

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

NRC STAFF'S BRIEF IN RESPONSE TO CLI-02-03,
CONCERNING THE COMMISSION'S REVIEW
OF THE REFERRED RULING IN LBP-01-37

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TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

INTRODUCTION 1

BACKGROUND 2

ARGUMENT 5

I. The Licensing Board Correctly Denied Admission of Contention Utah RR 5

 A. Legal Standards Governing the Admission of Contentions 5

 B. The Licensing Board Correctly Determined That Contention Utah RR Presents An Impermissible Attack on Commission Regulations 6

 C. The Licensing Board Correctly Determined That Contention Utah RR Fails to Raise an Admissible Issue Under NEPA 14

II. An Evaluation of Intentional Malevolent Acts Is Not Required in an Environmental Evaluation Under NEPA 16

 A. The Statutory and Regulatory Framework: NEPA and 10 C.F.R. Part 51 17

 B. Under NEPA, An Agency is Required to Provide a Detailed Evaluation of “Reasonably Foreseeable” Effects or Impacts, Subject to a Rule of Reason 19

 C. Intentional, Malevolent Acts, Such as the September 11 Attacks, Do Not Constitute “Reasonably Foreseeable” Impacts Resulting From the Licensing of A Nuclear Facility and Are Not Amenable to “Meaningful Analysis” under NEPA 23

III. The Issues Raised in Contention Utah RR Should Be Considered On A Generic Basis, Rather Than in an Individual License Proceeding 33

CONCLUSION 34

TABLE OF AUTHORITIES

JUDICIAL DECISIONS

U.S. Supreme Court

Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc., 462 U.S. 87 (1983) 19, 34

Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766 (1983) 26, 27, 32

New York v. Kleppe, 429 U.S. 1307 (1976) 19

Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989) 24, 25, 33

Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519 (1978) 19

U. S. Court of Appeals

City of New York v. U.S. Dept. of Transportation, 715 F.2d 732 (2d Cir. 1983) 29, 30, 31, 32

Izaak Walton League of America v. Marsh, 655 F.2d 346 (D.C. Cir. 1981) 20

Limerick Ecology Action, Inc. v. NRC, 869 F.2d 719 (3d Cir. 1989) 14, 15, 19, 21, 22, 27, 28, 32, 33

Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827 (D.C. Cir. 1972) 19, 20

Natural Resources Defense Council v. NRC, 685 F.2d 459 (D.C. Cir. 1982) 31

Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission, 481 F.2d 1079 (D.C. Cir. 1973) 20, 24

Union of Concerned Scientists v. AEC, 499 F.2d 1069 (D.C. Cir. 1974) 34

U.S. District Court

Contra Costa County v. Pena, 1998 U.S. Dist. LEXIS 3711 (N.D. Cal. 1998) 31

Hirt v. Richardson, 127 F. Supp. 2d 833 (W.D. Mich. 1999) 31

North Dakota v. Andrus, 483 F. Supp. 255, 260 (D. N.Dak. 1980) 26

ADMINISTRATIVE DECISIONS

Commission:

Arizona Public Service Co. (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC 149 (1991) 5, 6

Curators of the University of Missouri (Trump-S Project), CLI-95-8, 41 NRC 386 (1995) 8

Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041 (1983) 5, 8

Duke Energy Corp. (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328 (1999) 6

Florida Power and Light Co. (Turkey Point Nuclear Generating Units No. 3 and No. 4), 4 AEC 9 (1967), *aff'd sub nom Siegel v. AEC*, 400 F.2d 778 (D.C. Cir. 1968) 12

Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-91-2, 33 NRC 61 (1991) 22

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-02-03, 55 NRC ____ (Feb. 6, 2002) *passim*

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC ____ (Dec. 28, 2001) 4, 9

Yankee Atomic Electric Co. (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235 (1996) 6

Atomic Safety and Licensing Appeal Board:

Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831 (1973) 14, 15

Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-812, 22 NRC 5 (1985) 8

Maine Yankee Atomic Power Co. (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003 (1973), *aff'd in part and remanded on other grounds*, CLI-74-2, 7 AEC 2 (1974) 13

<i>Philadelphia Electric Co.</i> (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681 (1985), <i>review declined</i> , CLI-86-5, 23 NRC 125 (1986), <i>aff'd sub nom Limerick Ecology Action, Inc. v.</i> <i>NRC</i> , 869 F.2d 719 (3d Cir. 1989)	15, 24, 27, 28
<i>Philadelphia Electric Co.</i> (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13 (1974)	5, 6, 13
<i>Public Service Co. of Indiana</i> (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167 (1976)	5
<i>Public Service Co. of New Hampshire</i> (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251 (1987)	16, 28
<i>Vermont Yankee Nuclear Power Corp.</i> (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29 (1989), <i>rev'd and remanded on</i> <i>other grounds</i> , CLI-90-4, 31 NRC 333 (1990)	21
 <u>Atomic Safety and Licensing Board:</u>	
<i>Dominion Nuclear Connecticut, Inc.</i> (Millstone Nuclear Power Station, Unit No. 3), LBP-02-05, 55 NRC ____ (Jan. 24, 2002)	16
<i>Duke Cogema Stone and Webster</i> (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC __ (Dec. 6, 2001), <i>reconsideration denied</i> , Memorandum and Order (Ruling on Motion to Reconsider) (Jan. 16, 2002)	16
<i>Duke Energy Corp.</i> (McGuire Nuclear Station, Units 1 & 2), LBP-02-04, 55 NRC ____ (Jan. 24, 2002)	16
<i>Louisiana Energy Services, L.P.</i> (Claiborne Enrichment Center), LBP-97-8, 45 NRC 367 (1997), <i>aff'd in part and rev'd in</i> <i>part on other grounds</i> , CLI-98-3, 47 NRC 77 (1998)	21
<i>Louisiana Power and Light Co.</i> (Waterford Steam Electric Station), LBP-82-100, 16 NRC 1550 (1982), <i>aff'd</i> , ALAB-732, 17 NRC 1076 (1983)	21
<i>Private Fuel Storage, L.L.C.</i> (Independent Spent Fuel Storage Installation), LBP-01-37, 54 NRC ____ (Dec. 13, 2001)	<i>passim</i>
<i>Private Fuel Storage, L.L.C.</i> (Independent Spent Fuel Storage Installation), LBP-01-03, 53 NRC __ (Jan. 31, 2001)	1
<i>Private Fuel Storage, L.L.C.</i> (Independent Spent Fuel Storage Installation), LBP-99-34, 50 NRC 168 (1999)	14

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation),
LBP-98-13, 47 NRC 360, *modified on other grounds*, LBP-98-17,
48 NRC 69 (1998) 3

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation),
LBP-98-10, 47 NRC 288 (1998) 3, 16, 28

Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation),
LBP-98-7, 47 NRC 142, *modified*, LBP-98-10, 47 NRC 288, 296 (1998) 3, 6, 7,
16, 28

STATUTES:

Atomic Energy Act of 1954, as amended,
Section 161b, 42 U.S.C. § 2201(b) 34

National Environmental Policy Act of 1969,
42 U.S.C. § 4321, *et seq.* (“NEPA”) 1, 17

National Environmental Policy Act of 1969,
§ 102(2)(C), 42 U.S.C. § 4332(2)(C) 18

National Environmental Policy Act of 1969
§ 102(2)(A), 42 U.S.C. § 4332(2)(A) 18

P.L. 107-40, 115 Stat. 224 (Sept. 20, 2001) 3

REGULATIONS:

10 C.F.R. § 2.202 34

10 C.F.R. § 2.714(a)(1) 8

10 C.F.R. § 2.714(b) 5

10 C.F.R. § 2.714(b)(2) 5, 6

10 C.F.R. § 2.714(b)(2)(ii) 16

10 C.F.R. § 2.714(d)(2) 6

10 C.F.R. § 2.714(d)(2)(i) 5

10 C.F.R. §2.730(f) 4

10 C.F.R. § 2.758 12

10 C.F.R. § 2.758(a)	13
10 C.F.R. § 50.13	11
10 C.F.R. Part 50	12, 33
10 C.F.R. § 51.20	18
10 C.F.R. § 51.20(b)(9)	18
10 C.F.R. §§ 51.20 - 51.23	18
10 C.F.R. §§ 51.23	19
10 C.F.R. § 51.25	18
10 C.F.R. § 51.45	14
10 C.F.R. § 51.53(c)	18, 19
10 C.F.R. § 51.61	14
10 C.F.R. § 51.70	18
10 C.F.R. § 51.71	14, 18
10 C.F.R. § 51.90	18
10 C.F.R. § 51.91	18
10 C.F.R. § 51.95	19
10 C.F.R. §§ 51.100 - 51.104	18
10 C.F.R. Part 51	19
10 C.F.R. Part 51, Subpart A	18
10 C.F.R. § Part 51, Appendix B	19
10 C.F.R. Part 71	3, 14
10 C.F.R. § 72.34	14
10 C.F.R. § 72.40(a)(13)	13
10 C.F.R. §72.44(b)(2)	34

10 C.F.R. §72.60 34

10 C.F.R. §72.62 34

10 C.F.R. § 72.92 7

10 C.F.R. § 72.94 13

10 C.F.R. § 72.94(c) 13

10 C.F.R. § 72.106 13-14

10 C.F.R. §§ 72.120-130 13

10 C.F.R. § 72.180 9

10 C.F.R. § 72.184 9

10 C.F.R. Part 72 1, 3, 8,
9, 12, 18

10 C.F.R. Part 72, Subpart E 13

10 C.F.R. Part 72, Subpart F 13

10 C.F.R. § 73.51 8

10 C.F.R. § 73.51(b)(1) 10

10 C.F.R. § 73.51(b)(2) 10

10 C.F.R. § 73.51(b)(3) 10

10 C.F.R. § 73.51(d) 10

10 C.F.R. Part 73 3, 8, 9, 12

10 C.F.R. Part 73, Appendix C 9, 10

40 C.F.R. § 1502.16(a)-(b) 22

40 C.F.R. § 1502.22 23, 25, 33

40 C.F.R. § 1502.22(b)(4) 22

40 C.F.R. § 1502.22 (1985) 24

40 C.F.R. § 1508.8(a) 22

40 C.F.R. § 1508.08(b) 22

MISCELLANEOUS:

