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ORAL ARGUMENT SCHEDULED FOR APRIL 24, 2007

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Nos. 05-1419, 05-1420, and 06-1087

OHNGO GAUDADEH DEVIA, and
STATE OF UTAH,
Petitioners,

v.

U.S. NUCLEAR REGULATORY COMMISSION
and the UNITED STATES OF AMERICA,
Respondents.

ON PETITIONS TO REVIEW ORDERS OF AND LICENSE ISSUED BY THE
U.S. NUCLEAR REGULATORY COMMISSION

FINAL BRIEF FOR PETITIONER STATE OF UTAH

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), counsel for petitioner State of Utah ("Utah") certify as follows:

A. Parties, Intervenors, and Amici Curiae

Utah is the petitioner in Case Numbers 05-1420 and 06-1087. Ohngo Gaudadeh Devia is the petitioner in Case Number 05-1419. The Nuclear Regulatory Commission ("NRC") and the United States of America are the respondents. Private Fuel Storage, L.L.C. ("PFS"), and the Skull Valley Band of Goshute Indians (the "Band") are intervenors supporting respondents. The State of Nevada is an amicus curiae supporting petitioner. The Nuclear Energy Institute is an amicus curiae supporting respondents.

The proceedings below involved PFS's application to NRC for a license to construct and operate an Independent Spent Fuel Storage Installation ("ISFSI"), which is a facility where private parties may store nuclear waste. In addition to the parties appearing before this Court (all of which, other than State of Nevada, appeared before the agency), the following parties appeared before NRC: Confederated Tribes of the Goshute Indians; the Southern Utah Wilderness Alliance; Castle Rock Land & Livestock, Skull Valley Company, Ltd., and Ensign Ranches of Utah, L.C. ("Castle Rock, et al."); and the Bureau of Indian Affairs.

B. Rulings Under Review

All decisions made reviewable by NRC's September 9, 2005, decision (JA884-919) are under review, as are all decisions made reviewable by NRC's January 31, 2006, decision (JA986-96), as are all decisions made reviewable by NRC's issuance of License No. SNM-2513 on February 21, 2006. JA1992-2028. The Court's jurisdiction has been invoked for all decisions and actions of NRC with regard to NRC Docket No. 72-22-ISFSI.

C. Related Cases

The decisions and license under review have not previously been before this Court or any other court. Utah previously challenged NRC's authority under the Atomic Energy Act ("AEA") to license privately owned away-from-reactor spent

nuclear fuel storage facilities. *Bullcreek* v. *NRC*, 359 F.3d 536 (D.C. Cir. 2004). In *Skull Valley Band of Goshute Indians* v. *Leavitt*, 215 F. Supp. 2d 1232 (D. Utah 2002), *aff'd sub nom. Skull Valley Band of Goshute Indians* v. *Nielson*, 376 F.3d 1223 (10th Cir. 2004), a federal court held that federal law preempted regulations that Utah enacted relating to the transportation and storage of spent nuclear fuel.

The United States Court of Appeals for the Ninth Circuit has issued a decision rejecting NRC's conclusion (reached in the present case, and applied in companion cases) that the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, did not require the agency to assess the risk of terrorism in environmental impact statements. *San Luis Obispo Mothers for Peace* v. *NRC*, 449 F.3d 1016 (9th Cir. 2006), *petition for cert. filed*, 75 U.S.L.W. 3197 (Sept. 29, 2006) (No. 06-466).

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GLOSSARY

"1 x 10^{-6}/year," "1 x 10^{-6}," "10^{-6}," or "1E-6" refers to one in a million per year probability.

"1 x 10^{-7}/year," "1 x 10^{-7}," "10^{-7}," or "1E-7" refers to one in ten million per year probability.

"AEA" is the Atomic Energy Act, 42 U.S.C. § 2011 *et seq.*

"Aircraft crash," "air crash, "aircraft accident" or "air accident," refers to any plane, cruise missile, or military ordnance that may strike, fly into, crash at, or fall onto PFS's ISFSI.

"Aircraft loading" is the amount of impact from an air crash determined under the methodology described in the DOE Standard.

"Applicant" is a person or entity who applies to NRC for a license to perform a regulated activity, such as the possession of SNF and the construction and operation of an ISFSI, and is a party to the licensing proceeding before the Board.

"Band" refers to the Skull Valley Band of Goshute Indians, a sovereign Indian nation, from whom PFS proposes to lease land on which to construct and operate an ISFSI (although the Bureau of Indian Affairs has recently rejected the lease).

"BIA" is the Bureau of Indian Affairs in the Department of the Interior.

"BLM" is the Bureau of Land Management in the Department of the Interior.

"Board" refers to the three-judge panel known as the Atomic Safety and Licensing Board of the Nuclear Regulatory Commission, which adjudicates contentions to determine whether a license application meets NRC legal and technical regulatory requirements.

"Boundary event" is an accident or other occurrence that releases a total effective radiation dose equivalent of 5 rem (or other amount of radiation that exceeds the limits described in 10 C.F.R. § 72.106(b)), as measured on or beyond the owner controlled area (*i.e.*, outside of the perimeter surrounding the licensed facility).

"Canister" is the stainless steel container inside which SNF is stored.

"Cask system" refers to the overpack, the canister, and all of the other components associated with the unit within which SNF is stored. PFS proposes to use the Holtec HI-STORM 100 cask system.

"Commission" refers to the five members of NRC or a quorum thereof sitting as a body, which (among other responsibilities) may review the Board's decisions.

"Contentions" constitute the method by which parties to a licensing proceeding frame issues under NRC practice. They are reasoned objections to a license application or other proposal that a party files with the Board.

"Contention Utah K" is the contention in which Utah litigated whether the cumulative risk of an aircraft crash was a design basis event.

"Contention Utah RR" is the contention in which Utah litigated whether the EIS needed to evaluate the environmental effects of a terrorist attack.

"Contention Utah UU" is the contention in which Utah litigated whether the EIS needed to evaluate the environmental effects of DOE refusing to collect SNF from PFS's facility and of re-shipping SNF stored at PFS back to its owner for re-packaging.

"Cruise missiles" are winged guided missiles designed to deliver a warhead by flying at low altitudes to avoid detection by radar. Cruise missile testing is conducted over the UTTR. During a test, a cruise missile flies throughout the approved airspace (restricted UTTR airspace and Sevier B and Sevier D military operating areas) in a series of winding and overlapping flight paths.

"Design basis events" are accidents or occurrences that pose a credible risk of leading to a boundary event at a facility that NRC regulates.

"DOE" is the Department of Energy.

"DOE Standard 3014-96," "DOE Standard," or "the Standard" is *Accident Analysis for Aircraft Crash into Hazardous Facilities*, DOE-STD-3014-96 (October 1996,

reaffirmed May 2006) (available as reaffirmed at http://www.eh.doe.gov/techstds/standard/std3014/std3014.pdf). JA1037-1247. When applied as a complete approach, the methodologies in the Standard provide a framework for performing a conservative analysis of the risk posed by a release of hazardous radioactive or chemical material resulting from an aircraft crash into a facility containing significant quantities of such material. JA1046. The Standard uses the term "facility" to include "individual structures or buildings" or portions of structures, including critical structures, systems, and components (SSCs). JA1053. This includes a "multistructure conglomeration such as a storage tank farm." *Id.* SSCs include buildings, building components, and other structures (*e.g.* tanks, bunkers) whose failure could result in a release of hazardous material. JA1057.

"Ductility ratio" is a calculation used in DOE Standard 3014-96 to assess the extent that a component will collapse or be deformed from the impact force of an aircraft crash.

"EIS" is an environmental impact statement.

"FEIS" is the final environmental impact statement for the PFS facility, NUREG - 1714, *Final Environmental Impact Statement for the Construction and Operation of an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Tooele County, Utah* (December 2001), which is available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1714/. JA2033-3420.

"F-16" is a single engine military jet fighter aircraft used by the U.S. Air Force known as the F-16 Fighting Falcon, usually flown by a single pilot.

"Geologic repository" is a system, to be licensed by the NRC, intended for the permanent deep geologic disposal of high level nuclear waste and SNF and includes the GROA.

"Global response" is the method used in DOE Standard 3014-96 to determine the overall effect of the impact force of an aircraft crash on the cask system from deformation or collapse. If, from the "local response" calculation, a component is not shown to fail, the required next step is the calculation of global response, which must be within the limits specified by the DOE Standard.

"GROA" (which is pronounced *GROH-ah*) is a high-level radioactive waste facility that is part of a geologic repository, including both surface and subsurface areas, where waste handling activities are conducted.

"ISFSI" (which is pronounced *iss-FISS-ee*) is an independent spent fuel storage installation, which is a facility designed and constructed for the interim dry cask storage of SNF and other associated radioactive materials, that can be either located at a reactor site or, as in PFS's proposal, a standalone facility.

"Licensing Board" refers to the Board (*see supra*).

"Local response" is an empirical calculation used in DOE Standard 3014-96 to determine whether an object penetrates or perforates a specific layer of a structural component (*e.g.*, concrete overpack wall or steel overpack shell).

"MPC" is an NRC-licensed multi-purpose canister inside which SNF is placed and that is then welded shut. MPCs have the dual purpose of being used for both transporting and storing SNF.

"MTU" is a metric ton of uranium, which is 10% greater than a standard U.S. ton.

"NEPA" is the National Environmental Policy Act, 42 U.S.C. 4321 *et seq*.

"NRC" is the Nuclear Regulatory Commission, which was established by the Energy Reorganization Act of 1974, 42 U.S.C. 5801 *et seq*., to administer the licensing and other regulatory functions pursuant to chapters 6, 7, 8 and 10 of the Atomic Energy Act of 1954, as amended.

"NRC Staff" is NRC's administrative arm that, among other things, reviews license applications, and makes recommendations to the Commission whether to approve those applications. The Staff appeared before the Board as a party to the PFS licensing proceeding.

"NUREG-0800" is NRC's *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants* (June 1996) (available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/), which includes guidance for the threshold assessment of whether a credible event, such as a aircraft crash, poses an unacceptable risk to siting a nuclear facility.

"NWTRB" is the Nuclear Waste Technical Review Board, which Congress created in 1987 to review the technical and scientific validity of DOE's activities related to disposing of, among other radioactive waste, the nation's commercial SNF. *See* 42 U.S.C. § 10262.

"Overpack" (also referred to as a "storage cask") is a cylindrical storage unit with a hollow center (where the canister containing SNF resides).

"Penetration" refers to the process of one object either entering a barrier partly or passing through that barrier completely.

"Perforation" refers to the process of one object passing through a barrier completely.

"PFS" is respondent Private Fuel Storage L.L.C., which is a consortium of nuclear power companies that applied to NRC for a license to construct and operate an ISFSI on an Indian reservation located inside the State of Utah.

"PID" refers to 62 N.R.C. 635, LBP-05-29, which is the published version – as opposed to the "PID (Safeguards)" version – of the Board's "Final Partial Initial Decision Regarding F-16 Aircraft Accident Consequences." Safeguards information that was contained in the February 24, 2005, decision has been redacted from this version of the decision.

"PID (Safeguards)" refers to the Safeguards version of the PID, dated February 24, 2005, which is the Board's decision following the second hearing on aircraft crashes. The body of the decision is identical to the published PID except for Part B of the decision, for which the Safeguards version contains information that NRC has prohibited to be disclosed publicly under 10 C.F.R. § 73.21.

"Radiation release" refers to "boundary event" (*see supra*).

"Rem" is a unit for measuring absorbed doses of radiation.

"Safeguards" is a classification NRC gives to information that describes physical protection of nuclear material and fixed nuclear sites. Safeguards information may not be publicly disclosed and requires special handling procedures. *See* 10 C.F.R. § 73.2 (definitions) and § 73.21 (protection of Safeguards information).

"Sevier B" and "Sevier D" are designations of two overlaying UTTR Military Operating Area (MOA) airspaces. Part of these MOAs are located over the PFS site. The Sevier B MOA extends from 100 feet to approximately 5,000 feet above ground level. The Sevier D MOA extends from approximately 5,000 feet to 13,750 feet above ground level. Air-to-air combat training, cruise missile testing, and major military air exercises are authorized to be conducted within the Sevier B and Sevier D MOAs.

"SNF" is spent nuclear fuel, which is irradiated fuel (*i.e.*, a form of high level radioactive waste) that has been withdrawn from a nuclear reactor.

"Staff" refers to "NRC Staff" (*see supra*).

"Standard Contract," promulgated at 10 C.F.R. § 961.11, is a contract entered into between DOE and each U.S. nuclear utility, wherein in return for a fee on electricity generated from nuclear power and paid into the Nuclear Waste Fund, DOE would take title to, transport and dispose of SNF. *See* 42 U.S.C. § 10222.

"Standard Review Plan" refers to "NUREG-0800" (*see supra*).

