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Robert Willis Bishop
VICE PRESIDENT &
GENERAL COUNSEL

July 16, 2001

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Office of the Secretary
Attention: Rulemakings and Adjudications Staff
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Sir or Madam:

For reasons not clear, the NEI amicus brief that was sent to you by mail on July 13 is not the final version that we had intended to send. No substantive changes have been made, but enclosed is the version that should have been sent.

My apologies.

Sincerely,

Robert W. Bishop

Enclosure

Template = SECY-021

SECY-02



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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Commission

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)	
)	
PRIVATE FUEL STORAGE L.L.C.)	Docket No. 72-22
)	
(Private Fuel Storage Facility))	ASLBP No. 97-732-02-ISFSI

**NUCLEAR ENERGY INSTITUTE AMICUS BRIEF ON REGULATORY
STANDARD FOR AIRCRAFT CRASH HAZARDS
AT SPENT FUEL FACILITIES**

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July 16, 2001

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Commission

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STANDARDS FOR AIRCRAFT CRASH HAZARDS AT SPENT FUEL
FACILITIES**

In its Order of June 27, 2001, CLI-01-15, 53 NRC ___ (June 27, 2001), the Commission accepted referral from the Atomic Safety and Licensing Board ("Licensing Board" or "Board") of the Board's ruling on the appropriate standard for design basis accidents under 10 CFR Part 72 for independent spent fuel storage facilities. Pursuant to 10 C.F.R. § 2.715(d), the Nuclear Energy Institute ("NEI")¹ has filed a motion for leave to submit this Amicus Brief with respect to the Commission's review because of the importance of this matter as it affects the interests of the nuclear energy industry generally.

The Licensing Board correctly held that an Independent Spent Fuel Storage Installation ("ISFSI") did not have to be designed to withstand events that have a probability of occurring of less than one in a million per year (10^{-6} or 1 E-6). Private Fuel Storage Facility, L.L.C. (Independent Spent Fuel Storage Facility), LBP-01-19, 53 NRC ___, slip op. at 18-21 (May 31, 2001). By contrast, the standard proposed by the intervenor State

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory aspects of generic operation and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabricators, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

of Utah is not only unjustified for ISFSI's, it also contravenes risk principles established by the Commission and embodied in its regulatory pronouncements and Safety Goal Policy.

The adoption of the State's position would impede the development of spent fuel storage facilities and, because it is premised on an erroneous interpretation of the Commission's recently promulgated regulations for geologic repositories in 10 CFR Part 60, could impede the development the proposed Yucca Mountain facility and future geologic repositories.

Accordingly, the Commission should reject the arguments advanced by the intervenor State of Utah and affirm the Licensing Board's ruling that events with a probability of occurrence of less than one in a million per year are not credible events for which an ISFSI needs to be designed to withstand.

I. STATEMENT OF THE CASE

The Private Fuel Storage Facility ("PFSF") is an independent spent fuel storage installation proposed by Private Fuel Storage, LLC ("PFS") to be located on the Skull Valley Reservation, approximately 50 miles southwest of Salt Lake City. The PFSF would be the first away-from-reactor dry storage ISFSI to be constructed and operated in the United States.² As the first facility of its type, the PFS project will meet a critical need for the temporary storage of spent nuclear fuel pending its permanent disposal.

The question of the appropriate screening standard for design basis accidents under 10 CFR Part 72 for ISFSIs, such as the PFSF, arose in the context of a summary disposition motion filed by PFS with respect to a contention concerning "credible accidents."³ In that contention, the intervenor State of Utah had asserted that PFS had "in-

² The only other away-from-reactor ISFSI licensed in the United States is the General Electric wet storage facility at Morris, Illinois. The Morris facility has little, if any, additional storage capacity.

³ Applicant's Motion for Summary Disposition of Utah Contention K and Confederated Tribes Contention B (Dec. 30, 2000) ("PFS Motion").

adequately considered credible accidents caused by external events and facilities affecting” the PFSF, including the potential effects of aircraft crash hazards at the PFSF. LBP-01-19, slip op. at 2-5.