Draft Environmental Impact Statement (“DEIS”) (June 2000) 8

Final Rule, “National Environmental Policy Act Regulations; Incomplete
or Unavailable Information,” 51 Fed. Reg. 15,618 (April 25, 1986) 22-23, 24

Note, *Federal Agency Treatment of Uncertainty in Environmental Impact
Statements Under the CEQ’s Amended NEPA Regulation § 1502.22:
Worst Case Analysis or Risk Threshold?*, 86 Mich. L. Rev. 777 (1988) 25

Notice of Consideration and Notice of Opportunity for Hearing,
62 Fed. Reg. 41,099 (1997) 2

NRC Press Release No. 01-112 (Sept. 21, 2001)
 (“NRC Reacts to Terrorist Attacks”) 3

NRC Press Release No. 02-025 (Feb. 26, 2002)
 (“NRC Orders Nuclear Power Plants to Enhance Security“) 33

O’Meara Masterman, V., *Worst Case Analysis: The Final Chapter?*,
19 Env’tl. L. Rep. 10026 (1989) 31

Safety Evaluation Report Concerning the Private Fuel Storage
Facility (Sept. 29, 2000) 8

S.J. Res. 23, enacted as P.L. 107-40, 115 Stat. 224 (Sept. 20, 2001) 3

Statement of Consideration, “Changes to Requirements for Environmental
Review for Renewal of Power Plant Operating Licenses,”
64 Fed. Reg. 48,496 (1999) 31

Statement of Consideration, “Environmental Protection Regulations for
Domestic Licensing and Related Regulatory Functions and Related
Conforming Amendments,” 49 Fed. Reg. 9352 (1984) 22, 24

Statement of Consideration, “Physical Protection for Spent Nuclear Fuel
and High-Level Radioactive Waste,” 63 Fed. Reg. 26,955 (1998) 11, 12

Statement of NRC Chairman Dr. Richard A. Meserve before the Subcommittee
on Oversight and Investigations of the House Committee on Energy and
Commerce Concerning Nuclear Power Plant Security (Dec. 5, 2001) 33

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INTRODUCTION

In accordance with the Commission's Memorandum and Order of February 6, 2002,¹ the NRC Staff ("Staff") hereby presents its views concerning the referred ruling set forth in LBP-01-37,² in which the Licensing Board denied admission of a late-file contention filed by the State of Utah ("State") concerning the threat of terrorism at the independent spent fuel storage installation ("ISFSI"), and the specific question raised by the Commission in CLI-02-03. For the reasons discussed below, the Staff submits that (a) the Licensing Board correctly determined that the risk of terrorism does not establish the basis for an admissible contention under either 10 C.F.R. Part 72 or the National Environmental Policy Act of 1969, 42 U.S.C. § 4321, *et seq.* ("NEPA"); and (b) the risk of terrorism more appropriately should be addressed by the Commission on a generic

¹ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-02-03, 55 NRC ___ (Feb. 6, 2002) (accepting review of the Licensing Board's referred ruling in LBP-01-37, 54 NRC ___ (Dec. 13, 2001), in which the Board denied admission of a late-filed contention relating to the threat of a terrorist attack and establishing a schedule for briefing).

² *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-03, 53 NRC ___ (Jan. 31, 2001) ("Memorandum and Order (Rulings on Admissibility of Late-Filed Modification of Contention Utah L, Geotechnical, Basis 2; Referred Rulings and Certifying Question Regarding Admissibility)") (slip opinion).

basis. Accordingly, the Staff respectfully submits that the Licensing Board's ruling in LBP-01-37 should be affirmed.

BACKGROUND

This proceeding concerns the application of Private Fuel Storage, L.L.C. ("PFS" or "Applicant") to construct and operate an ISFSI on the Reservation of the Skull Valley Band of Goshute Indians, located within the boundaries of the State of Utah. That application, filed on June 25, 1997, was accompanied by a safety analysis report, environmental report, emergency plan, and physical security plan ("Security Plan").

On July 31, 1997, the Commission published in the *Federal Register* a Notice of Consideration and Notice of Opportunity for Hearing ("Notice") concerning the license application. See 62 Fed. Reg. 41,099 (1997). Petitions for leave to intervene and numerous contentions were then filed by various petitioners, including the State of Utah.³ Included among the State's initial contentions were four contentions that raised issues related to the potential for terrorism or sabotage;⁴ and other parties also filed contentions concerning potential terrorism or sabotage.⁵ Subsequently, the State filed nine additional contentions concerning the Applicant's Security Plan, including at least two contentions that expressly raised the issue of terrorism.⁶

³ See "State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, LLC for an Independent Spent Fuel Storage Facility" ("Initial Contentions"), dated November 23, 1997.

⁴ The State raised issues related to the potential for terrorism or sabotage in Contentions Utah C (Dose Limits), Utah U (Impacts of Onsite Storage), Utah V (Transportation Impacts), and Utah Z (No Action Alternative). See Initial Contentions at 18, 143, 152-54, and 169.

⁵ See, e.g., "Ohngo Gaudadeh Devia's ["OGD"] Contentions Regarding the Materials License Application of [PFS] in an [ISFSI]" (undated), Contentions A and C, at 1-3, 7, and 12-14; and "Statement of Contentions on Behalf of the Confederated Tribes of the Goshute Reservation and David Pete," dated November 23, 1997, Contention B, at 4.

⁶ See "State of Utah's Contentions Security-A Through Security-I Based on Applicant's Confidential Safeguards Security Plan" ("Security Plan Contentions"), dated January 3, 1998, (continued...)

On April 22, 1998, the Licensing Board ruled on the petitions to intervene and admissibility of contentions involving matters other than the PFS Security Plan;⁷ and on June 29, 1998, the Licensing Board ruled upon the admissibility of the State's Security Plan contentions.⁸ In its decisions, the Licensing Board rejected those portions of the State's contentions that raised issues concerning terrorism and sabotage, on the grounds, *inter alia*, that the contentions constituted an impermissible challenge to the Commission's regulations or generic rulemaking-associated determinations, including 10 C.F.R. Parts 71, 72 and 73. See LBP-98-7, 47 NRC at 179, 186, 199 and 201 (Contentions Utah C, U and V); LBP-98-10, 47 NRC at 296 (Contention Utah Z); and LBP-98-13, 47 NRC at 372 (Security-F and Security-G).

On September 11, 2001, four large commercial airplanes were hijacked in mid-air over the continental United States. Two of those airplanes were deliberately crashed into the twin towers of the World Trade Center in New York City, the third was deliberately crashed into the Pentagon, and the fourth crashed in western Pennsylvania.⁹ These events led to the filing, on October 10, 2001, of the State's request for admission of late-filed Contention Utah RR (Suicide Mission

⁶(...continued)

Contentions Security F (Intermodal Transfer) and Security-G (Terrorism and Sabotage), at 10-12 and 13-16, discussed in *Private Fuel Storage, L.L.C.* (Independent spent Fuel Storage Installation), LBP-98-13, 47 NRC 360, 371-72 (1998).

⁷ See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, *modified*, LBP-98-10, 47 NRC 288, 296 (1998).

⁸ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-13, 47 NRC 360, *modified on other grounds*, LBP-98-17, 48 NRC 69 (1998).

⁹ The events of September 11 have been deemed by the Congress to pose a threat to the national security and foreign policy of the United States. See *e.g.*, S.J. Res. 23, enacted as P.L. 107-40, 115 Stat. 224 (Sept. 20, 2001) (authorizing the use of United States armed forces against those responsible for the recent attacks launched against the United States). The Commission is well aware of those events, and is assessing the need to take the events into consideration as they may affect the licensing and regulation of nuclear facilities and materials. See, *e.g.*, NRC Press Release No. 01-112 (Sept. 21, 2001) ("NRC Reacts to Terrorist Attacks"). Similarly, the Staff is engaged in these and other efforts to address the events of September 11, consistent with the Commission's responsibility to assure protection of public health and safety.

Terrorism and Sabotage),¹⁰ as well as a motion to suspend this proceeding pending the Commission's review of its regulations in light of the events of September 11, 2001.¹¹

On December 13, 2001, the Licensing Board ruled upon the State's request to admit Late-Filed Contention Utah RR. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-01-37, 54 NRC ____ (Dec. 13, 2001) (slip op.). Therein, the Licensing Board denied the State's request to admit Contention Utah RR, on the grounds, *inter alia*, that it constituted an impermissible attack on the agency's physical protection regulations, and was not required to be addressed in an environmental impact statement ("EIS"). *Id.*, slip op. at 13 and n.3. Finally, recognizing that the Commission is undertaking a "top-to-bottom" review of its physical protection requirements, the Licensing Board referred its ruling to the Commission for review, pursuant to 10 C.F.R. §2.730(f). *Id.* at 14.

On February 6, 2002, the Commission issued its Memorandum and Order in CLI-02-03, in which it accepted the Licensing Board's referral of its ruling in LBP-01-37, requested briefs from the parties on relevant issues, including responses to the following question:

What is an agency's responsibility under NEPA to consider intentional malevolent acts, such as those directed at the United States on September 11, 2001?

(CLI-02-03, slip op. at 3).

For the reasons set forth below, the Staff submits that the Licensing Board correctly determined that Contention Utah RR presents an impermissible challenge to the Commission's regulations, and that the threat of terrorist attack need not be addressed in an EIS. Further, in

¹⁰ "State of Utah's Request for Admission of Late-Filed Contention Utah RR (Suicide Mission Terrorism and Sabotage)," dated October 10, 2001 ("Request").

¹¹ On October 10, 2001, the State also filed, before the Commission, the "State of Utah's Petition for Immediate Relief Suspending Licensing Proceedings" ("Suspension Petition"). That request was denied by the Commission. See *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-26, 54 NRC ____ (Dec. 28, 2001).

response to the Commission's question, the Staff submits that an agency is not required under NEPA to consider intentional malevolent acts, such as those directed at the United States on September 11, 2001, in the agency's environmental evaluation of a proposed licensing action.