"UTTR" is the Utah Test and Training Range, the largest overland military test and training ground in the continental United States. It includes large areas of the land and airspace to the west and northwest of the proposed ISFSI. At the UTTR, the military conducts air-to-air combat training, bombing runs, large footprint weapons testing, and testing of cruise missiles and experimental military aircraft and materiel. The UTTR airspace includes restricted airspace and Military Operating Areas. The proposed PFS ISFSI site is directly beneath two overlaying UTTR military operating area airspaces, Sevier B and Sevier D. Restricted airspace over the eastern edge of UTTR South (the Range is divided into UTTR South and UTTR North) is approximately two miles west of the proposed PFS ISFSI site and extends west to beyond the Utah-Nevada border.

"Yucca Mountain" is the proposed site in Nevada for the geologic repository.

"Yucca EIS" or "Yucca Mountain EIS" is the Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, prepared by DOE, and available at http://www.ocrwm.doe.gov/documents/feis_a/index.htm.

JURISDICTION

I. Subject-Matter Jurisdiction

This case challenges orders and a license issuance by the U.S. Nuclear Regulatory Commission ("NRC" or "Commission"). This Court held in *Bullcreek* v. *NRC*, 359 F.3d 536 (D.C. Cir. 2004), that NRC had jurisdiction to license ISFSIs under the AEA, 42 U.S.C. §§ 2011 *et seq*.

This Court has jurisdiction under the Hobbs Act, 28 U.S.C. §§ 2342(4) and 2344, and the AEA, 42 U.S.C. § 2239. A petition for review was filed November 8, 2005, which was within 60 days of NRC's arguably final order of September 9, 2005. JA884-919. Utah filed a second petition for review on March 6, 2006, which was within 60 days of both NRC's January 31, 2006, final decision denying Utah's motion to reopen, JA986-96, and its issuance of License No. SNM-2513 to PFS on February 21, 2006. JA1992-2028. The petitions seek review of final agency action.

II. Standing

Utah's statement of standing immediately precedes the Argument. Cir. R. 28(a)(7).

STATEMENT OF ISSUES

1. Whether NRC acted arbitrarily and capriciously and contrary to law when it concluded that an aircraft or cruise missile crash into the proposed nuclear storage facility was so unlikely that it need not be considered in the facility's design. More specifically:

a. Whether NRC erred by setting the test for whether an accident was "credible" at 1×10^{-6} without responding to any of Utah's four factual arguments that supported a different standard.

b. Whether the Board erred by prohibiting Utah from presenting evidence that an F-16 crash that damaged or destroyed the overpack would release radiation where Utah informed the Board that it was litigating damage to "any" component of the cask system (including the overpack).

c. Whether NRC erred by treating the 1×10^{-6} test as a bright-line rule even though the calculated accident risk (0.86×10^{-6}) is essentially equal to 1×10^{-6} and past application of NUREG-0800 (and a dissenting Commissioner and a dissenting Board member) treated the risk standard as approximate given the imprecise inputs used in the calculation.

d. Whether the Board erred when it failed to assign any probability to a cruise missile strike on PFS's facility.

e. Whether the Board erred when it declined to apply the Standard promulgated by DOE for assessing the risk of a plane crash into a hazardous facility, and used by DOE to assess a crash into a cask system containing SNF.

f. Whether the Board erred when it failed either to assess whether individual inputs that led to its calculation of the cumulative probability of an air crash were appropriately conservative or whether the calculation as a whole was appropriately conservative.

2. Whether, while applying the summary disposition standard, the Board erred by resolving in PFS's favor disputed factual issues about DOE's willingness to accept PFS's canisters for permanent storage and whether PFS's nuclear waste would need repackaging away from PFS's site.

3. Whether NRC erred by concluding that it was not required to evaluate the likely environmental effects of a terrorist attack on PFS's facility.

STATUTORY/REGULATORY ADDENDUM

Pertinent statutes and regulations are reproduced in the attached addendum.

STATEMENT OF FACTS

I. Background

Producing nuclear power yields lethal byproducts, including SNF, which is "[o]ne of the most hazardous materials made by man." *Spent Nuclear Fuel*, GAO-03-426

at 1 (2003) ("GAO-03-426"). In the Nuclear Waste Policy Act of 1982 ("NWPA"), 42 U.S.C. 10101 *et seq.*, Congress authorized NRC to regulate SNF storage facilities. One such facility is an ISFSI. 10 C.F.R. Part 72. "[D]eteriorating public confidence in our ability to deal safely with nuclear waste, together with other critical safety and economic issues, . . . was [Congress's] catalyst for the enactment of Nuclear Waste Policy Act." *Florida Power & Light Co.* v. *Westinghouse Elec. Corp.*, 826 F.2d 239, 252 (4th Cir. 1987).

SNF is contained inside steel canisters. For storage at an ISFSI, each canister is placed inside an overpack, a 20-foot-tall cylindrical exoskeleton made primarily of unreinforced concrete. An "overpack (or cask) provides shielding." http://www.privatefuelstorage.com/faqs/faq-earthquakes.html. Shielding "ensure[s] that persons near a container are not exposed to significant . . . radiation." GAO-03-426 at 28. Without shielding, SNF "can kill a person exposed directly to it within minutes or cause cancer in those who receive smaller doses." *Id.* at 1. "Transporting spent nuclear fuel is potentially dangerous, since a train derailment, collision, sabotage, or terrorism could result in lethal and environmentally destructive radioactive leakage." *Consol. Rail Corp.* v. *ICC*, 646 F.2d 642, 643 (D.C. Cir. 1981); *id.* at 643 n.4 (noting SNF release during transport could cause thousands of deaths).

II. PFS's Proposal

In June 1997, PFS applied to NRC for a license to construct and operate a 40,000-MTU ISFSI on an Indian reservation inside Utah.

PFS's facility would sit between a military base that conducts approximately 7000 F-16 fighter-jet sorties each year over PFS's site and the UTTR, a cruise missile and military testing range. JA367; JA923. Despite "full knowledge that it was under a busy military training airway," JA384, PFS selected the site because the landowner (the 80-adult-member Band) purported to lease the land. *See* http://privatefuelstorage.com/project/whyutah.html (site selected because of "willing host"). *But see* p. 14, *infra* (BIA rejection of PFS lease). The ISFSI would store 4000 cask systems, each holding 10 MTUs of SNF. JA352. PFS's design does not call for any barrier whatsoever to prevent airborne objects from crashing into the cask systems.

III. Utah Challenges The Proposed ISFSI

In November 1997 Utah filed contentions relating to PFS's proposal. Utah filed supplemental contentions as additional health and safety concerns emerged. We summarize below relevant aspects of those contentions.

A. Risk of an Air Crash

Utah contended that the cumulative risk that planes, bombs, or missiles may crash into the ISFSI was a "design basis event" – an event that has a credible chance of releasing radiation beyond the regulatory limit. *See* JA229; 10 C.F.R. § 72.106(b). This issue is "Contention Utah K."

PFS moved for summary disposition on Contention Utah K, which the Board granted in part. JA194. Summary disposition is functionally identical to summary judgment. JA258. The Board held no hearing to assign a probability to the risk of a cruise missile strike, stating only that a strike was "extremely unlikely." JA202.

Also, although Utah advocated a 1×10^{-7} test for assessing whether events are credible, the Board used 1×10^{-6} as the probabilistic standard for design basis accidents.[1] JA204-05. Noting the "significant policy and resource implications of this particular ruling," the Board certified the issue to the Commission. JA205. The Commission affirmed. JA227-37. "[T]he Commission reasoned that, because of the lesser consequences [of an accident at an ISFSI as opposed to a reactor] . . . a greater likelihood of an accident . . . could be tolerated." JA354 (discussing Commission's decision). Commissioner Dicus dissented. She would have required "a factual determination whether the consequences of a potential accident at an ISFSI are more

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[1] These mathematical terms are defined in the Glossary.

similar to those of an accident at a GROA [*i.e.*, a facility where 1×10^{-6} is 'credible'] or those of an accident at a nuclear power reactor [where 1×10^{-7} is 'credible']." JA233.

From April through July 2002, the Board conducted twelve days of hearings to assess the likelihood of military aircraft crashing into the PFS site. It concluded that an air crash was credible because the probability was 4.29×10^{-6}. JA374.

The Board admitted that "in every previous case . . . the determination as to whether or not a potential radiation release . . . was a 'credible accident' was resolved by simple examination of the probability of a crash into the *site*," as opposed to whether a crash would actually release radiation. JA770 (emphasis in original). Moreover, the Board had given PFS an opportunity before the first hearing to assess the consequences of a crash, but PFS shaped its application "in a manner that kept evidence on the 'consequences' issue from reaching" the Board. JA348. The Board nevertheless declared that PFS could submit evidence "that the accident's consequences are not significant." JA355.

The parties prepared for a second hearing to assess crash consequences. Shortly before the second hearing, the Commission pressured the Board to complete the licensing process. JA690 (May 2003) ("We direct the Board to make every effort to wind up the consequences hearing no later than December of this year."). When

PFS was still unprepared to proceed to a hearing by the following spring, the Board narrowed the scope of the hearing from "consequences" to "cask penetration" to speed things up. JA718 (April 2004). The Board reasoned that, if there was no cask penetration, there would be no need to assess whether a radiation release would occur. The Board made clear that it was in a rush to complete the process. JA763 (licensing was "speeded somewhat by some novel techniques we employed"); JA776 ("We made the pragmatic, time-saving decision to have the hearing focus on only the second factor"); JA761. In its haste, the Board never specified what it meant by "cask penetration."

The Board finally conducted a second hearing in summer 2004. It issued a divided decision on February 24, 2005. The majority stated, "[t]he issue before us involves the limited safety question of whether the *canister* will, in a crash situation, maintain its integrity as a radiation boundary." JA780 (emphasis altered). Factoring for the probabilities of both a crash (*i.e.*, 4.29×10^{-6}) and canister perforation from a crash, the Board concluded that the likelihood of canister perforation at the PFS facility was roughly 0.86×10^{-6}. JA778. It concluded that a release of radiation was not credible. *Id.* The Board also found that there was no risk of a radiation release unless the canister was perforated, even though it had prohibited Utah from introducing evidence on the subject (because it related to "consequences"). JA937;

JA963. The Board wrote a 12-page explanation for missing the Commission's deadline. JA806-17. The Board acknowledged, "[t]he accidental aircraft crash issue was the most difficult and most closely contested one in this entire proceeding. The outcome is a close one, as evidenced by our rationale and by our split vote." JA796.

An aircraft crash would place enormous, instantaneous, three-dimensional strains on the overpack and canister. To assess how those strains would affect the canister, the Board used a "coupon test" that PFS advocated, which assessed how a small pristine strip of metal would react under slowly applied one-dimensional strains. JA3893-94. The Board refused to apply DOE's published standard for assessing the effects of a plane crash into a nuclear facility. DOE-STD-3014-96 (JA1037-1247). The Board held that the DOE Standard was inapplicable to cask systems, JA3891-92, even though DOE used it during the Yucca Mountain EIS process to assess the effects of an aircraft crash into a cask system. JA1449. In fact, in the second hearing both PFS and NRC experts relied on the first two evaluation steps of the DOE Standard ("aircraft loading" and "local response") but declined to use the third step ("global evaluation"), which PFS could not satisfy. Earlier, PFS's experts had used the DOE Standard to measure how a cask would react to a plane crash. JA3631.

Judge Lam dissented. JA974-78. He argued that NRC should have applied the DOE Standard. JA976. He wrote, too, that uncertainties in calculations meant that the calculated risk "leaves scant margin for error in meeting the 10^{-6} per year safety standard." JA975.

Utah moved for reconsideration because the Board conflated *cask penetration* (which could involve damage to the overpack even if the canister was unharmed) with *canister perforation* (which requires that an object pass through both the overpack and the canister). Utah reminded the Board that Utah had raised the issue of whether a design basis event could occur without canister perforation. It therefore requested a hearing on "consequences" to present evidence that overpack damage could cause a boundary event (*i.e.*, an excessive release of radiation). The Board denied Utah's motion for reconsideration because Utah (allegedly) had not preserved this issue. JA844. The Board admitted it could have "define[d] more precisely and expressly the outlines of, and limits upon, the issues." JA848.

Utah petitioned the Commission to review numerous issues relating to aircraft crashes. JA1873-1904. The Commission denied Utah's petition for review on September 9, 2005. JA884-919. Commissioner Jaczko dissented: "Because I believe the final figures reached by the Board's calculation . . . render an accident credible,

I believe an additional analysis of the consequences of the F-16 aircraft hazard should be assessed prior to the issuance of the license." JA912.

B. Environmental Effects of DOE's Refusal to Collect SNF or Accept PFS's Canisters at Yucca Mountain

NEPA requires agencies to prepare EISs that assess the environmental effects of major federal actions. 42 U.S.C. § 4332 *et seq*. The EIS for PFS's project concluded the facility's benefits exceeded its environmental costs. JA2501-12. That conclusion was predicated on the understanding that PFS "plans to completely seal spent fuel inside a canister that is never opened from the time it leaves the power plant until it is deposited into a permanent repository." JA819 (quoting JA726).

