UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

OFFICE OF THE
GENERAL COUNSEL

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USNRC

May 25, 2004 (4:06PM)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

RAS 7829

May 24, 2004

Michael C. Farrar, Chairman
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Peter S. Lam
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Paul B. Abramson, Esq.
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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

Dear Administrative Judges:

On April 20, 2004, the NRC Staff ("Staff") served upon the Atomic Safety and Licensing Board, Counsel for the State of Utah ("State") and Counsel for Private Fuel Storage, L.L.C. ("PFS") the Staff's evaluation of F-16 aircraft crash angles and speeds entitled, "NRC Staff's Evaluation of Aircraft Impact Speeds and Angles Considered by Private Fuel Storage, LLC in its Analyses of Skull Valley Type Events" (Campe, K. M., Ghosh, A., April 20, 2004).

The Staff has identified several inadvertent errors or omissions in Tables 2 and 3 of that report (and in various Figures related to Table 3), which it wishes to correct at this time. Enclosed are nine replacement pages which should be inserted in your copies of that report, in lieu of incorrect pages 13, 18, 22, 23, 33, 34, 36, 37, and 38. Copies of the corrected pages were distributed to Counsel for PFS and the State earlier today.

We regret any inconvenience which this error may have caused.

Sincerely,

Sherwin E Turk

Sherwin E. Turk
Counsel for NRC Staff

cc w/Encl.: Service List

Table 2. Ground impact angles.

Exhibit No.	Accident Date	NRC	PFS
		Impact Angle (degree)	Impact Angle (degree)
PE 80	25 May 1990	11*	11
PE 113	3 September 1990	65*	65
PE 115	20 September 1990	5**	≤45
PE 125	4 April 1991	90**	85
PE 133	27 November 1991	5**	≤45
JE 4	16 December 1991	25.5***	24
PE 134	13 January 1992	17.9***	6.6
JE 6	18 September 1992	13**	21
PE 156	11 August 1993	18***	10
PE 162	9 November 1993	14***	8
PE 172	1 July 1994	1**	≤45
PE 173	20 September 1994	14.7***	4.2
PE 174	25 October 1994	9**	30
PE 175	13 January 1995	5**	11
PE 177	5 February 1995	7*, ***	7
PE 183	21 December 1995	5**	5
PE 189	4 February 1997	34**	35
PE 191	21 April 1997	5**	5
PE 192	12 May 1997	10**	≤45
PE 198	8 January 1998	21.5***	15

Code:
* accidents with directly reported impact angles
** impact angles estimated from documented flight path descent information (e.g., rate of altitude loss, vertical and horizontal speed components, shallow descent description)
*** use of documented angle of attack and pitch angle

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Table 3. NRC estimated ground impact speed data.

Exhibit No.	Accident Date	Estimated Impact Speed (knot)	Comment
PE 80	25 May 1990	476	Gwynne, et al.
JE 1	26 December 1989	213	Used Equation (4)
PE 110	3 April 1990	204	Gwynne, et al.
PE 113	3 September 1990	277	Gwynne, et al.
PE115	20 September 1990	265	Used Equation (4)
PE 118	13 January 1991	150	Gwynne, et al.
PE 119	15 January 1991	256	Used Equation (5)
JE 3	20 February 1991	173	Used Equation (5)
PE 124	19 March 1991	150	Gwynne, et al.
PE 125	4 April 1991	217	Gwynne, et al.
PE 127	18 April 1991	219	Used Equation (4)
PE 130	17 July 1991	216	Used Equation (4)
PE 133	27 November 1991	190	Used Equation (5)
JE 5	31 May 1992	295	Used Equation (4)
PE 140	31 August 1992	217	Used Equation (5)
PE 141	1 September 1992	217	Used Equation (5)
PE 143	22 October 1992	208	Used Equation (4)
PE 145	17 December 1992	225	Used Equation (4)
PE 147	19 February 1993	150	Gwynne, et al.
PE 148	23 February 1993	220	Used Equation (4)
PE 158	11 September 1993	150	Gwynne, et al.
PE 172	1 July 1994	219	Used Equation (4)
PE 179	15 May 1995	198	Used Equation (4)
PE 180	25 June 1995	212	Used Equation (4)
PE 181	13 July 1995	304	Used Equation (4)
PE 182	21 August 1995	274	Used Equation (4)

1

REV. 1 (05/04)