ARGUMENT

I. The Licensing Board Correctly Denied Admission of Contention Utah RR.

A. Legal Standards Governing the Admission of Contentions.

It is well established that contentions may only be admitted in an NRC licensing proceeding if they comply with the requirements of 10 C.F.R. § 2.714(b) and applicable Commission case law. *See, e.g., Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1045-47 (1983); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976); *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974). Pursuant to 10 C.F.R. § 2.714(b)(2), the following information must be provided in support of a contention:

- (i) A brief explanation of the bases of the contention.
- (ii) A concise statement of the alleged facts or expert opinion which support the contention . . . together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
- (iii) Sufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact. . . .

10 C.F.R. § 2.714(b)(2). The failure of a contention to comply with any one of these requirements is grounds for dismissing the contention. *See* 10 C.F.R. § 2.714(d)(2)(i); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 NRC 149, 155-56

(1991); *PFS*, LBP-98-7, 47 NRC 142, 178 (1998).¹² Further, pursuant to 10 C.F.R. § 2.714(d)(2),

a contention must be rejected if:

(i) The contention and supporting material fail to satisfy the requirements of [§ 2.714(b)(2)]; or

(ii) The contention, if proven, would be of no consequence in the proceeding because it would not entitle petitioner to relief.

See, e.g., *Palo Verde*, CLI-91-12, 34 NRC at 155; *PFS*, LBP-98-7, 47 NRC at 178. Finally, under the *Peach Bottom* decision, a contention must be rejected if:

(1) it constitutes an attack on applicable statutory requirements;

(2) it challenges the basic structure of the Commission's regulatory process or is an attack on the regulations;

(3) it is nothing more than a generalization regarding the petitioner's view of what applicable policies ought to be;

(4) it seeks to raise an issue which is not proper for adjudication in the proceeding or does not apply to the facility in question; or

(5) it seeks to raise an issue which is not concrete or litigable.

Peach Bottom, *supra*, ALAB-216, 8 AEC at 20-21; *PFS*, LBP-98-7, 47 NRC at 179.

B. The Licensing Board Correctly Determined That Contention Utah RR Presents An Impermissible Attack on Commission Regulations.

In its request to admit Contention Utah RR, the State described the events of September 11 as "unprecedented" and stated, "[n]ow a suicide mission to crash a hijacked commercial airliner loaded with jet fuel into a nuclear facility is a reasonably foreseeable event" (Request at 1, 3). More specifically, the State asserted in Contention Utah RR as follows (*Id.*):

¹² The purpose for the "basis" requirements in 10 C.F.R. § 2.714(b)(2) is (a) to assure that the contention raises a matter appropriate for adjudication in a particular proceeding; (b) to establish a sufficient foundation for the contention to warrant further inquiry into the assertion; and (c) to put other parties sufficiently on notice of the issues so that they will know generally what they will have to defend against or oppose. See, e.g., *Peach Bottom*, 8 AEC at 20-21. Contentions that lack a factual and legal foundation should not be admitted. *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 333-34 (1999); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 248 (1996).

CONTENTION RR. Suicide Mission Terrorism or Sabotage.

The Applicant, in its Safety Analysis Report, and the Staff, in its Safety Evaluation Report, have failed to identify and adequately evaluate design basis external man-induced events such as suicide mission terrorism and sabotage, “based on the current state of knowledge about such events” as required by 10 CFR § 72.94 (emphasis added). In addition, the scope of the Applicant’s Environmental Report and the Staff’s Draft Environmental Impact Statement is too limited to comply with the National Environmental Policy Act and 10 CFR §§ 72.34, 51.45, 51.61 and 51.71 because they do not adequately identify and evaluate any adverse environmental effects which cannot be avoided from attacks by suicide mission terrorism or sabotage.¹³

In support of this contention, the State asserted that (a) “the current state of knowledge” about terrorism changed on September 11, 2001 (*id.* at 3-4); (b) “the NRC’s previous position on design basis external man-induced events” (under 10 C.F.R. § 72.92) cannot support a finding of reasonable assurance of adequate protection of public health and safety in licensing the PFS Facility (*id.* at 4-9); (c) the PFS ISFSI “and its related activities” (*i.e.*, transportation of SNF from the main rail line to the PFS site, and temporary storage of SNF at the Intermodal Transfer Facility (“ITF”)), present “an opportune terrorist target” (*id.* at 9-11); (d) the PFS Facility “is vulnerable to a September 11th type attack” (*id.* at 11-13);¹⁴ and (e) other types of terrorist attacks (such as truck

¹³ The Licensing Board previously admitted Contention Utah K/Confederated Tribes B, challenging the adequacy of PFS’s consideration of credible accidents, including aircraft crash hazards. See LBP-98-7, 47 NRC at 190-91, 234-35, 253 (1998). That contention does not include terrorist attacks.

¹⁴ In support of this basis statement, the State relied upon the Declaration of Dr. Marvin Resnikoff (“Resnikoff Dec.”), and asserted that (1) a Boeing 757 or heavier aircraft will penetrate a HI-STORM 100 cask, (2) a HI-STAR shipping cask (which is certified under 10 C.F.R. Part 71) will not withstand a commercial airliner crash, (3) the Canister Transfer Building (“CTB”) and intermodal transfer facility (“ITF”) will not withstand a commercial airliner crash, (4) PFS operations are not designed to withstand a fire resulting from such a crash, and (5) a breach of the HI-STORM “storage system,” HI-STAR shipping cask, ITF, or CTB by a commercial airplane will result in a release of radiation in excess of the 5 rem standard in 10 C.F.R. § 72.106 (Request at 11-13; Resnikoff Dec. ¶¶ 9-27). While the Staff noted certain flaws in Dr. Resnikoff’s Declaration, the Staff did not oppose the admission of Contention Utah RR on this basis. See “NRC Staff’s Response to State of Utah’s Request for Admission of Late-Filed Contention Utah RR (Suicide Mission Terrorism and Sabotage),” dated October 26, 2001 (“Staff Response”), at 6 n.11.

bombs, anti-tank and armor piercing weapons, and large-scale coordinated attacks) are now reasonably foreseeable and require consideration in licensing the PFS Facility (*id.* at 13-14).¹⁵

In considering these assertions, the Licensing Board found that a balancing of the five late-filing criteria in 10 C.F.R. § 2.714(a)(1) supported the admission of this contention. LBP-01-37, slip op. at 9.¹⁶ However, the Licensing Board further determined that Contention Utah RR posed an impermissible challenge to the Commission's regulations in 10 C.F.R. Parts 72 and 73, in which the Commission has set forth the physical security requirements that govern an away-from-reactor ISFSI such as the facility proposed by PFS. *Id.* at 10-13. More specifically, as the Commission noted in CLI-02-03 (slip op. at 2), the Licensing Board rejected this contention as a safety issue (a) based on 10 C.F.R. § 73.51, in which, as explained in the accompanying Statement of Consideration, the Commission excluded the malevolent use of an airborne vehicle as part of a sabotage/terrorist threat for, *inter alia*, spent fuel storage facilities, and (b) as an impermissible challenge to "Commission regulations that delineate the physical protection requirements at such facilities." Further, as the Commission noted, the Board "found this 'an appropriate result under the agency's current regulatory regime' of excluding acts by an enemy or enemies of the United States, citing 10 C.F.R. § 50.13 and *Florida Power and Light Co.* (Turkey Point Nuclear Generating

¹⁵ The State asserted that these matters were inadequately considered by PFS in its Environmental Report ("ER") and Safety Analysis Report ("SAR"), and by the Staff in its Draft Environmental Impact Statement ("DEIS") (June 2000) and Safety Evaluation Report Concerning the Private Fuel Storage Facility ("SER") (Sept. 29, 2000) (Request at 16). To the extent that the State's challenge was based upon the adequacy of the Staff's SER, it failed to state a proper contention. See, e.g., *Curators of the University of Missouri* (Trump-S Project), CLI-95-8, 41 NRC 386, 395-96 (1995); *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-812, 22 NRC 5, 55-56 (1985). Challenges to the adequacy of the DEIS, however, may be permissible. See, e.g., *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983).

¹⁶ The Commission declined a referral of the rulings in section II.A of the Board's Order, pertaining to the 10 C.F.R. § 2.714(a)(1) late filing factors. See CLI-02-03, slip op. at 3 n.9. Accordingly, the Staff does not address that issue herein.

Units 3 and 4), 4 AEC 9, 13 (1967), *aff'd sub nom, Siegel v. AEC*, 400 F.2d 778 (D.C. Cir. 1968)].”
CLI-02-03, slip op. at 2.

The Licensing Board’s determination that Contention Utah RR presented an impermissible challenge to the Commission’s regulations was entirely correct.¹⁷ Detailed requirements for physical protection at an away-from-reactor ISFSI are provided in 10 C.F.R. Parts 72 and 73.¹⁸ The Licensing Board summarized these requirements as follows:

Parts 72 and 73 of title 10 of the Code of Federal Regulations set forth the physical security protection requirements for SNF storage at facilities like that proposed by PFS. Specifically, 10 C.F.R. §§ 72.180, 72.184 provide that an applicant such as PFS must “establish, maintain and follow a detailed plan for physical protection as described in § 73.51” and a “safeguards contingency plan for responding to threats and radiological sabotage” as described in Appendix C to Part 73. With regard to the physical protection plan, section 73.51(b)(1) states that an applicant for an

¹⁷ Indeed, in its petition to suspend the proceeding, filed on October 10, 2001 (later denied by the Commission in CLI-01-26), the State explicitly stated as follows:

The current NRC regulations and licensing procedures are being reviewed because they do not contemplate the type of terrorist threat we now face, and are simply inadequate to protect the public. However, unless the Commission suspends the licensing proceeding, those inadequate regulations and procedures will govern the adjudication of Utah Contention RR and will otherwise serve as a basis to assess the design and operational requirements of the PFS facility. . . .

. . . If the proceeding moves ahead at this time, the evidence, to the extent it is now available, will be judged against regulations which are no longer valid standards.

