims that PFS's original calculation "makes selective and inappropriate use of data from NUREG-1536 for the fission product release fraction." PFS's new calculation, however, no longer uses the fission product release fraction from NUREG-1536, but now relies on NUREG 1617 for the release fraction in accordance with ISG-5. Nor does PFS's new calculation rely on NUREG-1536 in any other respect. In its bases to subpart 1 of Utah C, State specifically takes issue with the assumption used in PFS's original calculation that 90 percent of the volatile fission products assumed to be released from the spent fuel would plateau or holdup in the canister and therefore could not escape into the environment. In PFS's new calculation, however, "[n]o credit was taken for holdup (plateout, deposition, etc.) of particulates or volatile fission products released from the fuel inside the canister." Response to RAI 7-1, at 2. Rather, the calculation conservatively assumes that 100% of these radionuclides assumed to be released from the spent fuel rods are available for release from the canister.


7. In subpart 2 of Utah C, the State takes issue with the assumption used in PFS's original calculation that only 5 percent of the isotopes Co-60 and Sr-90 released from the spent fuel will be of respirable size. PFS's new calculation no longer uses, however, the assumption contained in SAND80-2124 that only five percent of the isotopes Co-60 and Sr-90 released from the spent fuel will be respirable, nor does it rely on SAND80-2124 in any other respect. Rather, in PFS's new calculation "the respirable fraction of the material released for all radionuclides is assumed to be 1.0," or 100 percent. Response to RAI 7-1, at 2.

8. In subpart 3 of Utah C, the State takes issue with PFS's original calculation because it did not consider dose pathways from direct radiation and ingestion of food and water. PFS's new calculation, however does calculate the potential radiation doses from applicable environmental pathways following the deposition of radioactive material in the plume from an accident, in addition to doses from inhalation and direct shine from the passing plume. Response to RAI 7-1, at 3-4. The new calculation "includes direct exposure to contaminated ground,

inhalation of resuspended radioactive material, ingestion of milk and beef following grazing, and ingestion of soil." Response to RAI 7-1, at 4. Water was not included as an applicable dose pathway because such a pathway would need to involve surface drinking water to be of any significance. As stated in Section 2.5.1 of the PFSF Environmental Report, however, "[t]here are no public or private surface drinking water supplies in the PFSF vicinity. . . . Consequently, there is no potable surface water supply that could be subject to normal or accidental effluents from the facility."


William Hennessy

Sworn to before me this 21 day of April 1999.


Notary Public

My Commission expires _____

My Commission Expires Nov. 25, 2001