In its motion, PFS argued that the definition of a credible accident, *i.e.*, an accident that the PFSF must be designed to withstand, should be one with a probability of occurrence of at least 1 E-6 per year⁴. The State argued, however, for a more stringent threshold probability for aircraft crash hazards of one in ten million (1 E-7) per year. State of Utah’s Response to Applicant’s Motion for Summary Disposition on Utah Contention K/Confederated Tribes Contention B (Jan. 30, 2001) at 6-8 (“State Response”)⁵. In its May 31, 2001, decision on the PFS Motion, the Licensing Board ruled that a credible accident for an ISFSI was one whose probability was greater than one-in-a-million per year. See LBP-01-19, slip op. at 19-21. After reviewing the Part 60 statement of considerations, the Board rejected the State’s arguments concerning the lack of a site-specific analysis for the PFSF. See id. at 20-21. To the contrary, the Board concluded from its review of the Commission’s discussion in the Part 60 rulemaking regarding Part 72 facility design basis accidents that the Commission had determined that “both were covered by the 1 E-6 bounding analysis.” Id. at 20. The Board noted that the “Commission’s most pointed reference” to Part 72 facilities “was to ‘surface facilities’ at a Part 72

⁴ PFS Motion at 9-10. PFS’s argument was based on the Commission’s discussion in the statement of consideration accompanying the 1996 amendments to the regulations for geologic repositories in 10 C.F.R. Part 60. In that discussion, the Commission linked the standards for credible accidents at above-ground nuclear waste handling facilities at a geologic repository to the standards for credible accidents at 10 C.F.R. Part 72 facilities, including ISFSIs, because of their similarities. Id. In its response to the PFS Motion, the NRC Staff concurred that the threshold criterion for credible accidents for Part 72 facilities is 1 E-6 per year. NRC Staff’s Response to Applicant’s Motion for Summary Disposition of Utah Contention K and Confederated Tribes B (Jan. 30, 2001) at 7 (“Staff Response”).

⁵ The State based its claims on regulatory guidance found in NUREG-0800, Standard Review Plan for Review of Safety Analysis Reports for Nuclear Power Plants, June 1987. NUREG-0800 provides guidance regarding the threshold probability to be applied to potential accidents at nuclear power reactors. State Response at 6. The State also argued that Part 60’s one-in-a million standard was “a site-specific conclusion based on site-specific analyses of risk at the Yucca Mountain facility.” According to the State, the site specific nature of the analysis meant that the 1E-6 standard did not apply to the PFSF. Id. at 7.

monitored retrievable storage (MRS) installation that, unlike the proposed PFS interim storage facility, could include spent fuel handling and packaging operations.” Id. The Board observed, however, that whatever differences may exist between the PFSF and an MRS relative to fuel handling and packaging, “an MRS will utilize above-ground storage casks” as will the PFSF. Id. at 20-21. Thus, the Board determined that “in accordance with the Commission’s guidance in the 1996 Part 60 rulemaking,” it would “apply the 1 E-6 standard outlined therein” with respect to potential aircraft hazards for the PFSF. Id. at 21.

The Board certified its ruling to the Commission. Id. In its June 27, 2001 Order, the Commission accepted referral and requested briefing on this issue. CLI-01-15, slip op. at 2. Because of the importance of this issue, as recognized by the Licensing Board, NEI has requested leave to submit this Amicus Brief.

II. DISCUSSION

One of the major issues facing the nuclear industry today is the storage of spent nuclear fuel. Many nuclear power plants are running out of room in their spent fuel pools to store spent nuclear fuel. Of the 103 U.S. nuclear reactors, 51 will have run out of pool storage space by 2004 and 93 reactors will have run out space by 2015. Construction of additional on-site capacity is expensive and for some reactors is prohibited by legal or physical site constraints. By providing temporary storage of spent nuclear fuel pending its permanent disposal, ISFSIs like the PFSF will permit nuclear power plants to continue to operate after their on-site spent fuel storage capacities have been exhausted. The development of ISFSIs like the PFSF will facilitate the continued operation and expansion of the nation’s nuclear energy supply in accordance with the recently announced national energy policy recognizing the importance of nuclear energy in meeting our nation’s energy requirements. ISFSIs also will permit nuclear power plants that are permanently

shut down to complete their decommissioning by providing sites for temporary spent fuel storage.