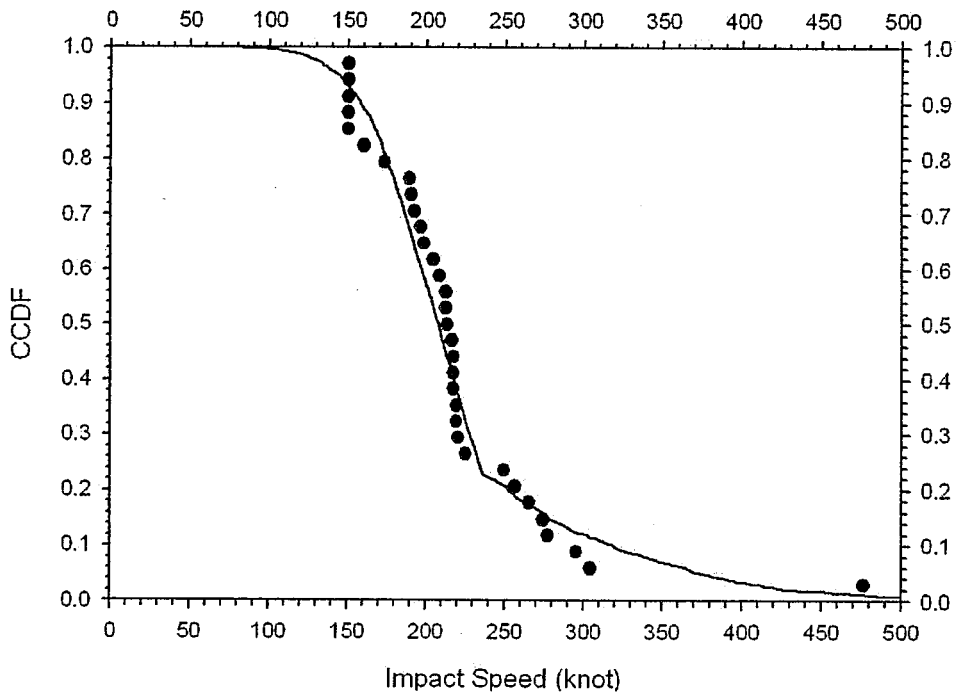

Figure 2. CCDF plot using Staff estimated data set.

REV. 1 (05/04)

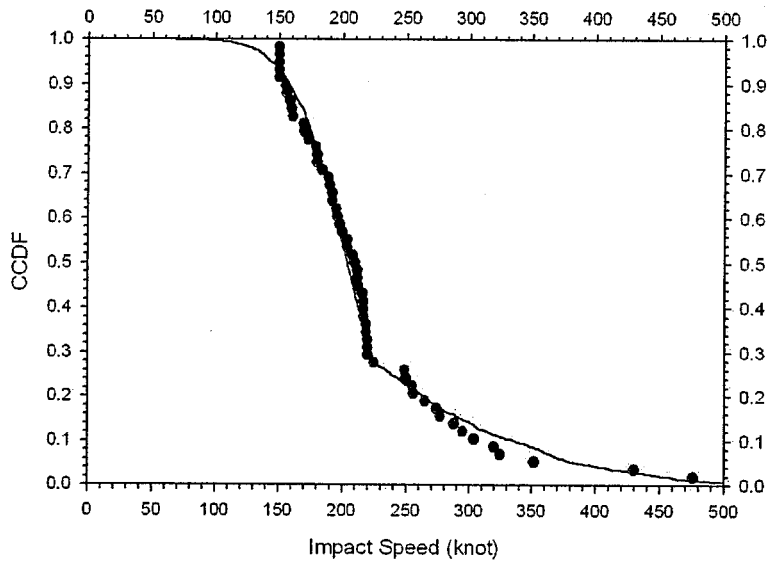

Figure 3. CCDF plot using Staff documented and estimated data sets combined.

REV. 1 (05/04)