(Suspension Petition at 7-8; emphasis added). In light of these assertions, the State’s representation before the Licensing Board that Contention Utah RR “does not challenge” existing regulations (Request at 5, 6), is inexplicable.

¹⁸ See also 10 C.F.R. §§ 72.180 and 72.184 (requiring ISFSI applicants under Part 72 (like PFS) to “establish, maintain and follow a detailed plan for physical protection as described in § 73.51,” and “a safeguards contingency plan for responding to threats and radiological sabotage” as described in 10 C.F.R. Part 73, Appendix C.

away-from-reactor ISFSI (such as that proposed by PFS) must “establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high-level radioactive waste do not constitute an unreasonable risk to public health and safety.” Moreover, under section 73.51(b)(2)(i)-(iv), to satisfy this general objective an applicant must meet certain specified performance capabilities, including SNF storage within a protected area (PA); PA restricted access; detection and assessment of an unauthorized penetration of, or activities within, the PA; as necessary, timely communication with a designated response force; and effective physical protection organization management. Further, under section 73.51(b)(3), the facility physical protection system “must be designed to protect against loss of control of the facility that could be sufficient to cause a radiation exposure exceeding the dose as described in § 72.106.” Finally, section 73.51(d) sets forth specific methods for meeting the section 73.51(b)(2) performance capabilities, with the caveat that other alternative measures may be authorized by the Commission. For the safeguard contingency plan, Appendix C to Part 73 outlines specific requirements, including describing a set of predetermined decisions and actions for responding to threats, thefts, and sabotage.

LBP-01-37, slip op. at 10-11.

These determinations were entirely correct. In sum, the regulations require an ISFSI applicant to “establish and maintain a physical protection system with the objective of providing high assurance that activities involving spent nuclear fuel and high-level radioactive waste do not constitute an unreasonable risk to public health and safety.” 10 C.F.R. § 73.51(b)(1). To meet this general objective, the applicant must meet the specific performance capabilities identified in § 73.51(b)(2), as listed by the Board. See 10 C.F.R. § 73.51(b)(2)(i) - (v). The regulations require that the physical protection system “must be designed to protect against loss of control of the facility that could be sufficient to cause a radiation exposure exceeding the dose as described in § 72.106.” 10 C.F.R. § 73.51(b)(3). Specific methods for meeting the performance capabilities of § 73.51(b)(2) are specified in § 73.51(d), although other alternative measures may be authorized by the Commission. In addition, 10 C.F.R. Part 73, Appendix C, provides specific requirements for

a licensee's safeguards contingency plan, including requirements to describe a set of pre-determined decisions and actions for responding to threats, thefts and sabotage.¹⁹

As the Licensing Board further noted, these physical protection requirements result in large part from the Commission's 1998 amendment of its physical protection requirements applicable to ISFSIs. See LBP-01-37, slip op. at 11-12. As the Board further observed, in adopting the revised rule, the Commission explicitly rejected comments suggesting that protection against the malevolent use of land-based or airborne vehicles should be included within the Commission's protection goals, citing the following language from the Commission's Statement of Consideration:

Inclusion of an airborne vehicle was assessed for possible inclusion into the protection goal for this rule. However, protection against this type of threat has not yet been determined appropriate at sites with greater potential consequences than spent fuel storage installations. Therefore, this type of requirement is not included within the protection goal for this final rule.

Id. at 11, *citing* Statement of Consideration, "Physical Protection for Spent Nuclear Fuel and High-Level Radioactive Waste," 63 Fed. Reg. 26,955, 26,956 (1998).

Similarly, the Licensing Board correctly observed that nuclear power reactors -- where terrorist actions could pose greater consequences than those at an ISFSI -- are not required to provide design features or other measures to protect against "attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person." LBP-01-37, slip op. at 12, *citing* 10 C.F.R. § 50.13. As the Board noted, this exclusion has been explained as follows:

the protection of the United States against hostile enemy acts is a responsibility of the nation's defense establishment and the various agencies of our Government having internal security functions. . . . One factor underlying our practice in this connection has been a recognition that reactor design features to protect against the full range of the modern arsenal of weapons are simply not practicable

¹⁹ The State has not alleged that PFS failed to satisfy the Commission's existing physical protection requirements. See Request at 6-7.

and that the defense and internal security capabilities of this country constitute, of necessity, the basic "safeguards" as respects possible hostile acts by an enemy of the United States.

Id. at 12, citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Units No. 3 and No. 4), 4 AEC 9, 13 (1967), *aff'd sub. nom.*, *Siegel v. AEC*, 400 F.2d 778 (D.C. Cir. 1968).²⁰

Finally, the Staff notes that the Commission has undertaken a review of its regulations and requirements in light of the September 11 events. However, pending any modification of the agency's physical protection requirements, the Commission's existing regulations in 10 C.F.R. Parts 72 and 73 continue to govern the consideration of ISFSI license applications -- and, as stated above, the existing regulations do not require ISFSI applicants to address potential terrorist attacks like the September 11 events.

In sum, based on a reading of the Commission's regulations, the 1998 Statement of Consideration, and other references cited by the Licensing Board, the Licensing Board correctly determined that the State's attempt to litigate the threat that might be posed by intentional malevolent acts like the September 11 attack, constitutes an impermissible challenge to the Commission's regulations governing the safety and physical security of an ISFSI, as set forth in 10 C.F.R. Parts 72 and 73. Here, the State has not filed a request for waiver of the Commission's rules under 10 C.F.R. § 2.758, as it was required to do in order to mount such a challenge. See LBP-01-37, slip op. at 13 n.2. Accordingly, the Licensing Board correctly rejected Contention

²⁰ The Licensing Board also concluded that "there seems little doubt that the terrorist attacks of September 11, 2001, constituted acts by an enemy or enemies of the United States, see Pub. L. No. 107-40, 115 Stat. 224 (Sept. 20, 2001), as would any similar acts directed against American nuclear facilities." LBP-01-37, slip op. at 12-13. The Staff notes that the rationale applicable to nuclear power reactors would apply no less to nuclear facilities other than those licensed under 10 C.F.R. Part 50, notwithstanding the fact that the regulation specifically applies, in terms, only to Part 50 facilities.

Utah RR as a safety contention, and that determination should therefore be affirmed. See 10 C.F.R. § 2.758(a); *Peach Bottom, supra*, 8 AEC at 20-21.²¹

²¹ In Contention Utah RR, the State also asserted that consideration of external man-induced events (“DBEMIEs”) from suicidal terrorism and sabotage is required in the design basis of an ISFSI, under 10 C.F.R. § 72.94 (Request, at 4); that the Commission cannot find reasonable assurance that the activities authorized by the PFS license can be conducted without endangering public health and safety, as required under § 72.40(a)(13), without revising the “design basis external man-induced events siting factors” (*Id.* at 4-5); that the design basis threat for an ISFSI must be revised in light of “new” information; and that the SAR and SER do not “identify or adequately evaluate [DBEMIEs] as a result of a September 11th type terrorist attack” (*Id.* at 9, 11, *citing* 10 C.F.R. § 72.94). The Licensing Board did not address each of these claims specifically, but rejected the State’s central underlying assertion, finding that “the State’s reliance on the siting provisions of section 72.94 regarding regional DBEMIEs as a basis for this contention is misplaced.” LBP-01-37, slip op. at n.3.

The Licensing Board’s rejection of this argument was entirely correct. The regulations governing the design of an ISFSI are set forth in 10 C.F.R. Part 72, Subpart F (“General Design Criteria”). These regulations do not require consideration of events like the September 11 terrorist attacks within the design of an ISFSI. See 10 C.F.R. §§ 72.120 - 130. Further, the State’s reliance on 10 C.F.R. § 72.94 was misplaced, in that Subpart E of 10 C.F.R. Part 72 -- in which § 72.94 is codified -- identifies the factors which are required to be evaluated in the siting of an ISFSI, rather in the facility’s design. Further, terrorist attacks do not constitute “past and present man-made facilities and activities” in the region of the PFS site and, therefore, there was no merit in the State’s argument that such events must be evaluated under § 72.94. See 10 C.F.R. § 72.94(c). Finally, consideration of the September 11 events is not required for the Commission to find reasonable assurance that activities under the license can be conducted without endangering public health and safety under 10 C.F.R. § 72.40(a)(13). Rather, that finding would be made upon a demonstration that the license application satisfies NRC regulations and is consistent with applicable law, absent a Commission determination that other requirements apply. See, e.g., *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1004-05, 1008-10 (1973), *aff’d in part and remanded on other grounds*, CLI-74-2, 7 AEC 2, 4 (1974).

Similarly, the Licensing Board rejected the State’s “attempt to expand the consideration of sabotage/terrorism beyond September 11-type events to (1) other sabotage/terrorism scenarios, such as truck bombs, and (2) transportation issues.” LBP-01-37, slip op. at n.3. The Board found that these assertions “would be inadmissible as lacking a factual basis and outside the scope of this proceeding, respectively.” *Id.* These determinations were correct. With respect to other types of attacks, the State raised those concerns earlier, and they were not prompted by the attacks of September 11. See Staff Response at 13 n.20. With respect to transportation, the State asserted that the shipping casks which would be used to transport spent nuclear fuel (“SNF”) to the PFS Facility will not withstand the crash of a heavy commercial airliner; that use of the Applicant’s proposed rail line or ITF would provide a target for suicide mission terrorism; that the ITF design will not protect the shipping casks from a commercial airliner; that neither the shipping cask nor the ITF would withstand a fire in the crash of a fully-fueled commercial airliner; and that radiation released from a shipping cask in such an event would exceed the 5-rem standard in 10 C.F.R.

(continued...)