On October 14, 2004, Gary Lanthrum, Director of the Office of National Transportation within DOE's Office of Civilian Radioactive Waste Management, stated that DOE has no obligation to collect SNF from the PFS facility and would not accept fuel in sealed canisters, which PFS intends to use. If Yucca Mountain would not accept PFS's canisters, PFS's members would need to ship their SNF to another location to be unsealed and repackaged in a different type of canister before being sent to Yucca Mountain. JA819. This statement contradicted basic facts that led NRC's Staff to recommend licensing PFS's ISFSI.

By the time Mr. Lanthrum made this statement, the deadline for filing contentions had passed, but NRC has procedures to raise contentions after the record has

closed. 10 C.F.R. § 2.326 (formerly § 2.734). "[T]o justify the granting of a motion to reopen the moving papers must be strong enough, in the light of any opposing filings, *to avoid summary disposition*." JA823 (quoting *Vermont Yankee*, 6 A.E.C. 520, 523-24 (1973)) (emphasis altered).

Utah moved to reopen the record in light of Mr. Lanthrum's statement and to require the Staff to revise the FEIS. PFS argued that the statement was merely intended "to remind everyone that the amendment of the Standard Contract to incorporate the PFS-type eventuality – not contemplated when the Standard Contract was drafted – has yet to be done." JA824 (emphasis altered).

The Board declined to reopen the record. It observed that, although the contention was "too important to be ignored," JA830, because shipping SNF back and forth across the country for repackaging would create health and safety hazards and a "dysfunctional spent fuel management system," *id.*, "[t]he underpinning provided is essentially the State's interpretation of an 'unofficial' oral opinion by a DOE Office Director." JA820. The Board resolved in PFS's favor the perceived ambiguity about what Mr. Lanthrum meant. It added, "[i]f the State's interpretation of the DOE statement were correct, however, we might well reach the opposite result." JA824.

Utah filed a petition for review, which the Commission denied on June 20, 2005. JA867-83.

On October 25, 2005, DOE announced officially that, with few exceptions, it would accept only SNF packaged at reactor sites and placed in a DOE standardized canister, whereas its previous plan had been to accept SNF in a variety of canisters and engage in repetitive handling and repackaging of bare fuel at the Yucca Mountain repository. *See* JA1956-60. Utah moved to reopen the record in light of the new evidence that the FEIS relied on false assumptions.

On January 31, 2006, the Commission denied Utah's motion. JA986-96.

C. Environmental Effects of a Terrorist Attack

Following September 11's terrorist attacks, Utah filed a contention arguing that NEPA required EISs to assess the environmental effects of a terrorist attack because NEPA requires consideration of all reasonably foreseeable environmental impacts. The Board declined to admit the contention even though "this question is a close one and another Licensing Board has recently reached a somewhat different conclusion." JA246 (citing *Duke Cogema,* 54 N.R.C. 403 (2001)). It referred the case to the Commission, which upheld the Board's decision. JA326-41.

NRC's decision in a companion case was challenged in the Ninth Circuit, which held that NRC erred by refusing to assess in an EIS the environmental effects of a terrorist attack. *See San Luis Obispo Mothers for Peace* v. *NRC*, 449 F.3d 1016 (9th

Cir. 2006) ("*Diablo*"), *petition for cert. filed*, 75 U.S.L.W. 3197 (Sept. 29, 2006) (No. 06-466).

IV. License Issuance and Subsequent Developments

On February 21, 2006, NRC issued License No. SNM-2513 to PFS. Utah petitioned for review.

To build its facility, PFS needs not only an NRC license, but also authorization from BLM to transport SNF across public lands and approval from BIA of PFS's lease with the Band. On September 7, 2006, both of those agencies denied the necessary approvals, without which PFS cannot construct its ISFSI. *See* 71 Fed. Reg. 57,005-06, 58,629 (2006) (summarizing BLM and BIA decisions). Unless PFS can overcome those disapprovals through judicial review or some other means, this case is moot and the challenged NRC orders and license must be vacated. *Mechling Barge Lines, Inc.* v. *United States*, 368 U.S. 324, 329 (1961).

SUMMARY OF ARGUMENT

PFS's facility is too dangerous: PFS wants to store 40,000 tons of lethal nuclear waste under the open skies at an Indian reservation that 7000 F-16s fly over annually and that is adjacent to a military test and training range. NRC licensed the project only by failing to address four separate arguments why 10^{-6} was not an appropriate threshold for assessing whether accidents are credible; prohibiting Utah from

showing that damage to the overpack would release radiation; pretending that there was a zero probability of a cruise missile strike; overlooking DOE's interpretation of DOE's own standard for assessing the effect of strain on metal; and ignoring NRC's previous commitment to using conservative inputs when calculating probabilities of accidents. Even after those rulings low-balled the hazards posed by PFS's ISFSI, the facility was *still* too dangerous, so NRC ignored its own guidance document that would have treated 0.86×10^{-6} as comparable to 1×10^{-6} because the 1×10^{-6} standard is not a bright-line test.

NRC and its Board further disregarded compelling evidence that DOE is unlikely to collect, or accept at Yucca Mountain, PFS's canisters, which would change fundamental assumptions underlying the FEIS. Finally, in a holding that the Ninth Circuit has since rejected in a companion case, *Diablo*, 449 F.3d at 1023, NRC decided that the EIS did not need to assess the environmental effects of terrorism.

NRC neglected to explain critical issues, such as the scope of the second hearing in the air crash contention. And the Board's and NRC's subsequent refusal to assess loss of shielding, terrorism, or the effects of DOE's revised policies all postdated their repeated admissions that they were cutting corners to finish the licensing process; analysis of their decisions reflects that they were more concerned with ending the proceedings – which were delayed by problems with PFS's

application – than with correctly applying the law. *See* JA811 ("*The Applicant's changes, and the Staff's review of those changes, ultimately led to a two-year scheduling delay beyond the Board's control.*"). As a result, the Board ignored the terms of its own regulations, 10 C.F.R. § 72.106(b), by failing to assess whether an accident would release radiation when the protective shielding around the waste is damaged or destroyed.

There are still unresolved questions about whether the ISFSI is acceptably safe. And the facility is more dangerous than NRC claims because of the methods the agency employed. Collectively, NRC's and the Board's errors reflect a larger pattern in which they failed to satisfy their basic obligation to ensure public safety and public confidence in SNF storage. Individually, the decisions are arbitrary and capricious and contrary to law, and should be remanded.

STANDING

As NRC found below, Utah's "health, safety, and environmental interests relative to its citizens living, working, and traveling near the proposed facility and in connection with its property adjoining the reservation and the proposed transportation routes to the facility are sufficient to establish its standing in this proceeding." JA19.

ARGUMENT

I. STANDARD OF REVIEW

With respect to the issues raised in Sections II and III below, this Court will review NRC's decisions to determine whether they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). An agency decision is arbitrary and capricious if the agency "entirely failed to consider an important aspect of the problem," *Motor Vehicle Mfrs. Ass'n* v. *State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983), or if it did not "cogently explain why it has exercised its discretion in a given manner." *Id.* at 48. The court must "determine whether the [agency] has considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Baltimore Gas & Elec. Co.* v. *NRDC*, 462 U.S. 87, 105 (1983). An agency may not resolve an issue after stating that the "issue was beyond the scope of the hearing" and the "matter was never pursued as an issue in the hearing." *Select Milk Producers, Inc.* v. *Johanns*, 400 F.3d 939, 942-43, 948 (D.C. Cir. 2005).

With respect to the NEPA issue raised in Section IV, the standard of review is the same with respect to discretionary determinations but with respect to questions of law this Court's review is *de novo*. Because "NEPA's mandate is addressed to all federal agencies," NRC's interpretation "is not entitled to the deference that courts

must accord to an agency's interpretation of its governing statute." *Citizens Against Rails-to-Trails* v. *STB*, 267 F.3d 1144, 1150 (D.C. Cir. 2001).

II. NRC FAILED TO EVALUATE PROPERLY WHETHER AN AIR CRASH WAS A CREDIBLE EVENT.

A. NRC Ignored Utah's Arguments When It Set the Standard for Credible Accidents.

NRC must examine "natural and man-induced events that could affect the safe operation of" ISFSIs to decide whether those postulated occurrences are *design basis events*. 10 C.F.R. §§ 72.90(b); *see also id.* at § 72.92, § 72.94. Design basis events are accidents or occurrences that pose a credible risk of radiation release. *Id.* § 72.90(c). If there is a design basis event at the ISFSI, the facility must be redesigned or NRC must deny the application. *Id.* § 72.90(d).

NRC's regulations fail to specify how "credible" an accident must be, so "[t]he Commission must decide the threshold probability for a design basis event at an ISFSI." JA229. NRC has addressed this question for two other types of facilities. At nuclear plants, NRC uses 1×10^{-7} as its credible-accident threshold.[2] NUREG-

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[2] An event with a probability below 1×10^{-6} is deemed not credible if there are additional conservatisms that suggest that the actual risk is lower than the calculated risk. JA1008. NRC has not ruled whether the PFS facility would satisfy the 1×10^{-6}-plus-conservatism standard described in NUREG-0800. *See* JA232 ("if Utah were correct that NUREG 0800 is directly applicable . . . questions would remain concerning the estimate's conservativeness that would preclude the Board from

0800 § 3.5.1.6-2 to -3 (JA1019-20). At the proposed Yucca Mountain GROA an accident is credible if its likelihood is 1×10^{-6}. 61 Fed. Reg. 64,257, 64,259 (1996). Thus, an accident is credible if its probability is "one in ten million for nuclear power plants and one in a million for . . . [a] GROA." JA229.

Neither of these applied to ISFSIs. Initially, PFS used NUREG-0800's standard to assess whether an event at the ISFSI was credible. JA1263 ("NRC has determined that an air crash probability of less than 10^{-7} per year is insignificant."). But PFS backpedaled from that standard when it realized that, even under its own calculations, the probability of an air crash at the ISFSI exceeded that figure. JA1483. It argued subsequently that the GROA's 1×10^{-6} (or "1E-6") standard should apply.

On review, NRC wrote, "the most reasonable basis for the Commission to reach a decision here would be to examine the risks associated with these two kinds of facilities to determine which is most comparable to the proposed ISFSI." JA229-30. NRC concluded that ISFSIs are more like a GROA than nuclear plants. However, it would have done well to follow its own suggestion; Utah introduced evidence showing that the "risks associated" with ISFSIs are greater than those posed by a GROA, but NRC failed to address those points.

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finding that the threshold probability is one-in-a-million.").

First, Utah introduced unrebutted evidence that SNF at PFS's ISFSI will be much more radioactive than SNF stored at a GROA. JA1299 ("The individual consequences at the site boundary range between 70 and over 10,000 rems . . . . This greatly exceeds 2.1 rems estimated by DOE for surface facilities" at the GROA). PFS moved to strike this evidence, but the Board denied the motion. JA224 ("[w]e see no reason to strike this material [*i.e.*, Resnikoff's testimony], which is irrelevant to our ruling"). Instead of striking the evidence, the Board (and the Commission) ignored it.

Second, Utah noted that the five-foot-thick walls surrounding the GROA facilities would provide additional protection against radiation release. JA1877-78. SNF stored at the PFS ISFSI would sit in the open, so there are no walls or other barriers either to prevent planes or missiles from striking casks or to block the release of radiation when cask systems are compromised.

Third, SNF at the ISFSI will be "stored in concrete casks . . . whereas at Yucca Mountain, [SNF] will be stored in steel shipping casks." JA1380.

Fourth, a national security component specific to PFS's facility, which would store SNF underneath low-altitude military operating areas over which PFS has no control, justifies using a more demanding credibility threshold than at the GROA

because an accident releasing radiation at PFS provides an entirely different, additional kind of "consequence": It compromises military readiness. JA1878.

"An agency's 'failure to respond meaningfully' to objections raised by a party renders its decision arbitrary and capricious." *PPL Wallingford Energy* v. *FERC*, 419 F.3d 1194, 1199 (D.C. Cir. 2005); *see also Public Service Commission* v. *FERC*, 397 F.3d 1004, 1008 (D.C. Cir. 2005) (agency must "respond meaningfully to the arguments raised"). Similarly, "an agency [action is] arbitrary and capricious if the agency . . . entirely failed to consider an important aspect of the problem." *Morall* v. *DEA*, 412 F.3d 165, 177 (D.C. Cir. 2005). Here, there were substantial differences between a GROA and ISFSIs. Utah raised those differences, which could have changed the ultimate outcome, but NRC did not address them.

Commissioner Dicus's dissent highlighted NRC's failure. She called for a "factual determination whether the consequences of a potential accident at an ISFSI are more similar to those of an accident at a GROA." JA233.

NRC's decision is even more mystifying because the Commission ruled two weeks earlier that, although "there are similarities between a facility regulated by Part 72 [*i.e.*, ISFSIs] and the GROA facilities proposed for Yucca Mountain[,] . . . there are important differences . . . that make it impractical to merely adopt the requirements of the current part 72." 66 Fed. Reg. 55,732, 55,740 (2001). And it

overlooked its own similar finding from earlier in the PFS licensing process: "The risks of ISFSI storage are also very different from those posed by the safe disposal of the irradiated fuel in a geologic repository." JA136.