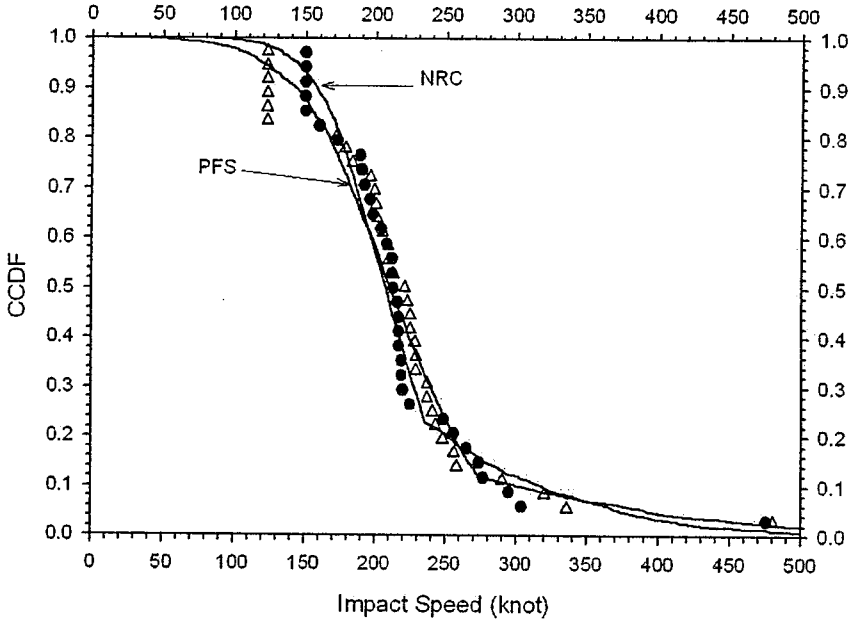

Figure 11. Comparison of Staff and PFS CCDF curves using estimated data sets.

REV. 1 (05/04)

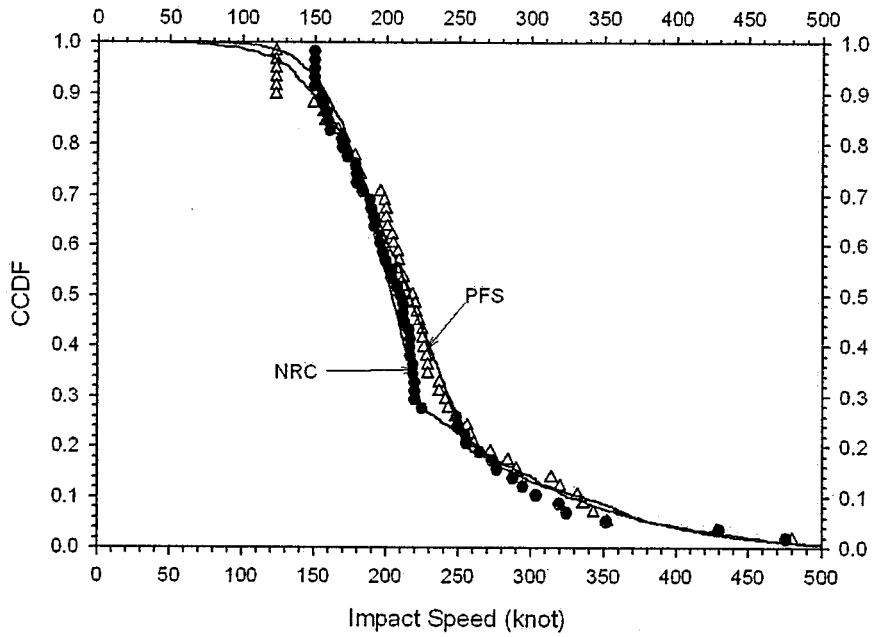

Figure 12. Comparison of Staff and PFS CCDF curves using combined documented and estimated data sets.

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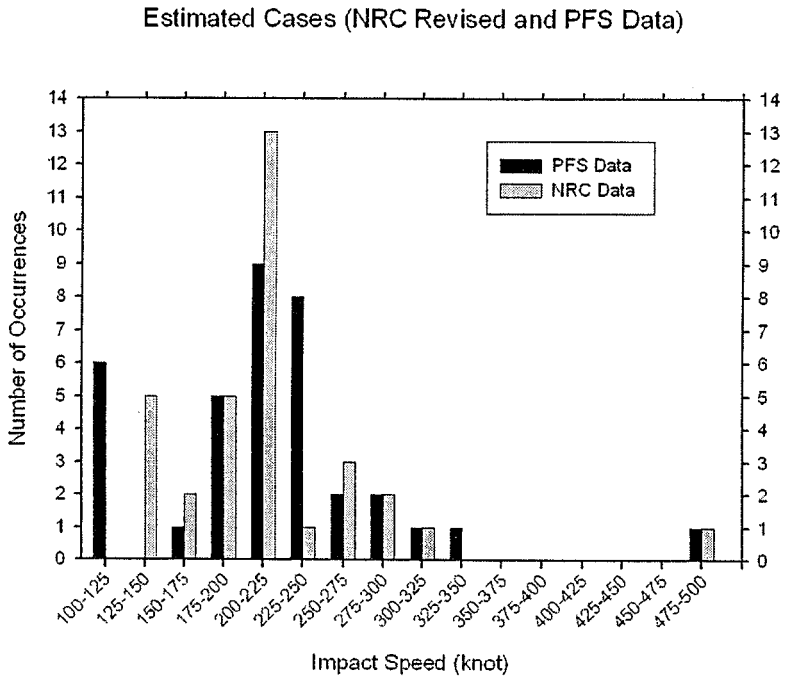

Figure 14. Comparison of Staff and PFS F-16 estimated impact speed distributions.