C. The Licensing Board Correctly Determined That Contention Utah RR Fails to Raise an Admissible Issue Under NEPA.

In requesting the admission of Contention Utah RR, the State asserted that a suicide mission to crash a hijacked commercial airliner loaded with jet fuel into “a nuclear facility” is now a “reasonably foreseeable event” (Request at 3; emphasis added); that the proposed PFSF presents an “opportune” or “desirable” terrorist target (*Id.* at 9, 10); that the PFSF is vulnerable to a September 11-type attack” (*Id.* at 11); and that the ER and DEIS “do not adequately identify and evaluate adverse environmental impacts from suicide mission terrorist attacks,” as is purportedly required in 10 C.F.R. §§ 72.34, 51.45, 51.61 and 51.71. *Id.*

The Licensing Board rejected the State’s NEPA-based assertions, ruling as follows:

Although this question is a close one and another Licensing Board has recently reached a somewhat different conclusion, see Duke Cogema Stone & Webster (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC __, __ (slip op. at 50-55) (Dec. 6, 2001), at this juncture we are persuaded, as the Appeal Board observed a number of years ago, that “the rationale for 10 CFR § 50.13 [is] as applicable to the Commission’s NEPA responsibilities as it is to its health and safety responsibilities.” Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 851 (1973); see also Limerick Ecology Action v. NRC, 869 F.2d 719, 743-44 (3d Cir. 1989) (sabotage risk need not be considered in environmental impact statement because uncertainty in current risk assessment techniques would not allow meaningful risk assessment). As such, we find contention Utah RR inadmissible in this respect as well.

LBP-01-37, slip op. at 13; footnote omitted. The Licensing Board’s ruling on this aspect of the State’s contention was entirely correct, and is consistent with the governing authority cited by the Licensing Board in its decision. Indeed, the decisions in *Shoreham* and *Limerick Ecology Action*

²¹(...continued)

§ 72.106 (*Id.* at 10, 11-13). These assertions, however, (a) present an impermissible challenge to the Commission’s regulations governing SNF transportation, set forth in 10 C.F.R. Part 71 and U.S. Department of Transportation regulations, and (b) are beyond the permissible scope of a Part 72 ISFSI licensing proceeding. Accordingly, the Licensing Board correctly rejected these assertions. *Cf. Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-99-34, 50 NRC 168, 176-77 (1999).

establish clear precedents which the Licensing Board could not disregard. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 851 (1973); *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 743-44 (3d Cir. 1989).

Although this issue is discussed more fully below in response to the question posed by the Commission in CLI-02-03, the Staff notes that no scientific or other reliable basis has been put forward to conclude, as the State suggests, that an actual terrorist attack of this nature, specifically directed against the PFS Facility, now constitutes a “reasonably foreseeable event” (see Request at 3).²² To the contrary, while one can speculate -- as the State does here -- that such an attack might be targeted against a specific facility, there is no rational means by which a decision-maker can reasonably predict or foresee that such an attack will be targeted against any particular -- nuclear or other -- facility.²³ Accordingly, the potential for a terrorist attack at the PFS Facility need not be addressed under NEPA. See, e.g., *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 697-701 (1985) (finding no known basis upon which the agency could make “a reasonable prediction of . . . the kind of stochastic human behavior displayed in an act of sabotage,” and sabotage therefore need not be considered in an EIS), *review declined*, CLI-86-5, 23 NRC 125 (1986), *aff’d sub nom Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 743-44 (3d Cir. 1989) (sabotage risk need not be considered in an EIS, in that current risk assessment techniques are subject to a great deal of uncertainty, and the risk could not

²² The State similarly asserted that other types of terrorist attacks -- unrelated to the events of September 11 -- need to be considered in licensing the PFS Facility (Request at 13-14). However, the State provided no factual basis to support a claim that such other types of events (which appear to have been described in its earlier contentions) are now reasonably foreseeable, in light of the September 11 attacks.

²³ Indeed, it is possible to prognosticate that any significant structure or facility could be targeted by terrorists, whether it be a tall building, dam, chemical plant, refinery, bridge, reservoir, or any important structure or infrastructure component. However, the mere fact that one can speculate that such a facility might be targeted by malevolent individuals does not provide a basis to consider an attack against a particular facility (or type of facility) to be “reasonably foreseeable.”

meaningfully be assessed); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251, 269 (1987); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-10, 47 NRC 288, 296 (1998) (rejecting Contention Utah Z, concerning sabotage as a reasonably foreseeable event under NEPA); *PFS*, LBP-98-7, 47 NRC at 179, 186, 199 and 201 (rejecting transportation sabotage issues under NEPA, in Contentions Utah U, Utah V, and OGD C).

In sum, the State failed to provide any factual basis for its assertion that a terrorist attack against the PFS Facility is now “reasonably foreseeable,” such that it must be addressed in an EIS for the PFS Facility -- as it was required to do under the “basis” requirements for a contention, set forth under 10 C.F.R. § 2.714(b)(2)(ii). Accordingly, the Licensing Board correctly rejected these assertions.

II. An Evaluation of Intentional Malevolent Acts Is Not Required in an Environmental Evaluation Under NEPA.

In this proceeding, as well as in certain other proceedings now pending before the Commission,²⁴ the Commission requested that the parties submit legal briefs that address all issues relevant to the action under review and, in particular, that they address the following issue:

What is an agency’s responsibility under NEPA to consider intentional malevolent acts, such as those directed at the United States on September 11, 2001? The parties should cite all relevant cases, legislative history or regulatory analysis.

See, e.g., CLI-02-03, slip op. at 3.

In response to the Commission’s request, the Staff submits that:

²⁴ As noted by the Commission, it is also reviewing the decisions in (1) *Duke Cogema Stone and Webster* (Savannah River Mixed Oxide Fuel Fabrication Facility), LBP-01-35, 54 NRC ___ (Dec. 6, 2001), *reconsideration denied*, Memorandum and Order (Ruling on Motion to Reconsider) (Jan. 16, 2002); (2) *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 & 2), LBP-02-04, 55 NRC ___ (Jan. 24, 2002); and (3) *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit No. 3), LBP-02-05, 55 NRC ___ (Jan. 24, 2002). See CLI-02-03, slip op. at 4 n.10.

(a) Where a federal agency prepares an environmental impact statement, NEPA requires that the agency consider those impacts that are reasonably foreseeable as a consequence of the agency's action (or alternatives thereto), subject to a rule of reason, in order to assure that the agency considers those impacts in making an informed decision; and

(b) intentional malevolent acts, such as those directed at the United States on September 11, 2001, do not constitute "reasonably foreseeable" impacts resulting from the agency's action in licensing a nuclear facility -- notwithstanding the fact that those attacks occurred on September 11 -- and are not amenable to the type of "meaningful analysis" and evaluation that were contemplated by Congress under NEPA -- in that there is no quantitative, qualitative, or otherwise rational means by which an agency decision-maker can reasonably predict that such attacks will be targeted against a facility, or that they will involve any particular mode of execution, magnitude, or consequences.

Accordingly, in the absence of any means to reasonably predict or evaluate the occurrence, magnitude, or consequences of such intentional, malevolent acts, NEPA does not require that such events be evaluated in an EIS or other environmental analysis.

A. The Statutory and Regulatory Framework: NEPA and 10 C.F.R. Part 51

The National Environmental Policy Act of 1969, 42 U.S.C. § 4321, *et seq.* ("NEPA") establishes, in part, the following requirements:

The Congress authorizes and directs that, to the fullest extent possible:

(2) all agencies of the Federal Government shall -

* * * *

(C) include in every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on -

(i) the environmental impact of the proposed action,

- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Id., § 102(2)(C), 42 U.S.C. § 4332(2)(C). Thus, where an Environmental Impact Statement (“EIS”) is prepared, NEPA requires that it address, *inter alia*, “the environmental impact of the proposed action” as well as “alternatives” to that action. Further, Congress has directed that in implementing this statute, federal agencies are to “utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment.” *Id.*, § 102(2)(A), 42 U.S.C. § 4332(2)(A).

The Commission has adopted regulations that implement the requirements of NEPA, as set forth in 10 C.F.R. Part 51, Subpart A (“[NEPA] - Regulations Implementing Section 102(2)”). Pursuant to 10 C.F.R. § 51.20, the Commission has identified the types of actions that require preparation of an EIS;²⁵ included among those actions is the issuance of a license pursuant to 10 C.F.R. Part 72 for the storage of spent fuel in an away-from-reactor ISFSI. 10 C.F.R. § 51.20(b)(9). Where an EIS is prepared, the regulations require publication of both a Draft EIS (“DEIS”) and Final EIS (“FEIS”); and they describe the required contents of these two documents. See 10 C.F.R. §§ 51.70 - 51.71 (DEIS), and 51.90 - 51.91 (FEIS).²⁶

²⁵ This threshold determination is guided by NEPA, Council on Environmental Quality (CEQ) regulations, and the agency’s procedures or regulations. See, e.g., 10 C.F.R. §§ 51.20 - 51.23, 51.25, and 51.53(c).

²⁶ The regulations further describe the role and timing of the FEIS in the agency’s decision-making process. See, e.g., 10 C.F.R. §§ 51.100 - 51.104.

B. Under NEPA, An Agency is Required to Provide a Detailed Evaluation of “Reasonably Foreseeable” Effects or Impacts, Subject to a Rule of Reason.

It is well established that an agency is required to take a "hard look" at the environmental impacts of its actions under NEPA. *See, e.g., Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97 (1983); *Natural Resources Defense Council, Inc. v. Morton*, 458 F. 2d 827, 838 (D.C. Cir. 1972). Further, the Supreme Court has stated that one of the “twin aims” of NEPA (along with ensuring that federal agencies inform the public that they have considered environmental concerns in their decisionmaking processes), is to ensure that such agencies will “consider every significant aspect of the environmental impact of a proposed action.” *Baltimore Gas & Electric Co.*, 462 U.S. at 97, *citing Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553 (1978).

While it is clear that an agency must consider the environmental impacts of its proposed actions, the type and scope of the environmental impacts that must be considered in an EIS is not defined in NEPA or the Commission’s regulations in 10 C.F.R. Part 51 for most actions.²⁷ However, the courts have clearly held that an agency’s responsibility to consider the environmental impacts of an action under NEPA is subject to a “rule of reason.” *See, e.g., New York v. Kleppe*, 429 U.S. 1307, 1311 and n.1 (1976). Thus, the courts have recognized that while agencies are required by NEPA to evaluate the “reasonably foreseeable significant adverse impacts” of a proposed action, that evaluation is governed by the “rule of reason.” *See, e.g., Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 745 (3d Cir. 1989) (“consideration of impacts must be guided by a rule of reasonableness,” *citing Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972)).