The potential consequences of accidents at ISFSIs may be less than at nuclear plants, but NRC failed to assess the ways in which the consequences of ISFSI accidents exceed a GROA accident. It lacked a reasoned basis for saying that ISFSIs are more like a GROA than like nuclear plants, and it did not even consider an in-between standard. JA1876-78. When a midpoint makes sense, it is arbitrary not to consider it. *Cf. Tennessee Gas Pipeline Co.* v. *FERC*, 926 F.2d 1206 (D.C. Cir. 1991) (remanding case where agency failed to present "legitimate bases for departing from the midpoint" when setting rates).

B. NRC Failed to Assess Whether Damage to the Overpack Would Cause a Radiation Release and Improperly Prohibited Utah from Introducing Evidence of a Release.

NRC described the critical issue in Utah's air crash contention: "[T]he ultimate focus is on a unified question, *i.e.*, the probability of an accident *that would lead to radiation doses beyond*" the regulatory maximum. JA384 (emphasis added); *see also* 10 C.F.R. § 72.106. Notwithstanding the importance of that question, NRC failed to resolve it.

There are two primary ways an air crash can release radiation, and NRC addressed only one of them. In the first scenario, the entire cask system is perforated. The overpack *and* the canister are both damaged, and radiation is released into the environment. In the second scenario, only the overpack is damaged. Although the canister is not perforated, it is the overpack that provides shielding, and the thin canister walls would not prevent the release of radiation. The Board addressed the first scenario. But even though PFS admitted that an overpack would be damaged in a crash, JA4004, the Board did not address – and it alleges that Utah waived the right to address – whether that overpack damage would reduce shielding enough to lead to a boundary event.

The Board recognized that Utah's "reasoning has merit as a theoretical construct." JA844. But it refused to address the argument because "the issue . . . was never presented." *Id.* (emphasis omitted). The Commission, too, held, "Utah did not raise arguments or concerns about the shielding." JA897. Those assertions, however, are false. *See generally* JA1883-89.

Utah submitted an offer of proof to NRC that reflected its intention to raise the loss-of-shielding issue: "Had the State been permitted to try consequences, it would have integrated the results of the cask breach probability phase to show there is greater than a one in a million probability that there will be a breach of the barriers

between the spent fuel and the environment (*i.e.*, *the overpack*, the canister, *or* the fuel cladding) . . . ." JA3592 (emphasis added). Utah added elsewhere in its offer of proof, "to summarize here, no credible crash may: Breach *any* confinement system . . . ." *Id.* (Safeguards) (emphasis added).

In denying Utah's motion for reconsideration, *the Board did not address this language* and stubbornly declared that Utah's "offer of proof put forward material bearing only on radiological releases escaping from (or criticality stemming from) a punctured *canister*." JA847 (emphasis altered). But that claim contradicts the plain language of Utah's offer of proof.

Utah's statements easily satisfy the applicable test of whether a party raised an issue, which is whether NRC had a "'fair opportunity' to entertain" the issue. *Nuclear Energy Institute, Inc.* v. *EPA*, 373 F.3d 1251, 1290-91 (D.C. Cir. 2004).

Utah's expert statements and submissions to the Board further reflect that Utah was concerned with damage to the overpack (*i.e.*, loss of shielding):

- Utah's experts evaluated the effects of various crash scenarios on the overpack for situations in which canister perforation might not occur. *See* JA3242 ("A series of parametric studies evaluating the impact from the F-16 *into the storage overpack* were performed.") (emphasis added); JA3244 ("bomb easily penetrates the lid *of the overpack*") (emphasis added);

Hoffmann *et al.* Report 61 (Sept. 2003) ("The damage in the zone of impact and at the toe *of the overpack* increases with impact speed.") (emphasis added).

- Utah asked the Board to reach findings of fact relating to overpack-damage irrespective of canister-damage. JA3626-30; JA3711-13. For example, Utah asked the Board to find that strain "in excess of 21% in the outer shell of the overpack [would] caus[e] it to rupture." JA3626. It further asked the Board to find, "All ductility ratios computed for the overpack shells exceed the permissible limit of 10. The PFS analysis listed. . . . shows an actual rupture of the outer shell." JA3629.
- Utah argued that these findings of fact supported a conclusion that the overpack would be damaged: "[N]one of the scenarios analyzed by any party show that the overpack outer shell or inner shell is safe from rupture. Accordingly, the Licensing Board finds the evidence regarding assessment of the HI-STORM 100, Rev. 0 overpack fails to prove containment of radioactive material." JA3712. In other words, Utah argued that if the inner shell of the overpack was damaged, PFS had failed to show that radioactive material would be "contain[ed]." *See also id.* ("there is no evidence in the record to demonstrate that an F-16 crash . . . will not result

in a breach of the overpack shell or not result in increases in radiation dose.").

- Another Utah expert proffered testimony that raised loss of shielding: "In some potential accident situations, the MPC would remain generally enclosed by its overpack but the overpack would experience substantial damage." JA3250 (emphasis added).

Utah did raise the loss-of-shielding issue. There would have been no reason for Utah to assess whether an accident would damage only the overpack – or to argue that overpack damage could compromise radiation containment – if the State was concerned exclusively with whether the *canister* would rupture.[3]

The Board, in fact, reached a conclusion on this issue (without considering Utah's proposed findings) when it declared – without *any* evidence – that a loss of shielding would not lead to a boundary event: "[A]s long as the MPC is not breached, the cask has not failed." PID at B9 n.82. The Board relied on a PFS assertion (not evidence) for its conclusion: "Applicant noted that . . . it does not matter, for

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[3] Utah further demonstrated its concern with loss of shielding by evaluating the effect of a crash on the Boral shield (*i.e.*, a thin layer inside the cask system whose only purpose is to absorb radiation). JA3243 ("strong evidence that the Boral shielding will be damaged"); JA3244 ("Boral shielding loses its function").

purposes of this proceeding, how damaged the cask becomes as long as the MPC does not rupture." *Id.*

The agency is trying to have it both ways. It addressed the loss of shielding issue by stating – without evidence, without a hearing – that overpack damage could not lead to a radiation release. But it also prohibited Utah from introducing evidence to refute this conclusion. This Court remands such matters to agencies. *See Williston Basin Interstate Pipeline Co.* v. *FERC*, 165 F.3d 54, 63-64 (D.C. Cir. 1999).

The Board itself considered increased radiation from loss of shielding earlier in PFS's licensing proceeding. In a decision about whether an earthquake would cause a release of radiation, the Board decided, "[t]he greatest potential for increase in radiological doses at the boundary would not be due to damage *to the cask* or the MPC, but to the possibility that the bottom of the cask, *which has less radiation shielding*, might face the OCA boundary." JA673 (emphasis added). If the greatest risk of a radiation release for another kind of accident is a loss of shielding, and given NRC's "ultimate focus" on the question of whether an accident "would lead to radiation doses" exceeding the regulatory limit, JA384, it was arbitrary and capricious *not* to consider this issue.

It is no secret that damage to the overpack will reduce the cask's shielding. NRC case law states, "[t]he MPC is the confinement system for the stored fuel. . . .

The storage overpack provides radiation shielding . . . ." JA547; JA868 ("The MPC contains the fuel . . ., while the cask (or 'overpack') provides shielding"). Elsewhere, NRC's Staff addressed the loss-of-shielding question. JA2318 (wind-driven "missile could cause a localized reduction in shielding").

Even if NRC did not have a "fair opportunity to entertain" the question in the second hearing, NRC's own pronouncements led Utah reasonably to believe that loss of shielding could be raised at a subsequent hearing. An agency must provide parties "with adequate notice of the issues that would be considered, and ultimately resolved, at that hearing." *Williston Basin*, 165 F.3d at 63. When an agency's usage of a term leads one party to believe reasonably that an issue has been omitted from a hearing, a remand is proper. For example, in *General Electric Co.* v. *EPA*, 53 F.3d 1324 (D.C. Cir. 1995), although an agency had the discretion to define a term, it was required to put parties on notice of that meaning. *Id.* at 1330-31 ("[S]uch notice would be provided only if it was reasonably comprehensible to people of good faith that distillation is indeed a means of 'disposal.'"). The Court held that the agency "did not provide [appellant] with fair warning of its interpretation of" that word. *Id.* at 1333. "Where, as here, the regulations and other policy statements are unclear, where the petitioner's interpretation is reasonable, and where the agency itself struggles to provide a definitive reading of the regulatory requirements, a regulated

party is not 'on notice' of the agency's ultimate interpretation of the regulations . . . ." *Id.* at 1333-34.

Under this test, Utah is entitled to a hearing on loss of shielding. The second hearing was intended to assess whether "the facility is robust enough so that a crashing F-16 would not penetrate a cask." JA775; *see also* JA719; JA690 ("if PFS successfully demonstrates . . . that the posited crashes would not penetrate a storage cask"); JA348 ("whether a crashing F-16 would *penetrate* a spent fuel *cask*") (emphasis added). *See generally* JA342-480 (using phrase "cask penetration" repeatedly).

The words "penetrate" and "cask," however, are *both* inconsistent with NRC's revisionist interpretation of the scope of the second hearing. "Penetration" occurs when a missile enters the cask system *to any degree* (including, but not limited to, going all the way through it). JA1105; JA1056 (defining "penetration" as "[a] local damage that signifies displacement of the missile into the target and is a measure of the depth of crater formed at the zone of impact"). By contrast, "perforation" occurs only when a missile "fully penetrates" an object. *Id.*; *see also* JA1075 ("[T]o prevent *perforation* of a steel target, the minimum wall thickness required is at least 125 percent of the predicted *penetration* depth.") (emphasis added).

The Board used the word "cask" even less clearly than it used "penetrate." It routinely used "cask" to refer exclusively to the overpack. *See, e.g.*, JA171 ("The PFS ISFSI is designed to accommodate up to 4000 *concrete storage casks* containing sealed metal *canisters.*") (emphasis added); JA726 ("cask and canister"); JA734 (same); JA704 ("cask or canister"); JA597 ("cask surrounding . . . canister"); JA651 ("cask and canister"); JA475 (referring to "concrete storage casks"). "Cask" does not mean "canister."

The Board confirmed this point by using "cask" this same way even in the very decision in which it claimed that "cask penetration" referred to canister perforation: "Each carbon-steel-encased concrete cask would hold a stainless steel canister housing spent fuel rods." JA753; JA757 (referring to "*cask and canister* damage") (emphasis in original).

Even *after* Utah moved for reconsideration, NRC used the term "cask" interchangeably with "overpack": "The MPC contains the fuel and any byproducts, *while the cask (or 'overpack') provides shielding.*" JA868. As the Board admitted, "the word 'canister' was used only infrequently." JA846.

During the reconsideration hearing, in a critical admission, the Board conceded that it had previously discussed "casks" rather than "canisters":

> CHAIRMAN FARRAR: But, in our April 15th [2004] Order [*i.e.*, JA717-20], . . . we refer to rupturing a cask[ ]. Could they [*i.e.*, Utah] – first off, *I wish we hadn't said that.* But, when you go back to the pre-hearing conference that we were talking about, that's the language everybody used. *No one said hey, wait a minute, we're talking about the internal canister.*

JA3980-81 (emphasis added).

Finally, there is no dispute that a loss of shielding will occur. Each judge recognized separately that the overpack is a "sacrificial barrier" that will be damaged or destroyed in an air crash. JA4005 (Abramson, J.). "[I]f you read between the lines of our opinion, there is greater than a one in a million possibility that the shielding is damaged to some extent." JA3968 (Farrar, J.). "[T]he overpack is expected to fail in an F-16 crash scenario." JA802 (Lam, J., dissenting). PFS's counsel made the same admission. JA4004 ("I'm not saying there's no damage to the overpack."); JA4171 ("Judge Lam: [E]ven [PFS's expert] is saying that there will be local damage to the outer pack [*sic*] [*i.e.*, overpack]. Counsel for PFS: Right.").

In their haste to resolve these proceedings, NRC and the Board failed (1) to consider the materials that Utah introduced to establish that overpacks would fail or

(2) to notify the parties about the scope of the hearing. The Court should remand the case to hold a hearing on loss of shielding.

C. The Board Disregarded Its Own Prior Guidance by Treating the Credible Accident Standard as a Bright-Line Rule.

The Board treated the 1 x 10^{-6} standard as a bright-line rule. JA383-84. Although the Board rejected NUREG-0800's 1 x 10^{-7} standard for ISFSIs, it recognized that NUREG-0800 otherwise governed its analysis of whether a design basis event would occur. *See* JA383. NUREG-0800 was not intended to be evaded through math games; rather, as the Board observed, "As we read that text [of NUREG-0800], it indicates clearly that the formula was intended to be applied cautiously." JA384. But the bright-line approach that the Board applied draws arbitrary distinctions between functionally identical numbers and contravenes NUREG-0800.