REV.1 (05/04)

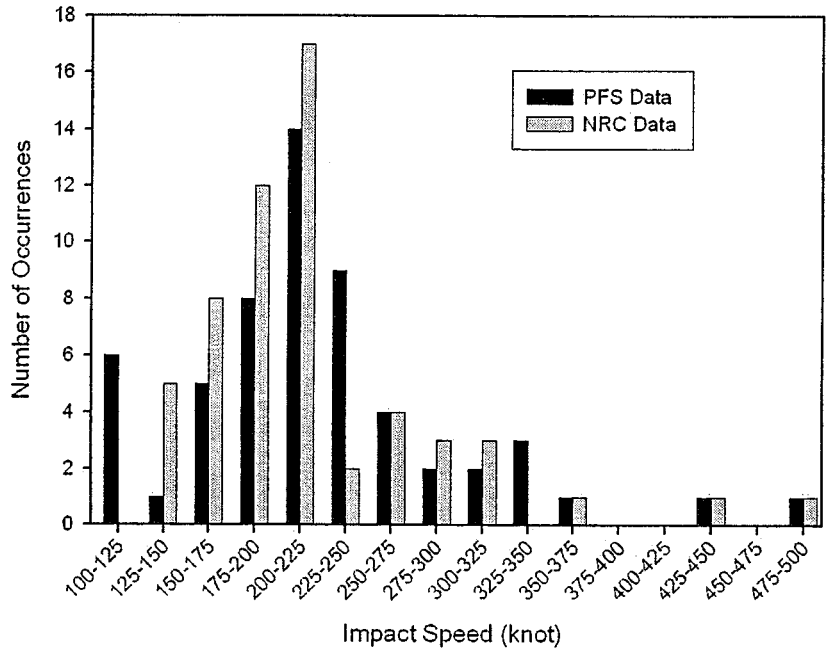

Figure 15. Comparison of Staff and PFS F-16 combined (documented and estimated) impact speed distributions.

REV.1 (05/04)

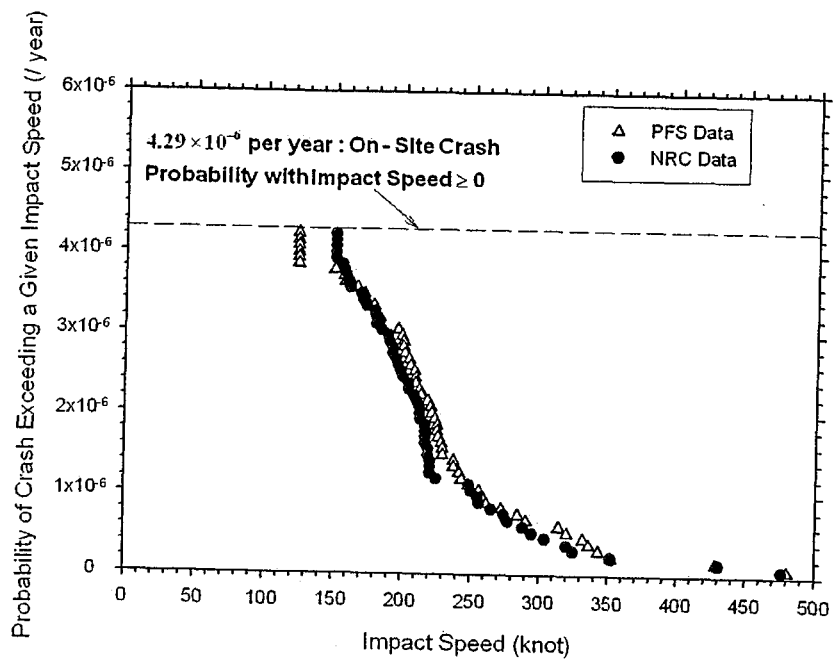

Figure 16. Cumulative on-site crash probability (Staff and PFS data) for crashes with an impact speed exceeding a given value, assuming a total crash probability of 4.29×10^{-6} per year.

REV.1 (05/04)