²⁷ In contrast, for nuclear power plant license renewals, the regulations describe the scope of the impacts to be considered. *See, e.g.,* 10 C.F.R. §§ 51.23, 51.53(c), 51.95, and Part 51, Appendix B.

Further, only impacts which are “reasonably foreseeable” to result from the agency’s action must be evaluated; remote and speculative impacts need not be evaluated. See, e.g., *Scientists’ Institute for Public Information, Inc. v. Atomic Energy Commission* (“*SIFI*”), 481 F.2d 1079, 1092 (D.C. Cir. 1973). In *SIFI*, the Court of Appeals held as follows:

Section 102(C)'s requirement that the agency describe the anticipated environmental effects of [a] proposed action is subject to a rule of reason. The agency need not foresee the unforeseeable, but by the same token neither can it avoid drafting an impact statement simply because describing the environmental effects of and alternatives to particular agency action involves some degree of forecasting. . . . "The statute must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible * * *."

Accordingly, . . . if the Commission makes a good faith effort in the [environmental] survey to describe the reasonably foreseeable environmental impact of the program, alternatives to the program and their reasonably foreseeable environmental impact, . . . we see no reason why the survey will not fully satisfy the requirements of Section 102(C).

Id. at 1092; footnotes omitted.²⁸ See also *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 834, 837 (D.C. Cir. 1972) (NEPA requires consideration of the environmental impacts of reasonable alternatives, subject to a rule of reason; the discussion of reasonable alternatives does not require either "crystal ball" inquiry or consideration of the effects of alternatives that “cannot be readily ascertained” where “the alternatives are deemed only remote and speculative possibilities”).

²⁸ The Court of Appeals in *SIFI* further concluded that NEPA requires full disclosure “of all environmental effects likely to stem from agency action.” *Id.* at 1099; emphasis added. Similarly, the D.C. Circuit Court elsewhere stated:

NEPA does not require federal agencies to examine every possible environmental consequence. Detailed analysis is required only where impacts are likely . . . So long as the environmental impact statement identifies areas of uncertainty the agency has fulfilled its mission under NEPA.

Izaak Walton League of America v. Marsh, 655 F.2d 346, 377 (D.C. Cir. 1981); emphasis added.

Commission case law similarly has recognized that the agency's responsibility under NEPA is subject to a rule of reason, and that NEPA does not require an evaluation of impacts that are not reasonably foreseeable. See, e.g., *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-919, 30 NRC 29, 49-50 (1989), *rev'd and remanded on other grounds*, CLI-90-4, 31 NRC 333 (1990) (*citing Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719 (3d Cir. 1989)). As one Licensing Board observed:

We must judge the adequacy of the Staff's treatment of the various impacts in the FEIS by the rule of reason. See, e.g., *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1011-012 (1973). That standard is not one of perfection; rather, it is a question of reasonableness. As the Appeal Board long ago recognized, "absolute perfection in a FES [Final Environmental Statement] being unattainable, it is enough that there is 'a good faith effort . . . to describe the reasonably foreseeable environmental impact' of a proposed action." *Id.* at 1012 (citations omitted).

Louisiana Energy Services, L.P. (Claiborne Enrichment Center), LBP-97-8, 45 NRC 367, 399 (1997), *aff'd in part and rev'd in part on other grounds*, CLI-98-3, 47 NRC 77 (1998). Similarly, it has been held that "NEPA's requirement that environmental effects of a proposed agency action be described is subject to a rule of reason. An agency need not foresee the unforeseeable." *Louisiana Power and Light Co.* (Waterford Steam Electric Station), LBP-82-100, 16 NRC 1550, 1571 (1982), *aff'd*, ALAB-732, 17 NRC 1076 (1983) (*citing SIPI*, 481 F.2d at 1092).

This limitation on the scope of an agency's responsibilities under NEPA, whereby only "reasonably foreseeable" impacts of an action need to be evaluated in an EIS, based on scientific

evaluation, is manifested as well in CEQ regulations.²⁹ Thus, the CEQ regulations provide that where an EIS is prepared, it must include a “scientific and analytic” comparison of the environmental impacts of the proposed action and alternatives considered, including both direct and indirect effects. 40 C.F.R. § 1502.16(a)-(b).³⁰ Further, where an agency evaluates “reasonably foreseeable significant adverse effects on the human environment” in an EIS, and there is “incomplete or unavailable information,” the evaluation is to be “based upon theoretical approaches or research methods generally accepted in the scientific community, . . . provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason. . . .” 40 C.F.R. § 1502.22(b)(4); emphasis added.³¹

²⁹ The Commission has stated that because it is an independent regulatory agency, it does not consider substantive CEQ regulations as legally binding on the NRC. See, e.g., Statement of Consideration, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions and Related Conforming Amendments,” 49 Fed. Reg. 9352, 9356 (1984). See also *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719, 743 (3d. Cir. 1989) (CEQ regulations are not binding on an agency unless they have been expressly adopted). Nonetheless, while the Commission is not bound by CEQ regulations which it has not expressly adopted, the Commission has indicated that those regulations are entitled to “substantial deference.” *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-2, 33 NRC 61, 72 n.2 (1991).

³⁰ “Direct” effects or impacts are defined as those “which are caused by the action and occur at the same time and place.” 40 C.F.R. § 1508.8(a). “Indirect” effects or impacts are defined as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.08(b); emphasis added.

³¹ In a 1986 amendment to its NEPA regulations (requiring, *inter alia*, a detailed analysis of “reasonably foreseeable” adverse impacts and eliminating the need to perform a worst case analysis), the CEQ explained the “rule of reason” as follows:

The regulation also requires that analysis of impacts in the face of unavailable information be grounded in the “rule of reason”. The “rule of reason” is basically a judicial device to ensure that common sense and reason are not lost in the rubric of regulation. The rule of reason has been cited in numerous NEPA cases for the proposition that, “An EIS need not discuss remote and highly speculative consequences. . . . This is consistent with the (CEQ) Council on Environmental Quality Guidelines and the frequently expressed view that adequacy of the content of the EIS should be determined through use of a rule of reason.” *Trout Unlimited v. Morton*,

(continued...)

C. Intentional, Malevolent Acts, Such as the September 11 Attacks, Do Not Constitute “Reasonably Foreseeable” Impacts Resulting From the Licensing of A Nuclear Facility and Are Not Amenable to “Meaningful Analysis” under NEPA.

As discussed above, the Commission is required to consider in an EIS only “reasonably foreseeable” consequences of the proposed action and alternatives thereto, subject to a rule of reason. In the following discussion, the Staff provides its view that intentional, malevolent acts, such as the attacks of September 11, do not constitute the “reasonably foreseeable” impacts of an NRC licensing action and therefore need not be evaluated in an EIS. Further, there does not appear to be any credible scientific information or analysis that would support a determination that such an attack or any particular consequence thereof is a “reasonably foreseeable” consequence of the agency’s action.

First, the CEQ has stated (upon amending its regulations in 40 C.F.R. § 1502.22 to require consideration of reasonably foreseeable impacts in lieu of the “worst case” analysis which the

³¹(...continued)

509 F.2d 1276, 1283 (9th Cir. 1974). In the seminal case which applied the rule of reason to the problem of unavailable information, the court stated that, “[NEPA’s] requirement that the agency describe the anticipated environmental effects of a proposed action is subject to a rule of reason. The agency need not foresee the unforeseeable, but by the same token, neither can it avoid drafting an impact statement simply because describing the environmental effects of alternatives to particular agency action involves some degree of forecasting” The statute must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible” *Scientists’ Institute for Public Information, Inc. v. Atomic Energy Commission*, 481 F.2d 1079, 1092 (D.C. Cir. 1973), citing *Calvert Cliffs’ Coordinating Committee v. Atomic Energy Commission*, 499 F. 2d 1109, 1114 (D.C. Cir. 1971).

regulation had previously required),³² the term “reasonably foreseeable” includes “low probability/severe consequence impacts, provided that the analysis of such impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.” 51 Fed. Reg. at 15,622; emphasis added. The CEQ further explained that an agency’s “evaluation must be carefully conducted, based upon credible scientific evidence, and must consider those reasonably foreseeable significant adverse impacts which are based upon scientific evidence.” *Id.* at 15,621. Further, the CEQ indicated that the requirement that the impact analysis be based on “credible scientific evidence” is a specific component of the “rule of reason.” *Id.* at 15,624.³³

The CEQ’s adoption of this standard was explicitly approved by the Supreme Court in *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). As the Court observed, the amended regulation does not necessarily exclude an agency’s duty to consider remote but potentially severe impacts, but it “grounds the duty in evaluation of scientific opinion rather than in the framework of a conjectural ‘worst case analysis.’” *Id.* at 354-55. The Court’s decision further

³² Prior to the 1986 amendments, the CEQ regulation had provided that if certain information relevant to an agency’s evaluation of a proposed action is either unavailable or too costly to obtain, the agency must include in its EIS a “worst case analysis and an indication of the probability or improbability of its occurrence.” 40 C.F.R. § 1502.22 (1985). The Commission has indicated that it did not consider itself to be bound by this former “substantive” requirement that a worst case analysis be performed. See *Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2)*, ALAB-819, 22 NRC 681, 700 (1985) (*citing* Statement of Consideration, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions and Related Conforming Amendments,” 49 Fed. Reg. 9352, 9356-58 (1984)), *review declined*, CLI-86-5, 23 NRC 125 (1986), *aff’d sub nom Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719 (3rd Cir. 1989).