NUREG-0800 provides that a risk level is acceptable if the probability "is estimated to exceed the NRC staff objective of *approximately* 10^{-7} per year." JA1008 (emphasis added). It notes elsewhere that design basis events must be "*less* than *about* 10^{-7} per year." JA1019-20 (emphasis added); *see also* JA1009 ("design basis events . . . are defined as accidents with a probability of occurrence of *about* 10^{-7} per year or greater) (emphasis added). NUREG-0800 also states, "[b]ecause of the

difficulty of assigning accurate numerical values to the expected rate of unprecedented potential hazards . . . *judgment must be used as to the acceptability of the overall risk presented.*" JA1008 (emphasis added). The qualifiers "approximately" and "about" and the call for "judgment" reflect that the test is a prudential rule, not a bright-line test.

The Board nevertheless applied a bright-line probability calculation, even though its own analysis undermined that approach. After the first hearing, the Board wrote, "the screening purpose for which the formula was created also suggests that, as the 'one in a million' criterion is approached, the appropriate response is to look more closely at the problem under scrutiny." JA473. It asked rhetorically whether a probability of "1.01 per million" would "truly be any different from one in which the calculation indicated that the likelihood was 0.99 per million." *Id.* It concluded, "[i]n such circumstances . . . the approach in NUREG-0800 seems to suggest that it would be better to proceed by sharpening an applicant's focus on identified problematic areas." *Id.* The Board nevertheless applied the credibility test as a bright-line rule.

Commissioner Jaczko applied the same reasoning, but reached a non-arbitrary conclusion: "An objective review of the inherent uncertainties associated with a calculation of this magnitude makes it clear that the probability of an accident is

'about' at the threshold which makes it credible." JA912 (dissenting opinion). Even when the calculated probability is nominally below "credible," he added, "[i]f those consequences could result in radiation exposures to the public that are above the exposure limits as defined by NRC regulations, then applicants are required to design against those possibilities." *Id.* Thus, Commissioner Jackzo recognized that 4.29 x 10^{-6} is "approximately" 1 x 10^{-6}. Similarly 0.86 x 10^{-6} is "about" 10^{-6}. He wrote, "[t]he important content of the calculated number is just the order of magnitude." JA914. Whether NRC assesses the probability of a design basis event as an order-of-magnitude test as Commissioner Jackzo suggested or a more case-specific test, 0.86 x 10^{-6} is "about" and "approximately" 1 x 10^{-6}. Thus, "the Board erred by establishing a new interpretation for the NUREG-0800 approximate probability, essentially replacing the credibility standard of 'about 10^{-7}' with 'exactly 10^{-7}'." JA915. And, as shown in subsection *II.F* of this Brief, changing any one of a half-dozen calculations would make canister perforation "credible."

NRC is not free (without proper explanation) to disregard NUREG-0800's guidance. Additionally, if the test is applied as a bright-line rule, that makes it more arbitrary that NRC omitted the risk of a cruise missile strike (*see* subsection *II.D*) and failed to consider a threshold between 1 x 10^{-6} 1 x 10^{-7} (*see* subsection *II.B*).

Because the probability of an air accident that could release radiation at PFS's facility was "approximately" 1x 10^{-6} and because NRC did not use "judgment . . . as to the acceptability of the overall risk presented," the case should be remanded to NRC to assess whether an air crash probability of 0.86 x 10^{-6} *was* a design basis event.

D. The Board Improperly Excluded Cruise Missiles from the "Cumulative" Probability of an Air Crash.

NRC was required to assess the *cumulative* probability of an air crash at the ISFSI. JA121; *accord* JA382 (assessing whether "estimated cumulative hazard . . . meet[s] the Commission's threshold criterion for credible accidents"). This figure should have included the probability that a cruise missile could strike the facility.

The Board estimated the probability of a variety of accidents, including ordnance or an F-16 crashing into the ISFSI. *See generally* JA342-480. After adding together the components, the Board concluded that the probability of an accident was more than four times 1 x 10^{-6}. JA447. However, the Board's calculation omitted the probability that a cruise missile would strike the facility.

"An agency's [action] will be found arbitrary and capricious if the agency has . . . entirely failed to consider an important aspect of the problem." *Advocates for Highway & Auto Safety* v. *Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136, 1144-45

(D.C. Cir. 2005). Because the Board did not calculate the probability of a cruise missile strike, it arbitrarily understated the cumulative probability of an accident.

Utah calculated the cruise missile probability at approximately 0.56×10^{-6}. JA1311. The Board rejected this calculation based on PFS's evidence that a crash was less likely than reflected in Utah's calculations. JA203. But, rather than *calculating* the probability of a cruise missile strike at the ISFSI, the Board assigned no numerical value to the risk of a strike, offering only the qualitative conclusion that it was "extremely unlikely." JA202.

Perhaps the Board was free to reject Utah's calculation. But it was arbitrary and capricious to pretend that the probability of a crash was *zero* merely because the Board concluded that Utah's calculation was too high. Given the Board's ultimate calculation of an 0.86×10^{-6} chance than an F-16 would perforate a canister (JA778), any additional probability above 0.14×10^{-6} (roughly one-quarter of Utah's calculated probability) would have resulted in a cumulative probability above 1×10^{-6}. To call an event "extremely unlikely" is simply not to answer the question whether its probability exceeds 0.14×10^{-6}.

This oversight is inconsistent with the Board's approach to other threats. For example, even though the risk of a cargo plane accident was much lower (3.0×10^{-9}) than the risk of a cruise missile strike, the Board still calculated the actual probability,

JA450-51, which allowed it to be added to the cumulative probability of an air crash. Similarly, in another case, an applicant computed the probability of a "missile strike" at the facility even though it was orders of magnitude below the risk posed by missiles in this case. *Houston Lighting & Power Co.*, 24 N.R.C. 295, 316 (1986). The Court should remand the case so that the Board can calculate the probability that a cruise missile will strike the facility.

E. NRC Erred by Failing to Defer to DOE's Interpretation of DOE's Own Standard.

It is difficult to predict accurately how a container will react under the immense strains that a crashing plane will inflict. But, given that the risk of an air crash at PFS's facility was "credible" and that much of the risk was attributable to F-16s, NRC needed to select a method during the second hearing to calculate what would happen to PFS's cask systems if struck by an F-16 fighter jet. NRC does not have its own standard for assessing this problem, but DOE does. *See* JA1037-1247 (the "Standard"). The Standard exists to "evaluate and assess the significance of aircraft crash risk on facility safety" and was developed to "establish[] an approach for performing a conservative analysis of the risk posed by a release of hazardous radioactive . . . material resulting from an aircraft crash into a facility containing significant quantities of such material." JA1045. "When applied as *a complete*

approach, the methodologies in this standard will result in a technically justified, conservative analysis of the risk posed by releases resulting from aircraft crash." JA1046 (emphasis added).

During an early hearing, the Board hinted that the Standard should apply when it observed that PFS's expert "has no prior experience . . . in using *the DOE Standard for aircraft crash analysis.*" JA393 (emphasis added). Moreover, PFS's experts used the Standard early in the case to assess the effect of a plane crash on the same cask system,[4] but later abandoned the Standard and proposed a different test.

PFS advocated a "coupon test" that measured, under laboratory conditions, how much unilateral strain a small piece of pristine steel could withstand before rupturing. Over Judge Lam's dissent, the Board used PFS's coupon test.[5] JA3892-93; *see also* JA1892. The Board concluded that the DOE Standard (and its "ductility

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[4] JA1498. Although the Board struck pre-filed testimony which included this report (JA1602; JA1606-09), we cite the report not as evidence but merely to show that PFS initially relied on the DOE Standard.

[5] As Judge Lam explained in dissent, "[t]he evidence provided by Utah persuasively shows that the concrete overpack of the spent fuel storage cask is exactly the type of structure (concrete structure with carbon steel shells) to which the DOE ductility ratio should be applied as a governing failure criterion." JA802. *See also* JA4138 (Judge Lam: "[D]o you mean, by showing us Appendix D to the DOE Standard, in which it clearly talks about a pressure vessel of some sort, that the ductility ratio should be applied to pressure vessel[s] as opposed to the Applicant and the Staff's claim that pressure vessel is exempted specifically from the DOE ductility ratio? Utah Counsel: Yes.").

ratio" concept) applied to "*structures*" but was not useful "to determine when a *non-structural* element will actually fail." JA3920 (emphasis in original). Although the Board did not clarify what it thought the dividing line was between "structures" and "non-structural elements," it clearly refused to apply the Standard to the steel components of the cask and expressly stated that "the overpack is not serving as a structural member." JA3921.[6]

This Court does not "accord deference to an agency's interpretation of regulations promulgated by another agency that retains authority to administer the regulations." *Amerada Hess Pipeline Corp.* v. *FERC*, 117 F.3d 596, 600 (D.C. Cir. 1997). Rather, NRC was obligated to defer to DOE's interpretation of DOE's own document.

DOE itself applied the Standard to the problem for which the Board held that the Standard was inapplicable. DOE prepared the Yucca Mountain EIS, which – as part of discussion of the no-action alternative – assessed in detail the effects of a

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[6] The Board used a two-step approach to assess how a crash would affect a canister. First, it calculated how much strain would be applied to the canister once the overpack had absorbed its share of the impact. Second, it assessed whether the canister would "rupture" under this strain. The parties used different methods to calculate the first issue, but the results were close enough not to make a difference; however, Utah would have "won" if the Board applied the DOE Standard to assess how the canister would react to that strain. *See* JA749 ("the approach the State advances in its reply brief appears to be of great importance to the outcome of the proceeding").

plane crash into an above-ground cask system containing SNF. JA1416-78. Like the PFS analysis, the relevant part of the Yucca Mountain EIS assumed the use of a cask system with a steel canister. JA1437 ("[t]his analysis [of the no-action alternative] assumed that DOE would store dry spent nuclear fuel in stainless-steel canisters inside above-grade reinforced concrete storage modules"). In NRC's words, DOE's application of its own standard to that situation would have been misapplication "to determine when a non-structural element will actually fail." JA3920 (emphasis omitted).

In support of the Yucca EIS, three experts prepared a report that applied the Standard to assess how the cask systems would react. *See* Davis *et al.* Report (1998) (JA1248-61; JA1513-17) (cited in Yucca EIS (JA 1449)). The experts' analysis was based on the Standard. JA1249-54; *see also* JA1475 (reflecting that Davis *et al.* relied on the DOE Standard).

DOE's use of the DOE Standard in the Yucca EIS reflects that, whether or not cask systems are "structural," the Standard is used to assess how cask systems will react to plane crashes. NRC acted arbitrarily and capriciously by interpreting DOE's issuance contrary to DOE's own interpretation. NRC might have been free to reject the Standard because of a substantive disagreement with whether the document satisfied NRC's own policy considerations. But NRC reached its decision based on

the *scope* of the Standard (*i.e.*, whether it applied to a situation) rather than because of the Standard's merits (*i.e.*, whether it was a good standard).

The Board's failure to rely on the DOE Standard also violated NRC's own obligation to use conservative standards. "NRC's approach to protecting public health and safety is based on the philosophy of 'defense-in-depth' [which] . . . requires the application of *conservative codes and standards* to establish substantial safety margins . . . ." *Firstenergy*, 58 N.R.C. 151, 160 (2003) (emphasis added).

F. The Board's Failure to Use Conservative Inputs Was Arbitrary and Capricious.

When there is uncertainty, NRC must apply the more conservative of two inputs. *Southern California Edison Co.*, 15 N.R.C. 688, 704 n.30 (1982) ("The importance of the matter from a safety point of view and the lack of overwhelming evidence that the Applicants' interpretation is correct . . . require this Board to adopt the more conservative position."). And the Board must assess each input to determine whether, individually, it is conservative. *Public Service Co. of New Hampshire*, 29 N.R.C. 519, 530 (1989). Likewise, NRC must use "conservative codes and standards." *Firstenergy*, 58 N.R.C. at 160.

Utah and PFS often disagreed over which input to use. Time after time, NRC selected the less safe approach. For example, the Board:

- allowed PFS to fit its data points into a smooth curve rather than treating each event in the data pool as an individual event. "This increase alone would bring the accidental F-16 crash probability to slightly above 1×10^{-6} per year, hence failing the 10^{-6} per year safety standard." JA801 (Lam, J., dissenting);
- used data from all F-16 crashes rather than from the higher-speed crashes that would – based on documented speeds from historical crashes – be likely to take place at the ISFSI. If the "documented impact speeds alone were used . . . the proposed PFS facility would immediately fail the 10^{-6} per year safety standard." JA804 (Lam, J. dissenting). And even PFS agreed that accidents that "involved pilot ejection at very low altitude and low speed" – which the Board included in calculating expected crash speeds – "are unlikely to occur in Skull Valley" and "including them . . . could overestimate the likelihood of low speed crash impacts." JA3775; *see generally* JA1896-98;
- concluded that there was zero risk from a number of possible accident scenarios, including a vertical strike into the top of a cask system or from a plane that struck the top of the cask system and maintained enough momentum to crash into another overpack. JA907-10;

- used PFS's "coupon test," even though, if it had used the DOE Standard, "the proposed PFS facility would immediately fail the 10^{-6} per year safety standard." JA804 (Lam, J., dissenting).