³³ In abolishing the requirement that a worst case analysis be prepared, the CEQ explained that it “does not maintain that a worst case analysis is impossible to prepare”; rather, the CEQ explained that it “view[s] the worst case analysis requirement as a flawed technique to analyze impacts in the face of incomplete or unavailable information. The new requirement will provide more accurate and relevant information about reasonably foreseeable significant adverse impacts.” 51 Fed. Reg. at 15,624. Further, the CEQ noted that NEPA requires federal agencies to make a “good faith effort . . . to describe the reasonably foreseeable environmental impact(s)” of the proposal and alternatives thereto -- even “in the face of incomplete or unavailable information, consistent with the ‘rule of reason.’” *Id.* at 15,625, *citing SIPI*, 481 F.2d at 1092.

establishes that the threshold determination as to whether an impact is “reasonably foreseeable” under NEPA must be supported by “credible scientific evidence,” if it is to be “meaningfully” evaluated in an EIS. *Id.*³⁴

This focus on the need for credible scientific evidence or analysis to support a determination that an impact is reasonably foreseeable supports the view that intentional malevolent acts such as the attacks of September 11 need not be evaluated in an EIS.³⁵ Based on currently available information and analytical techniques, the probability that such an act may be directed against a nuclear facility or other structure cannot reasonably be determined through scientific analysis, and is not amenable to meaningful prediction or forecasting. Rather, such events may at best be described as random and unpredictable, in that they result not from the licensing or construction of a particular facility but, instead, from the independent decision by another person or entity to perform that malevolent act. Further, there is no existing data base to which a decision-maker may turn, to estimate either (a) the probability that such an attack will occur, (b) that the attack would be directed against a particular facility, (c) the nature and magnitude of the attack, and (d) the “success” or consequences of the attack. Rather, any attempt to predict the occurrence or consequences of such an event at a particular nuclear facility would cause the agency to stray

³⁴ The Court further found that the CEQ’s determination to eliminate the need for a “worst case” analysis was not inconsistent with prior NEPA case law and was a permissible interpretation of NEPA. *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 354-55. See also Note, *Federal Agency Treatment of Uncertainty in Environmental Impact Statements Under the CEQ’s Amended NEPA Regulation § 1502.22: Worst Case Analysis or Risk Threshold?*, 86 Mich. L. Rev. 777, 798 (1988). Thus, subsequent to *Methow Valley*, federal agencies that are bound by the CEQ regulations are not required to conduct a worst case analysis.

³⁵ As the Supreme Court has explained, the CEQ’s decision to eliminate the need for federal agencies to conduct a worst case analysis under 40 C.F.R. § 1502.22 was based upon a determination that, by requiring an EIS “to focus on reasonably foreseeable impacts,” the amended rule “will generate information and discussion on those consequences of greatest concern to the public and of greatest relevance to the agency’s decision . . . rather than distorting the decisionmaking process by overemphasizing highly speculative harms.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 356 (citations omitted).

"beyond reasonable forecasting" into "the realm of pure speculation." See *North Dakota v. Andrus*, 483 F. Supp. 255, 260 (D. N.Dak. 1980).

This conclusion is further supported by the Supreme Court's decision in *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766 (1983) ("PANE"). There, in determining that an EIS need not consider potential psychological health effects that might occur as a result of an agency's action (allowing restart of the Three Mile Island Unit 1 nuclear plant), the Court found, *inter alia*, that the "reasonable foreseeability" determination requires consideration of "the closeness of the relationship between the change in the environment and the 'effect' at issue." *Id.* at 772. Further, the Court observed that NEPA requires consideration of the element of "causation" and whether the impact is "proximately related" to the agency's action -- and, although "some effects may result from the agency's action "in the sense of 'but for' causation, [they] will nonetheless not fall within § 102 because the causal chain is too attenuated." *Id.* at 773-74. The Court further stated:

Our understanding of the congressional concerns that led to the enactment of NEPA suggests that the terms "environmental effect" and "environmental impact" in § 102 be read to include a requirement of a reasonably close causal relationship between a change in the physical environment and the effect at issue. This requirement is like the familiar doctrine of proximate cause from tort law. See generally W. Prosser, *Law of Torts*, ch. 7 (4th ed. 1971).ⁿ⁷ The issue before us, then, is how to give content to this requirement. This is a question of first impression in this Court.

ⁿ⁷ In drawing this analogy, we do not mean to suggest that any cause-effect relation too attenuated to merit damages in a tort suit would also be too attenuated to merit notice in an EIS; nor do we mean to suggest the converse. In the context of both tort law and NEPA, courts must look to the underlying policies or legislative intent in order to draw a manageable line between those causal changes that may make an actor responsible for an effect and those that do not.

Id. at 774; emphasis added. Further, the Court held as follows:

PANE argues that the psychological health damage it alleges "will flow directly from the risk of [a nuclear] accident." In a causal chain from renewed operation of TMI-1 to psychological health damage, the element of risk and its perception by PANE's members are necessary middle links. We believe that the element of risk lengthens the causal chain beyond the reach of NEPA.

Id. at 775; footnote omitted.

Thus, under the Court's reasoning in *PANE*, it is clear that a potential effect must be "proximately related" to the agency's action. Further, at some point, the causal link between an agency's proposed action and the alleged effect of that action becomes too attenuated to permit reasonable or meaningful analysis, *i.e.*, the effects or impacts become too remote and speculative to permit reasonable evaluation.

The conclusion that NEPA does not require consideration of intentional malevolent acts is supported by the decision in *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 719 (3d Cir. 1989). There, the court found, *inter alia*, that the Commission had not acted in an arbitrary and capricious manner in determining not to evaluate the risk of sabotage in an EIS, based on its conclusion that "sabotage risk analysis is beyond current probabilistic risk assessment methods and that there is no current basis by which to measure such risk." *Id.* at 743. The court found that the Commission had taken the requisite "hard look" at the environmental consequences of its proposed action (issuance of a full power license) by basing its conclusion on "its contemporary evaluation of risk assessment techniques." *Id.* Further, the court found that the intervenor had not advanced any method or theory by which the Commission could have "entered into a meaningful analysis of the risk of sabotage despite its asserted inability to quantify the risks." *Id.* at 744.

Additional support for this conclusion appears in the Appeal Board's decision in *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-819, 22 NRC 681, 701 (1985), *review declined*, CLI-86-5, 23 NRC 125 (1986), which was affirmed in *Limerick Ecology Action*. There, the Appeal Board observed that the Staff's environmental evaluation did not consider the

effects of sabotage, on the grounds that "such an analysis is considered to be beyond the state of the art of probabilistic risk assessment." See ALAB-819, 22 NRC at 697.³⁶ The Appeal Board found that this was acceptable, affirming the Licensing Board's rejection of a contention which had challenged this omission as contrary to NEPA:

[T]he unknown information in [*Sierra Club v. Sigler*, 695 F.2d 957 (5th Cir. 1983)] could reasonably be estimated from long-known, fundamental physical principles (tides and currents). We are aware of no similar principles (and LEA identifies none) that would permit reasonable prediction of -- like the next high tide -- the kind of stochastic human behavior displayed in an act of sabotage.

In sum, the risk of sabotage is simply not yet amenable to a degree of quantification that could be meaningfully used in the decisionmaking process. . . .

Id. at 701; emphasis added.³⁷ *Accord*, *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-875, 26 NRC 251, 269 (1987); *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-10, 47 NRC 288, 296 (1998); *PFS*, LBP-98-7, 47 NRC 142, 179, 186, 199, 201 (1998).

Other courts have similarly recognized that the risk of an event must be amenable to meaningful (albeit not necessarily quantitative) analysis if it is to be included in an EIS. For

³⁶ It should be noted that in *Limerick*, the issue of sabotage was considered within the context of severe accidents, *i.e.*, as an initiator of an event of low probability but potentially catastrophic consequences. The Appeal Board observed that the Staff's FEIS had considered a range of design-basis and severe accident scenarios, that the intervenor had not explained "what separate consideration of sabotage as an initiator of a severe accident would add, from a qualitative standpoint," and that such consideration would "add nothing of real quantitative significance." ALAB-819, 22 NRC at 698-99. In addition, the Appeal Board found that "although the risk of sabotage cannot be quantified in a way that would permit its litigation per se, the Commission's regulations nonetheless require each plant to have a detailed security plan to protect against internal and external sabotage." *Id.* at 699. These determinations were noted by the court in *Limerick Ecology Action*, 869 F.2d at 742.

³⁷ As the court in *Limerick Ecology Action* explained, it did not hold that "the mere assertion of unquantifiability immunizes the NRC from consideration of the issue [sabotage] under NEPA"; rather, the court held that the intervenor had "failed to carry its burden to rebut the NRC's claim that it [could not] meaningfully consider the issue." *Id.*, 869 F.2d at 744 n.31.

example, the Second Circuit Court of Appeals recognized the importance of risk considerations based on scientific data under statutes such as NEPA, in which the courts are “obliged to review agency consideration of sophisticated data concerning the potential gravity of adverse consequences and the probability of their occurrence.” *City of New York v. U.S. Dept. of Transportation*, 715 F.2d 732, 736 (2d Cir. 1983). There, the court declined to invalidate a rule published by the Department of Transportation designed to reduce the risk of highway transportation of radioactive materials, where the agency had determined that its rulemaking action would not “significantly affect” the environment and that it therefore need not prepare an EIS. *Id.*, 715 F.2d at 745-49. With respect to the risk of sabotage, the court reversed the District Court’s finding that “[DOT] was obliged to state its view on the probability of such an event, even if that view was only that no estimate could reasonably be made.” *Id.* at 750. The court further stated as follows:

With respect to environmental consequences that are only remote possibilities, an agency must be given some latitude to decide what sorts of risks it will assess. . . . Here, DOT simply concluded that the risks of sabotage were too far afield for consideration. To a large degree, this judgment was justified by the record. Substantial evidence indicated that sabotage added nothing to the risk of high-consequence accidents. Even the least sanguine commentators could say only that sabotage added an unascertainable risk. In light of these conflicting points of view, it was within DOT’s discretion not to discuss the matter further beyond adopting the NRC security requirements.

Id. But see *id.* at 757 (Oakes, J., dissenting).

In sum, to fall within the proper scope of an agency’s environmental evaluation under NEPA, intentional malevolent acts such as the September 11 attacks must be determined to constitute “reasonably foreseeable” effects of the proposed licensing action. However, in the absence of any “credible scientific evidence” to support that determination, an evaluation of the probability or consequences of such an attack can only be based on “pure conjecture” and is

therefore outside the “rule of reason.” That these random acts occurred on September 11th does not make them now susceptible of meaningful evaluation or provide a reasonable basis to predict that such acts are likely or foreseeable in the future at any particular facility.

While, in theory, the Commission could attempt to develop a “worst case” estimate of the consequences of an intentional malevolent act like the September 11 attacks if it is assumed those acts are directed against a particular facility, any such evaluation would not contribute meaningfully to a determination as to whether those acts constitute “reasonably foreseeable” effects of the agency’s licensing action under NEPA.³⁸ Rather, one can only speculate that such intentional malevolent acts might be directed against a particular structure or facility; moreover, no rational means appears to exist whereby a decision-maker could reasonably predict or foresee that such an attack will be targeted against that facility, nor could there be any meaningful prediction of the likelihood that any particular consequences would ensue from those events.³⁹ Any such prediction

³⁸ Significantly, the intervenors in this proceeding have not demonstrated that such data exist with respect to the types of attacks directed against the United States on September 11, 2001, nor have they advanced any “method or theory” which would allow the Commission to conduct a “meaningful analysis of the risk” posed by such attacks.

³⁹ In deciding that NEPA does not require preparation of an EIS based on the possibility that a “worst case” event could occur, the majority in *City of New York v. U.S. Dept. of Transportation* reasoned as follows:

Our dissenting colleague appears to take the view that the very existence of the “worst case” possibility would be sufficient to require preparation of an EIS, regardless of the infinitesimal probability that the “worst case” accident will happen. We do not doubt the general proposition that “worst cases” do occur. Planes crash, and the Titanic sank. What we reject is an automatic rule requiring preparation of an EIS for every action that has any possibility, however remote, of causing serious accidental injury. Such a rule would routinely require an EIS for federal actions, since it is hard to imagine any agency action involving people or equipment that is not subject to some estimatable risk of causing serious accidental injury.

Id., 715 F.2d at 752 n.20; emphasis added. This same reasoning supports a conclusion here that, even where an agency decides to prepare an EIS, worst case events need not be considered if
(continued...)

would necessarily be based upon mere speculation and conjecture, in contrast to the reasoned consideration and scientifically-informed analysis that is contemplated by NEPA.⁴⁰ Further, because the precise nature, magnitude, timing, target, and actual consequences of such acts cannot be foreseen based on any “credible scientific evidence,” any meaningful environmental evaluation of such acts under NEPA is precluded. Rather, the agency would be able to do no more than provide something akin to a worst case analysis -- which is not required by the courts, CEQ, or the Commission’s regulations.⁴¹

³⁹(...continued)

there is no reasonable basis upon which an agency can fairly estimate the probability that the event may occur, despite the recognition that it “could” occur. *But see Natural Resources Defense Council v. NRC*, 685 F.2d 459 (D.C. Cir. 1982).

⁴⁰ See also Statement of Consideration, “Changes to Requirements for Environmental Review for Renewal of Power Plant Operating Licenses,” 64 Fed. Reg. 48,496, 49,505 (1999) (stating, in part, that “the NRC has not quantified the likelihood of the occurrence of sabotage in this analysis because the likelihood of an individual attack cannot be determined with any degree of certainty.”). Similarly, DOE has concluded that the probability of occurrence of intentional acts of sabotage or terrorism is not amenable to quantification or estimation. See, e.g., *Hirt v. Richardson*, 127 F. Supp. 2d 833, 839-40 (W.D. Mich. 1999); *Contra Costa County v. Pena*, 1998 U.S. Dist. LEXIS 3711 (N.D. Cal. 1998) (“it is impossible to determine with certainty the probability of a deliberate act of sabotage or terrorist attack”). Cf. *City of New York, supra*, 715 F.2d at 750 (citing a Sandia report which stated that “sabotage involves human motivations and the probability of human actions which are unquantifiable with our present knowledge”).

⁴¹ The difficulty in relying upon a worst case analysis to support a finding that an impact is reasonably foreseeable under NEPA, has been described by one commentator as follows:

Even assuming it is possible to identify the worst potential consequence of a proposed federal action, this consequence may or may not be within the range of reasonably foreseeable effects. For instance, the worst potential consequence of a proposed action may be based on a lengthy series of purely conjectural assumptions. In such a case, the worst potential consequence of the proposed action is possible, yet it is so hypothetical as to be outside of the range of reasonably foreseeable effects.

O’Meara Masterman, V., *Worst Case Analysis: The Final Chapter?*, 19 Env’tl. L. Rep. 10026 (1989).

Finally, the risk that an intentional malevolent act of any particular type or magnitude may be directed at any particular facility and may result in any particular consequence, is not proximately related to the agency's decision to license the facility, inasmuch as the necessary causal link is broken by the intervention of the person or entity which independently decides to carry out the intentional malevolent act. Because the risk that such an act would occur is dependent upon some individual's malevolent determination to perform that act -- wholly independent of the Commission's consideration as to whether to grant a license for a particular facility -- that person's independent conduct and involvement in the chain of causation would appear to constitute a "necessary middle link" that "lengthens the causal chain beyond the reach of NEPA." *PANE, supra*, 460 U.S. at 775. Intentional malevolent acts such as the attacks of September 11, 2001, like the risk of sabotage considered in *Limerick Ecology Action*, involve the element of "stochastic human behavior" -- which was found by Court of Appeals to preclude any "meaningful" or "scientifically credible" analysis of the risk of sabotage.⁴²

For these reasons, as more fully set forth above, the Staff submits that the Commission is not required to consider intentional malevolent acts such as the attacks of September 11, 2001, in its environmental evaluations under NEPA. While the Commission could, in theory, consider intentional malevolent acts like the attacks of September 11 in a manner similar to a worst case analysis -- whereby the consequences of such an attack are described, without any estimate of the probability that the event or its consequences would occur -- the Staff believes that such an evaluation would not constitute a meaningful evaluation that could contribute to the agency's

⁴² Probability considerations are inherently an important component in assessing whether an impact is reasonably foreseeable. See, e.g., *City of New York v. Dep't of Transportation*, 715 F.2d 732, 746 n.14 (2d Cir. 1983) (an agency must estimate "both the consequences that might occur and the probability of their occurrence The fact that effects are only a possibility does not insulate the proposed action from consideration under NEPA, but it does accord an agency some latitude in determining whether the risk is sufficient to require preparation of an EIS").

consideration of a proposed action. Rather, the Staff believes that the approach followed by the CEQ, which now eschews the performance of a worst case analysis, is appropriate.⁴³

III. The Issues Raised in Contention Utah RR Should Be Considered On A Generic Basis, Rather Than in an Individual License Proceeding.

In its decision, the Licensing Board recognized that “the Commission currently is considering whether, and to what degree, the agency’s regulatory regime, including facility physical security requirements, should be changed to reflect what transpired on [September 11, 2001].” LBP-01-37, slip op. at 14.⁴⁴ This is entirely appropriate.⁴⁵

While it is as yet unknown whether or how the Commission’s comprehensive review may result in changes to the design basis or physical protection requirements for an away-from-reactor ISFSI, the Commission has the authority to apply any requirements resulting from its review to any facility or type of facility that it deems appropriate. Further, the Commission may do so at any time, by rule, regulation or order; and it may make such requirements applicable both to applicants and licensees of nuclear facilities -- including the PFS Facility, if necessary or appropriate. See, e.g.,

⁴³ See, e.g., 40 C.F.R. § 1502.22; *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 344-45; *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d at 744.

⁴⁴ In this regard, the Board cited the Statement of NRC Chairman Dr. Richard A. Meserve before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce Concerning Nuclear Power Plant Security, at 2-5 (Dec. 5, 2001) (noting that “as part of top-to-bottom physical security review in wake of September 11, 2001 events, [the] Commission is reexamining design basis threat and will modify it, as appropriate”). LBP-01-37, slip op. at 14. Indeed, the Commission has already issued orders to all operating nuclear power plants, setting forth interim measures with respect to the physical protection of facilities licensed under 10 C.F.R. Part 50. See NRC Press Release No. 02-025, “NRC Orders Nuclear Power Plants to Enhance Security“ (Feb. 26, 2002).

⁴⁵ The nature of the Commission’s actions of February 26, 2002, pertaining to physical protection at operating nuclear power plants, does not affect the conclusion that sabotage and terrorism are not required to be evaluated in an EIS under NEPA -- in that the underlying rationale for that conclusion has not changed. Rather, just as an evaluation of such acts is not required under NEPA as a result of the Commission’s previous adoption of regulatory requirements governing physical protection, a NEPA review is not required as a result of the Commission’s recent adoption of these interim physical protection measures.

Atomic Energy Act of 1954, as amended, sec. 161b, 42 U.S.C. §2201(b); 10 C.F.R. §§ 2.202, 72.44(b)(2), 72.60, 72.62.

The Commission's continued consideration of these issues on a generic basis, rather than in individual adjudicatory proceedings, is entirely appropriate. *See, e.g., Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 100-01 (1983); *Union of Concerned Scientists v. AEC*, 499 F.2d 1069, 1081-82 (D.C. Cir. 1974). Further, the Licensing Board's determination to reject Contention Utah RR does not give rise to a serious safety or physical protection concern, in that the Commission can and is considering the appropriate response to the September 11 attacks on a generic basis, thus assuring that adequate consideration is given to these matters.

CONCLUSION

For the reasons set forth above, the Staff respectfully submits that the Licensing Board correctly determined that Contention Utah RR fails to state an admissible issue. Further, an evaluation of intentional malevolent acts is not required in an EIS under NEPA. Finally, in keeping with the generic nature of the issues raised by the State, it is appropriate that the Commission should continue to consider such issues on a generic basis.

Respectfully submitted,

/RA/

Sherwin E. Turk
Counsel for NRC Staff

Dated at Rockville, Maryland
this 27th day of February 2002

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

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

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S BRIEF IN RESPONSE TO CLI-02-03, CONCERNING THE COMMISSION'S REVIEW OF THE REFERRED RULING IN LBP-01-37," in the above captioned proceeding have been served on the following through deposit in the NRC's internal mail system, with copies by electronic mail, as indicated by an asterisk, or by deposit in the U.S. Postal Service, as indicated by double asterisk, with copies by electronic mail this 27th day of February, 2002:

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