These concerns led Judge Lam to conclude that PFS's analysis of the risk was "fundamentally undermined by large inherent uncertainties and narrow safety margins." JA805 (Lam, J., dissenting). He therefore wrote that PFS's calculations "should not be relied upon to demonstrate the safety of the proposed site." *Id.*

In addition to these examples from the second hearing, the Board used many non-conservative inputs earlier in the case. For example, the Board:

- chose the lowest 10-year average crash rate in the 27-year history of F-16s (which covered the period from 1989-1998), and made no adjustment for an increase in the rate toward the end of that 10-year period. JA369-70; JA1639. Utah's proposed rate included all available F-16 crash data. JA369-70. It was "some 50% higher than the rate put forward by the Applicant," JA370, and this change alone would have increased the eventual conclusion that there was a 0.86×10^{-6} probability of canister perforation beyond the Board's credibility threshold;
- assumed that the number of F-16 flights would remain constant even though the number of flights increased more than 50% between 1998 and 2000,

JA376, and even though "[i]t is difficult to anticipate changes in the level of military training in the UTTR and MOAs." JA400. Utah proposed that the Board assume 10,410 annual flights, but the Board rejected this figure. JA376; JA449. The Board's calculation, however, provides no room for the number of flights to increase. This approach conflicts with past NRC custom of assuming a conservative estimate of flight volume. *See Consumers Power Co.*, 20 N.R.C. 601, 648 (1984) (assuming 1500 flights/year as conservative input although current level was 99/year);

- assumed that the F-16 would remain the fighter jet of choice around Skull Valley even though Hill Air Force Base is moving toward using the heavier F-35 Lightning II Join Strike Fighter. *See* http://www.hilltoptimes.com/story.asp?edition=269&storyid=7307. The heavier F-36 is likely to cause more damage and might have a higher crash rate than F-16s. *Cf.* JA369 (discussing how crash rates are highest at beginning and end of an aircraft's service period).

In sum, only an aggressive, non-conservative approach to PFS's analysis allowed NRC to conclude that PFS's cask systems satisfied the design basis standard. The Board recognized as much: "[E]ven those of us in the majority recognize that the F-16 accidental crash challenge presents a close case, in which the demonstrated

margins are, by our lights, narrow." JA791 (quoted in JA915); *see also* JA796 ("The outcome is a close one, as evidenced by our rationale and by our split vote."); JA771 ("no case has been heard before a Licensing Board or the Commission wherein the probability was close to the designated threshold – because, we speculate, sites for which the probability was seen to be close were rejected by the applicants *a priori*").

Nevertheless, the Board claimed that its calculations were conservative because it used Utah's proposed inputs on a handful of issues. JA3917-19. On review, the Commission held that the Board had not committed "clear error" on any individual issue, but failed to respond to Utah's argument that NRC was required to use conservative inputs *on balance*. JA904-11.

III. NRC MISAPPLIED ITS OWN STANDARD WHEN IT DENIED UTAH THE OPPORTUNITY TO LITIGATE THE ENVIRONMENTAL IMPACT OF DOE'S INTENTION NOT TO ACCEPT SNF STORED AT PFS'S FACILITY.

When Gary Lanthrum, the DOE official responsible for developing the transportation infrastructure for SNF shipments to Yucca Mountain, stated that DOE would not accept fuel in sealed canisters (such as PFS would use) and was not obligated to collect SNF from PFS's facility, that statement contradicted several assumptions that led NRC to approve PFS's application. First, the "FEIS assumed for its transportation impacts analysis that the fuel would be shipped [directly] to

Yucca Mountain after leaving PFS['s]" facility rather than traveling back across the country for repackaging. JA868. Also, the FEIS assumed that PFS "plans to completely seal spent fuel inside a canister that is never opened from the time it leaves the power plant until it is deposited into a permanent repository." JA819 (emphasis omitted).

Contention Utah UU alleged that these assumption are erroneous because PFS's canisters will need to be repackaged before the Yucca Mountain repository will accept them; the canisters will zigzag across the country to repackaging facilities; and DOE might not even collect SNF from PFS's facility. *Id.* Based on Lanthrum's statement, Utah moved to reopen the record so that NRC would revise the FEIS.

To reopen the record, a party must meet several requirements, *see generally* JA822-23, but the Board and Commission treated as dispositive the "inadequate factual support" for Utah's contention. JA830. The Board stated the applicable test "when confronted with a motion to reopen the record which . . . seeks a further evidentiary hearing on new issues not previously considered": "the moving papers must be strong enough, in the light of any opposing filings, to avoid summary disposition"; "the standards governing contention admissibility and those governing summary disposition can, and should, be conflated." JA822-23 (internal quotation marks omitted and emphasis deleted). In other words, the relevant question for this

Court is whether Utah's claim could withstand summary disposition under the familiar standards that apply to summary judgment motions.

"For purposes of ruling on the pending request," the Board took "the State's averments as true, and presume[d] the accuracy of [Utah's] rendition of what [its witness] heard the DOE official say." JA823-24. That statement also comported with Lanthrum's public statements. *See* JA874; *see also Goshutes' Waste Plan Hits a Snag*, Salt Lake Tribune (Oct. 15, 2004) (JA1786-88) (reporting that Lanthrum told the newspaper the PFS plan is "unacceptable," that DOE "has no obligation to take waste from PFS" and that, "because the waste will be shipped and accepted at PFS in welded casks, the DOE won't take it at Yucca Mountain").

The Board observed, "there are two different perspectives from which to view [Lanthrum's] statement." JA824. In one interpretation – PFS's view – DOE would eventually adapt its policies to accept PFS's casks, but had not yet implemented such rules. *Id.* In the second interpretation – Utah's view – DOE indicated that PFS's pre-sealed canisters were, and would remain, unacceptable for reposit at Yucca Mountain. *Id.* The Board recognized that, if Utah's understanding was correct, the consequences were serious enough to evaluate the issue because they might lead to a "dysfunctional spent fuel management system." JA830; *see also* JA820 ("[I]f the oral statement which launched the new contention were to have signified what the State thought it

did upon hearing it, then the new contention might well have required further inquiry."); *accord* 69 Fed. Reg. 71,082, 71,084 (2004) (in addition to reopening canisters, "[t]wo shipments would result in more radiological consequences than a single shipment"). The Board added, "it is perfectly understandable that State of Utah officials would be alarmed . . . upon hearing from a DOE official a statement that they thought undercut . . . the plan that . . . the spent fuel temporarily stored at PFS would eventually move *directly* to the permanent repository." JA827 (emphasis added).

However, the Board found PFS's interpretation of the statement more persuasive: "[T]he *facts* as they appear at this juncture do not provide a basis to which that theory can be tied." JA827-28 (emphasis added). The Board added that Lanthrum's statement, "*when measured against key 'official' DOE documents brought to our attention that portray the matter differently, is insufficient to launch a new adjudicatory inquiry at this juncture.*" JA820 (emphasis added). The Board weighed Utah's evidence against PFS's evidence and resolved the perceived ambiguities in Lanthrum's statement in PFS's favor, finding "*[i]n light of the positions taken, and the countering documents submitted, by the Applicant*, nothing in the State's newly proffered contention survives that would support our requiring an inquiry into whether DOE now intends" to refuse to collect or accept PFS's SNF. JA828 (emphasis added). The Board added, "*[i]t is on that understanding – alone*

– *that we dismiss the State's contention.*" *Id.* (emphasis in original). The Board's decision was erroneous for numerous reasons.

First, it was legal error for the Board to resolve a key factual dispute under the summary disposition standard. The standards that govern summary disposition derive from the standards that govern summary judgment under Fed. R. Civ. P. 56, as the Board itself noted in the PFS licensing process. JA278. "It is, of course, inappropriate for a district court to find *disputed* facts in the context of a summary judgment motion." *Formula* v. *Heckler*, 779 F.2d 743, 745 n.2 (D.C. Cir. 1985) (emphasis in original); *see also George* v. *Leavitt*, 407 F.3d 405, 410 (D.C. Cir. 2005). Thus, the Board's evidentiary determination of "what the documents appear to establish," JA829, resolved a factual dispute that should have been resolved at a hearing.

As the Board observed in other phases of the PFS license application process, "[s]ummary disposition is a useful tool for resolving in short order those contentions that, *after discovery is completed*, are shown by undisputed facts to have nothing to commend them . . . . [*b*]*ut it is not a tool for trying to convince a Licensing Board to decide, on written submissions, genuine issues of material fact that warrant resolution at a hearing.*" JA257 (emphasis altered). The Board violated its own standard, and did so without allowing Utah to conduct any discovery. Given that

other DOE officials later confirmed Mr. Lanthrum's statement,[7] discovery would have been illuminating.

Second, Utah was entitled to have its evidence viewed in the most favorable light. The record and affidavits supporting and opposing a summary disposition motion must be viewed in the "light most favorable to the party opposing" the motion. *Tennessee Valley Auth.*, 55 N.R.C. 236, 239 (2002); *accord Advanced Med. Sys.*, 38 N.R.C. 98, 102 (1993). Because the Board admitted that there were two reasonable ways to view Lanthrum's statement, the Board was obligated to presume that Utah's interpretation was the correct one.

Third, and relatedly, the Board improperly failed to apply the summary disposition standard's rules on inferences. *See* JA262 (citing "requirement that all reasonable inferences must be drawn in the State's [*i.e.*, non-movant's] favor"). NRC case law establishes that a summary disposition opponent is entitled to the favorable inferences that may be drawn from any evidence submitted. *See, e.g.*, *Sequoyah Fuels Corp.*, 39 N.R.C. 359, 361 (1994); *Duke Cogema*, 61 N.R.C. 71, 79 (2005). A finder of fact could reasonably conclude from Lanthrum's statement that DOE would never

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[7] *See, e.g.*, *Yucca Won't Take Waste from Utah*, Salt Lake Tribune (May 4, 2005) ("David Zabransky of the Energy Department's Office of Civilian Radioactive Waste Management . . . said federal contract requirements forbid acceptance of spent nuclear fuel welded into any type of canister.").

accept PFS's canisters at Yucca Mountain. *See Arizona Public Serv. Co.*, 33 N.R.C. 397, 402 (1991) ("a pleading opposing summary judgment must be indulgently treated with inferences of fact drawn in the pleader's favor"). Instead of assessing whether a finder of fact could reasonably have found for Utah, the Board weighed the evidence.

Fourth, the Board reached a disputed factual conclusion when it stated that "the management authority of the DOE official upon whose statement the State would rely does not appear to be in the specific area of which he spoke." JA828 (emphasis omitted). The Commission compounded the problem when, without record support, it referred to Lanthrum's statements as "apparently off-the-cuff." JA877. Any disputes about Lanthrum's responsibilities and the gravity of his remarks should have been resolved at a hearing, not through summary disposition. *See Connell Rice & Sugar Co.* v. *United States*, 837 F.2d 1068, 1070 (Fed. Cir. 1988). Moreover, it is simply not true that Lanthrum – whom DOE sent to testify before the United States Nuclear Waste Technical Review Board Transportation Planning Panel – lacks management authority over transportation of SNF to Yucca Mountain, and it is dubious

to say that he made "off-the-cuff" remarks about such an important subject during an official trip to Utah to testify about DOE policies.[8]

Finally, the Board recognized that severe health and safety consequences could arise from extra shipments of SNF across the country and from repackaging SNF. JA827. "[W]here significant health and safety and environmental issues may be involved," the Board can "only grant summary disposition if it is convinced that the public health and safety and environment will be satisfactorily protected." *Gulf States Util. Co.*, 41 N.R.C. 460, 466 (1995). Yet the Board assumed someone else would address the issue. JA830 ("We rest with having called the matter to the Commission's attention.").

Subsequent events made the situation even more uncertain and showed how wrong it was for the Board and the Commission to act without assurance that DOE will accept containers from PFS. In October 2005, DOE officially discarded its previous policy by announcing that it would accept only SNF packaged at reactor sites in a DOE standardized canister, whereas its previous plan had been to accept SNF in a variety of canisters and engage in repetitive handling and repackaging of

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[8] Lanthrum was the first witness (and only DOE witness) at the two-day NWTRB hearing on October 13-14, 2004, and his testimony occupies more than 100 pages of the transcript of the first day of the hearing. *See* http://www.nwtrb.gov/meetings/oct%202004/041013.doc at 11-88, 147-171, 213-223.

bare fuel at the Yucca Mountain repository. *See* DOE Press Release (JA1959) ("Prior to today, plans called for shipping spent fuel assemblies in various types of canisters to the repository where workers would handle 70,000 tons of spent fuel up to four separate times per fuel assembly."). Based on what DOE's own press release called a "new path forward," Utah moved to reopen the record in light of this further evidence that there is huge uncertainty, not reflected in the FEIS, about the manner in which fuel will move from the ISFSI to Yucca Mountain and whether it will need to be repackaged.

The Commission denied Utah's motion notwithstanding the new evidence. Although Utah's fundamental point was the *un*certainty – unaccounted for in the FEIS – about movement of SNF from PFS to Yucca Mountain, NRC responded as if Utah would have to prove *certainty* to prevail: "Utah does not claim that the HI-STORM canister PFS plans to use is *absolutely incompatible* with plans for ultimate disposal at the proposed Yucca Mountain repository." JA989 (emphasis added). NRC also wrote, "Utah's new information would not be likely to change the outcome of the proceeding or affect the licensing decision in a material way." JA987. But it is the *Board* that acts as the preliminary finder of fact, and the Commission neither discussed the Board's preliminary factual determination nor remanded the case to the

Board. If anything, the Commission contradicted the Board's factual determinations, which included:

- "Given the seemingly universal recognition that *extra or unnecessary* handling and shipping of spent fuel should be avoided if possible, we think NEPA requires more." JA830.
- "[I]f the oral statement which launched the new contention were to have signified what the State thought it did upon hearing it, then the new contention might well have required further inquiry." JA820.
- "If the State's interpretation of the DOE statement were correct, however, we might well reach the opposite result." JA824.
- "[A] more integrated NEPA analysis might well be demanded *if* the State's assertion of a new DOE position against acceptance of PFS-stored fuel at Yucca Mountain carried the day." JA825.
- Environmental effects included "an unnecessary second such shipment [and] a third one as well" and "a major operational step, before that third shipment, of unsealing the welded canister to 're-package' the spent fuel." JA826 (emphasis omitted).[9]

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[9] The Commission, unlike the Board, ignored repackaging altogether.

Nor, when the Commission concluded that the environmental effects were unlikely to be serious, was it reaching a decision on a full record. As the Board had noted in rejecting Contention Utah UU, "no evidentiary record was ever developed, in an adversary context, to test the Applicant's and Staff's assumptions about the minimal impact of cross-country transportation." JA826. The Board, which is responsible for building a record, conceded, "We would thus be at some disadvantage in any effort to evaluate the merits of these arguments," *id.*, yet the Commission nevertheless concluded that requiring SNF to take extra trips across the country to be repackaged was irrelevant to the FEIS.

This case should be remanded so that NRC and its Board can assess properly how DOE's new position will affect the environmental effects of re-shipping and repackaging SNF from PFS's facility.

IV. NRC VIOLATED NEPA BY FAILING TO ASSESS THE ENVIRONMENTAL IMPACT OF A TERRORIST ATTACK.

The FEIS for PFS's facility failed to assess the risk of a terrorist attack. In Contention Utah RR, Utah argued that NEPA required NRC to evaluate this scenario. NEPA, 42 U.S.C. § 4332 *et seq.*, requires that agencies "fully assess . . . the possible environmental consequences of activities which have the potential for disturbing the environment." *Grand Canyon Trust* v. *FAA*, 290 F.3d 339, 342 (D.C. Cir. 2002).

The Board rejected Utah's argument but acknowledged that the question is "a close one." JA246. Its decision also conflicted directly with the holding of another licensing board. *See Duke Cogema*, 54 N.R.C. 403 (2001). The Board therefore referred the issue to the Commission.

The Commission affirmed for four reasons. It held that (1) a terrorist attack is "too far removed from the natural or expected consequences of agency action to require a study under NEPA," JA331, (2) because the risk of an attack cannot be determined, the analysis is likely to be meaningless, JA332, (3) NEPA does not require a "worst-case" analysis, JA333, and (4) NEPA's public process is an inappropriate forum for sensitive security issues. JA335.

As the Ninth Circuit has determined, *Diablo*, 449 F.3d at 1029-35, NRC's four reasons for refusing to assess the risk of a terrorist attack are legally incorrect. An agency must assess events that are reasonably foreseeable; the potentiality does not have to be likely. *See City of Grapevine* v. *DOT*, 17 F.3d 1502, 1503-04 (D.C. Cir. 1994) (requiring agencies to "describ[e] the reasonably foreseeable environmental impact both of the proposed federal action and of any feasible alternative(s) to the proposed federal action" and to take a "'hard look' at the environmental consequences").

NRC's claim that the possibility of a terrorist attack is too speculative and too removed from the consequences of agency action contradicts NRC's fourth argument, which boils down to a concern that EISs would give terrorists too much information if they described the environmental effects of a terrorist attack. Either there is only a speculative risk (and it matters not whether EISs disclose the effects of a terrorist attack) or there a real risk (and NRC's argument that the risk of a terrorist attack is speculative is belied by NRC's own security concerns). Moreover, here as in *Diablo*, but to a much larger extent because PFS's proposed ISFSI would serve *many* reactors, "licensing the Storage Installation would lead to or increase the risk of a terrorist attack because . . . the Storage Installation itself would be a primary target for a terrorist attack." 449 F.3d at 1030.

In support of its position, NRC also argued that "Terrorism . . . comes in innumerable forms and at unexpected times and places [and] is decidedly not predictable." JA330. But the same is true for earthquakes (JA2203), wildfires (JA2333), flooding (JA2347), and rail accidents (JA2376), all of which the FEIS assessed. Other agencies have assessed terrorism in spite of the "speculative" nature of the threat it presents. For example, the EIS for Yucca Mountain evaluated the issue. *See, e.g.*, JA1407. And NRC has long required nuclear plants to develop security plans to protect against a "design basis threat" for radiological sabotage. *See*

GAO Report, *Nuclear Regulatory Commission: Oversight of Security at Commercial Nuclear Power Plants Needs to be Strengthened*, GAO-03-0752 at 6 (2003) ("Since 1977, NRC has required applicants' safety plans to assess "the number of attackers, their training, and [their] weapons and tactics."). Thus, even before September 11, 2001, NRC did not regard terrorist attacks as too "speculative" to assess.

Second, NRC argued that the risk of terrorism cannot be quantified, and thus meaningful evaluation cannot be performed. But that conclusion contradicts NRC's own regulations, which provide, "[t]o the extent that there are important qualitative considerations or factors that cannot be quantified, these considerations or factors will be discussed in qualitative terms." 10 C.F.R. § 51.71(d); *see also Diablo*, 449 F.3d at 1031 ("The numeric probability of a specific attack is not required in order to assess likely modes of attack, weapons, and vulnerabilities of a facility, and the possible impact of each of these on the physical environment . . . . [T]his is precisely what the NRC already analyzes in different contexts.").

While the risk of terrorism, of course, cannot be measured precisely, there are metrics that provide a reasonable approximation of the risk. For example, in the context of assessing the probability of B-52 jets crashing into a nuclear facility, NRC sought "actuarial computation of risk." *Consumers Power Co.*, 15 N.R.C. 299, 329 (1982). In PFS's case, PFS's insurance rates allow NRC to assess meaningful

statistics from the actuarial data: PFS's insurance payment buys $70,000,000 of coverage. *See* JA3424 ([redacted]).

Additionally, even before September 11, the Board quantified the risk of terrorist activity. *See Commonwealth Edison Co.*, 6 A.E.C. 861, 891 ¶ 7.20 (1973) ("frequency of hijacking has been calculated as 1 x $10^{[-]6}$ per air carrier movement"), *rev'd in part on other grounds*, 7 A.E.C. 240 (1974); *see also Diablo*, 449 F.3d at 1032 & n.9 (discussing other methods to quantify risk of terrorist attack).

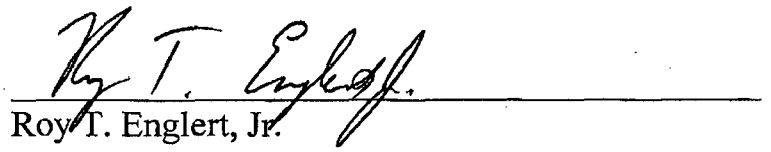
Third, NRC argues that NEPA does not require a "worst-case" analysis. But no one is saying that it does; NRC's argument is "a non sequitur" because "the agency errs in equating an assessment of the environmental impact of terrorist attack with a demand for a worst-case analysis." *Id.* at 1032. According to NRC, "[m]aking the various assumptions required by petitioners' scenario requires the NRC to venture into the realm of 'pure conjecture.'" *Id.* at 1033 (quoting 40 C.F.R. § 1502.22(b)(4)). But Utah is not asking that NRC apply Murphy's Law to a terrorist attack to assess the worst imaginable outcome. It merely wants "an analysis of the range of environmental impacts *likely* to result in the event of a terrorist attack" on the ISFSI. *Id.* at 1034 (emphasis added).

Finally, NRC argues that NEPA's public process is not an appropriate forum for sensitive security issues such as terrorism. This is wrong as a matter of law. *See Weinberger* v. *Catholic Action of Hawaii*, 454 U.S. 139, 145 (1981) (holding that Navy was required to perform NEPA review and factor its results into decisionmaking even where information's sensitivity justified withholding sensitive material from public disclosure). While security considerations may permit or require modification of some of the NEPA procedures, *Weinberger* refutes NRC's argument that security concerns negate NEPA requirements. *See also Concerned About Trident* v. *Rumsfeld*, 555 F.2d 817, 823 (D.C. Cir. 1977) (requiring agency to "weigh[] the environmental costs . . . even though the project has serious national security implications"). NRC's "arguments explain why a *Weinberger*-style limited proceeding might be appropriate, but cannot support the NRC's conclusion that NEPA does not apply." *Diablo*, 449 F.3d at 1034-35.

CONCLUSION

The Court should reverse, remand, and/or vacate the decisions of the NRC and its Licensing Board discussed in this brief. Alternatively, NRC's challenged orders and its issuance of a license to PFS should be vacated as moot.

Respectfully submitted,



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March 15, 2007

CERTIFICATE OF COMPLIANCE

I certify that this brief complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B): It is proportionally spaced, has a typeface of 11 points or more, and contains 13,332 words, excluding the parts of the brief exempted by Fed. R. App. P 32(a)(7)(B)(iii) and Circuit Rule 32(a)(2).

March 15, 2007

Noah A. Messing

STATUTORY AND REGULATORY ADDENDUM

LEXSTAT 5 U.S.C. 706

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*** CURRENT THROUGH P.L. 109-346, APPROVED 10/13/2006 ***

TITLE 5. GOVERNMENT ORGANIZATION AND EMPLOYEES
PART I. THE AGENCIES GENERALLY
CHAPTER 7. JUDICIAL REVIEW

Go to Code Archive Directory for this Jurisdiction

5 USCS § 706

§ 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall--

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be--

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title *[5 USCS § § 556* and 557] or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.

LEXSTAT 42 U.S.C. 4332

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*** CURRENT THROUGH P.L. 109-346, APPROVED 10/13/2006 ***

TITLE 42. THE PUBLIC HEALTH AND WELFARE
CHAPTER 55. NATIONAL ENVIRONMENTAL POLICY
POLICIES AND GOALS

Go to Code Archive Directory for this Jurisdiction

42 USCS § 4332

THE CASE NOTES SEGMENT OF THIS DOCUMENT HAS BEEN SPLIT INTO 2 DOCUMENTS.
THIS IS PART 1.
USE THE BROWSE FEATURE TO REVIEW THE OTHER PART(S).

§ 4332. Cooperation of agencies; reports; availability of information; recommendations; international and national coordination of efforts

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act [*42 USCS § § 4321* et seq.], and (2) all agencies of the Federal Government shall--

(A) 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 decision-making which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act [*42 USCS § § 4341* et seq.], which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other 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.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by *section 552 of title 5, United States Code*, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

(ii) the responsible Federal official furnishes guidance and participates in such preparation,

(iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and

(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act [*42 USCS § § 4321* et seq.]; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.[;]

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and longrange character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by title II of this Act [*42 USCS § § 4341* et seq.].

Amendments:

1975. Act Aug. 9, 1975, redesignated subparas. (D), (E), (F), (G), and (H) as subparas. (E), (F), (G), (H), and (I), respectively, and added new subpara. (D).

Other provisions:

Certain commercial space launch activities not considered major Federal action. Act Dec. 29, 1995, P.L. 104-88, Title IV, § 401, 109 Stat. 955 (effective Jan. 1, 1996, as provided by § 2 of such Act, which appears as *49 USCS § 701* note), provides: "The licensing of a launch vehicle or launch site operator (including any amendment, extension, or renewal of the license) under chapter 701 of *title 49, United States Code [49* USCS § § 70101 et seq.], shall not be considered a major Federal action for purposes of section 102(C) of the National Environmental Policy Act of 1969 (*42 U.S.C. 4332(C)*) if--

"(1) the Department of the Army has issued a permit for the activity; and

"(2) the Army Corps of Engineers has found that the activity has no significant impact.".

Facilitation of cooperative conservation. Ex. Or. No. 13352 of August 26, 2004, *69 Fed. Reg. 52989,* provides:

"By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

"Section 1. Purpose. The purpose of this order is to ensure that the Departments of the Interior, Agriculture, Commerce, and Defense and the Environmental Protection Agency implement laws relating to the environment and natural resources in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in Federal decisionmaking, in accordance with their respective agency missions, policies, and regulations.

"Sec. 2. Definition. As used in this order, the term 'cooperative conservation' means actions that relate to use, enhancement, and enjoyment of natural resources, protection of the environment, or both, and that involve collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals.

"Sec. 3. Federal Activities. To carry out the purpose of this order, the Secretaries of the Interior, Agriculture, Commerce, and Defense and the Administrator of the Environmental Protection Agency shall, to the extent permitted by law and subject to the availability of appropriations and in coordination with each other as appropriate:

"(a) carry out the programs, projects, and activities of the agency that they respectively head that implement laws relating to the environment and natural resources in a manner that:

"(i) facilitates cooperative conservation;

"(ii) takes appropriate account of and respects the interests of persons with ownership or other legally recognized interests in land and other natural resources;

"(iii) properly accommodates local participation in Federal decisionmaking; and

"(iv) provides that the programs, projects, and activities are consistent with protecting public health and safety;

"(b) report annually to the Chairman of the Council on Environmental Quality on actions taken to implement this order; and

"(c) provide funding to the Office of Environmental Quality Management Fund (*42 U.S.C. 4375*) for the Conference for which section 4 of this order provides.

"Sec. 4. White House Conference on Cooperative Conservation. The Chairman of the Council on Environmental Quality shall, to the extent permitted by law and subject to the availability of appropriations:

"(a) convene not later than 1 year after the date of this order, and thereafter at such times as the Chairman deems appropriate, a White House Conference on Cooperative Conservation (Conference) to facilitate the exchange of information and advice relating to (i) cooperative conservation and (ii) means for achievement of the purpose of this order; and

"(b) ensure that the Conference obtains information in a manner that seeks from Conference participants their individual advice and does not involve collective judgment or consensus advice or deliberation.

"Sec. 5. General Provision. This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, instrumentalities or entities, its officers, employees or agents, or any other person.".

1 of 17 DOCUMENTS

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TITLE 10 -- ENERGY
REVISED AS OF JANUARY 1, 2004
CHAPTER I -- NUCLEAR REGULATORY COMMISSION
PART 2 -- RULES OF PRACTICE FOR DOMESTIC LICENSING PROCEEDINGS AND ISSUANCE OF ORDERS
SUBPART G -- RULES OF GENERAL APPLICABILITY
MOTIONS

10 CFR 2.734

§ 2.734 Motions to reopen.

(a) A motion to reopen a closed record to consider additional evidence will not be granted unless the following criteria are satisfied:

(1) The motion must be timely, except that an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented.

(2) The motion must address a significant safety or environmental issue.

(3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.

(b) The motion must be accompanied by one or more affidavits which set forth the factual and/or technical bases for the movant's claim that the criteria of paragraph (a) of this section have been satisfied. Affidavits must be given by competent individuals with knowledge of the facts alleged, or by experts in the disciplines appropriate to the issues raised. Evidence contained in affidavits must meet the admissibility standards set forth in § 2.743(c). Each of the criteria must be separately addressed, with a specific explanation of why it has been met. Where multiple allegations are involved, the movant must identify with particularity each issue it seeks to litigate and specify the factual and/or technical bases which it believes support the claim that this issue meets the criteria in paragraph (a) of this section.

(c) A motion predicated in whole or in part on the allegations of a confidential informant must identify to the presiding officer the source of the allegations and must request the issuance of an appropriate protective order.

(d) A motion to reopen which relates to a contention not previously in controversy among the parties must also satisfy the requirements for nontimely contentions in § 2.714(a)(1) (i) through (v).

LEXSTAT 10 C.F.R. 51.71

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*** THIS SECTION IS CURRENT THROUGH THE NOVEMBER 2, 2006 ISSUE OF ***
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TITLE 10 -- ENERGY
CHAPTER I -- NUCLEAR REGULATORY COMMISSION
PART 51 -- ENVIRONMENTAL PROTECTION REGULATIONS FOR DOMESTIC LICENSING AND RELATED REGULATORY FUNCTIONS
SUBPART A -- NATIONAL ENVIRONMENTAL POLICY ACT -- REGULATIONS IMPLEMENTING SECTION 102(2)
ENVIRONMENTAL IMPACT STATEMENTS
DRAFT ENVIRONMENTAL IMPACT STATEMENTS -- GENERAL REQUIREMENTS

Go to the CFR Archive Directory

10 CFR 51.71

§ 51.71 Draft environmental impact statement -- contents.

(a) Scope. The draft environmental impact statement will be prepared in accordance with the scope decided upon in the scoping process required by § § 51.26 and 51.29. As appropriate and to the extent required by the scope, the draft statement will address the topics in paragraphs (b), (c), (d) and (e) of this section and the matters specified in § § 51.45, 51.50, 51.51, 51.52, 51.53, 51.54, 51.61 and 51.62.

(b) Analysis of major points of view. To the extent sufficient information is available, the draft environmental impact statement will include consideration of major points of view concerning the environmental impacts of the proposed action and the alternatives, and contain an analysis of significant problems and objections raised by other Federal, State, and local agencies, by any affected Indian tribes, and by other interested persons.

(c) Status of compliance. The draft environmental impact statement will list all Federal permits, licenses, approvals, and other entitlements which must be obtained in implementing the proposed action and will describe the status of compliance with those requirements. If it is uncertain whether a Federal permit, license, approval, or other entitlement is necessary, the draft environmental impact statement will so indicate.

(d) Analysis. The draft environmental impact statement will include a preliminary analysis that considers and weighs the environmental effects of the proposed action; the environmental impacts of alternatives to the proposed action; and alternatives available for reducing or avoiding adverse environmental effects. Except for supplemental environmental impact statements for the operating license renewal stage prepared pursuant to § 51.95(c), draft environmental impact statements should also include consideration of the economic, technical, and other benefits and costs of the proposed action and alternatives and indicate what other interests and considerations of Federal policy, including factors not related to environmental quality if applicable, are relevant to the consideration of environmental effects of the proposed action identified pursuant to paragraph (a) of this section. Supplemental environmental impact statements prepared at the license renewal stage pursuant to § 51.95(c) need not discuss the economic or technical benefits and costs of either the proposed action or alternatives except insofar as such benefits and costs are either essential for a determination regarding the inclusion of an alternative in the range of alternatives considered or relevant to mitigation. In addition, the supplemental environmental impact statement prepared at the license renewal stage need not discuss other issues not related to the environmental effects of the proposed action and associated alternatives. The draft supplemental environmental impact statement for license renewal prepared pursuant to § 51.95(c) will rely on conclusions as ampli-

fied by the supporting information in the GEIS for issues designated as Category 1 in Appendix B to subpart A of this part. The draft supplemental environmental impact statement must contain an analysis of those issues identified as Category 2 in Appendix B to subpart A of this part that are open for the proposed action. The analysis for all draft environmental impact statements will, to the fullest extent practicable, quantify the various factors considered. To the extent that there are important qualitative considerations or factors that cannot be quantified, these considerations or factors will be discussed in qualitative terms. Due consideration will be given to compliance with environmental quality standards and requirements that have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection, including applicable zoning and land-use regulations and water pollution limitations or requirements promulgated or imposed pursuant to the Federal Water Pollution Control Act. The environmental impact of the proposed action will be considered in the analysis with respect to matters covered by such standards and requirements irrespective of whether a certification or license from the appropriate authority has been obtained. n3 While satisfaction of Commission standards and criteria pertaining to radiological effects will be necessary to meet the licensing requirements of the Atomic Energy Act, the analysis will, for the purposes of NEPA, consider the radiological effects of the proposed action and alternatives.

n3 Compliance with the environmental quality standards and requirements of the Federal Water Pollution Control Act (imposed by EPA or designated permitting states) is not a substitute for and does not negate the requirement for NRC to weigh all environmental effects of the proposed action, including the degradation, if any, of water quality, and to consider alternatives to the proposed action that are available for reducing adverse effects. Where an environmental assessment of aquatic impact from plant discharges is available from the permitting authority, the NRC will consider the assessment in its determination of the magnitude of environmental impacts for striking an overall cost-benefit balance at the construction permit and operating license stages, and in its determination of whether the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable at the license renewal stage. When no such assessment of aquatic impacts is available from the permitting authority, NRC will establish on its own or in conjunction with the permitting authority and other agencies having relevant expertise the magnitude of potential impacts for striking an overall cost-benefit balance for the facility at the construction permit and operating license stages, and in its determination of whether the adverse environmental impacts of license renewal are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable at the license renewal stage.

(e) Preliminary recommendation. The draft environmental impact statement normally will include a preliminary recommendation by the NRC staff respecting the proposed action. This preliminary recommendation will be based on the information and analysis described in paragraphs (a) through (d) of this section and § § 51.75, 51.76, 51.80, 51.85, and 51.95, as appropriate, and will be reached after considering the environmental effects of the proposed action and reasonable alternatives, n4 and, except for supplemental environmental impact statements for the operating license renewal stage prepared pursuant to § 51.95(c), after weighing the costs and benefits of the proposed action. In lieu of a recommendation, the NRC staff may indicate in the draft statement that two or more alternatives remain under consideration.

n4 The consideration of reasonable alternatives to a proposed action involving nuclear power reactors (e.g., alternative energy sources) is intended to assist the NRC in meeting its NEPA obligations and does not preclude any State authority from making separate determinations with respect to these alternatives and in no way preempts, displaces, or affects the authority of States or other Federal agencies to address these issues.

LEXSTAT 10 C.F.R. 72.90

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TITLE 10 -- ENERGY
CHAPTER I -- NUCLEAR REGULATORY COMMISSION
PART 72 -- LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE
SUBPART E -- SITING EVALUATION FACTORS

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10 CFR 72.90

§ 72.90 General considerations.

(a) Site characteristics that may directly affect the safety or environmental impact of the ISFSI or MRS must be investigated and assessed.

(b) Proposed sites for the ISFSI or MRS must be examined with respect to the frequency and the severity of external natural and maninduced events that could affect the safe operation of the ISFSI or MRS.

(c) Design basis external events must be determined for each combination of proposed site and proposed ISFSI or MRS design.

(d) Proposed sites with design basis external events for which adequate protection cannot be provided through ISFSI or MRS design shall be deemed unsuitable for the location of the ISFSI or MRS.

(e) Pursuant to subpart A of part 51 of this chapter for each proposed site for an ISFSI and pursuant to sections 141 or 148 of NWPA, as appropriate (*96* Stat. 2241, 101 Stat. 1330-235, *42 U.S.C. 10161,* 10168) for each proposed site for an MRS, the potential for radiological and other environmental impacts on the region must be evaluated with due consideration of the characteristics of the population, including its distribution, and of the regional environs, including its historical and esthetic values.

(f) The facility must be sited so as to avoid to the extent possible the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains.

LEXSTAT 10 C.F.R. 72.92

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TITLE 10 -- ENERGY
CHAPTER I -- NUCLEAR REGULATORY COMMISSION
PART 72 -- LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE, AND REACTOR-RELATED GREATER THAN CLASS C WASTE
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10 CFR 72.92

§ 72.92 Design basis external natural events.

(a) Natural phenomena that may exist or that can occur in the region of a proposed site must be identified and assessed according to their potential effects on the safe operation of the ISFSI or MRS. The important natural phenomena that affect the ISFSI or MRS design must be identified.

(b) Records of the occurrence and severity of those important natural phenomena must be collected for the region and evaluated for reliability, accuracy, and completeness. The applicant shall retain these records until the license is issued.

(c) Appropriate methods must be adopted for evaluating the design basis external natural events based on the characteristics of the region and the current state of knowledge about such events.

123 words

LEXSTAT 10 C.F.R. 72.94

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10 CFR 72.94

§ 72.94 Design basis external man-induced events.

(a) The region must be examined for both past and present man-made facilities and activities that might endanger the proposed ISFSI or MRS. The important potential man-induced events that affect the ISFSI or MRS design must be identified.

(b) Information concerning the potential occurrence and severity of such events must be collected and evaluated for reliability, accuracy, and completeness.

(c) Appropriate methods must be adopted for evaluating the design basis external man-induced events, based on the current state of knowledge about such events.

95 words

LEXSTAT 10 C.F.R. 72.106

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10 CFR 72.106

§ 72.106 Controlled area of an ISFSI or MRS.

(a) For each ISFSI or MRS site, a controlled area must be established.

(b) Any individual located on or beyond the nearest boundary of the controlled area may not receive from any design basis accident the more limiting of a total effective dose equivalent of 0.05 Sv (5 rem), or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 0.5 Sv (50 rem). The lens dose equivalent may not exceed 0.15 Sv (15 rem) and the shallow dose equivalent to skin or any extremity may not exceed 0.5 Sv (50 rem). The minimum distance from the spent fuel, high-level radioactive waste, or reactor-related GTCC waste handling and storage facilities to the nearest boundary of the controlled area must be at least 100 meters.

(c) The controlled area may be traversed by a highway, railroad or waterway, so long as appropriate and effective arrangements are made to control traffic and to protect public health and safety.

168 words

CERTIFICATE OF SERVICE

I hereby certify that on March 15, 2007, two copies of the sealed versions of the Final Brief For Petitioner State of Utah and Final Reply Brief For Petitioner State of Utah for Case Nos. 05-1419, 05-1420 and 06-1087 were served by first class mail upon:

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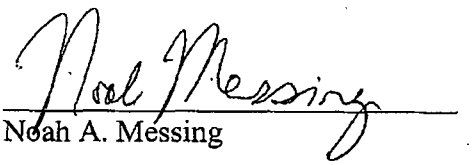

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