As described below, there are three compelling reasons to set a probability of occurrence of at least 1 E-6 per year as the regulatory limit for determining credible design basis events for ISFSIs. First, the Commission itself has distinguished the lower risks of passive storage of spent nuclear fuel at ISFSIs from the risks associated with operating nuclear reactors. Second, the State's reliance on Staff guidance for operating nuclear power plants as the basis for a more stringent benchmark is wholly inappropriate and misplaced because it is at odds with fundamental risk principles embodied in Commission regulatory pronouncements and the Safety Goal Policy. Third, the State's position is, in essence, a challenge to Part 60, and should be rejected on that ground.

The adoption of the State's position would could effectively derail the development of spent fuel storage facilities, such as the PFSF, based on, for example, additional design features that are very costly but unnecessary. Further, because the State's position is premised on an erroneous interpretation of the Commission's recently promulgated regulations for geologic repositories in 10 CFR Part 60, its adoption could also threaten the development of the proposed Yucca Mountain facility or, indeed, any geologic repository.

A. The NRC Has Appropriately Recognized the More Limited Risk of Release Associated with an ISFSI

Because of the significantly lower potential consequences from an accident at an ISFSI, it is appropriate from a risk perspective for the Commission to apply a higher probability screening standard to fuel storage and handling facilities than to operating reactors. Therefore, the Licensing Board's ruling was correct and should be affirmed.

In the statement of considerations for the December 4, 1996 amendment to 10 C.F.R. Part 60,⁶ the Commission established a probability screening standard for Category 2 design basis events of one-in-a-million per year for geologic repositories, which include surface operations and storage areas. Category 2 design basis events are “[o]ther natural and man-induced events that are considered unlikely but sufficiently credible to warrant consideration, taking into account the potential for significant radiological impacts on public health and safety.” 10 C.F.R. § 60.2. The NRC determined that “events with probabilities of occurrence lower than 1×10^{-6} per year could be screened from further consideration due to their negligible contribution to individual risk.” 61 Fed. Reg. at 64,261.

In establishing the Part 60 standard, the Commission concluded that the design basis for above ground facilities at repositories is comparable to that for Part 72 facilities (i.e., ISFSIs) “[b]ecause operations at the repository are expected to be similar to operations at . . .” Part 72 facilities. *Id.* at 64,262. In addition, the Commission also stated that Part 60 Category 2 events were equivalent to “design basis accident[s]” under 10 C.F.R. § 72.106 and that the difference in terminology between Part 60 and Part 72 “is not intended to be one of substance.” *Id.* at 64,265. In amending the Part 60 rule, the Commission clearly stated that the risks associated with Part 60 and Part 72 facilities were different and significantly less than the risks associated with operating nuclear reactors. In short, the NRC itself has stated that “conditions are not present at a repository to generate a radioactive source term of a magnitude that, however unlikely, is potentially capable at a nuclear power plant (e.g., from a postulated loss of coolant event).” 61 Fed. Reg. at 64,266.⁷

⁶ Disposal of High-Level Radioactive Wastes in Geologic Repositories; Design Basis Events, Final Rule, 61 Fed. Reg. 64,257, 64,258 (Dec. 4, 1996).

⁷ See also Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 31 & n.1 (2000).

Thus, the Licensing Board correctly determined that it is appropriate to apply the Part 60 probability screening standard to exclude from design basis accidents under 10 C.F.R. § 72.106 (the applicable standard for ISFSIs) events less probable than one-in-a-million per year. Indeed, the statement of considerations for the proposed Part 63 rule for a repository at Yucca Mountain reiterates the Commission's view that a primary purpose of the 1996 amendment to Part 60 was "achieving greater consistency with Part 72 requirements."⁸ As such, there is no reason to apply a reactor risk standard to ISFSIs.

B. Greater Refinement in the NRC's Own Risk Analysis Supports Retaining the One-in-a-Million Screening Standard or an Even Higher Probability Standard

The current NRC Safety Goal Policy Statement with respect to operating reactors, which the Commission announced just last year, is to limit the frequency of a large early release of radioactive material resulting from a power plant accident to 1 E-5 per reactor per year.⁹ In light of this recent policy pronouncement, the proposed use of 1 E-7 probability benchmark for credible design basis events for ISFSIs (repeatedly differentiated by the Commission as having lower risks than operating reactors) clearly is inappropriate. Indeed, the Commission's recent Safety Goal Policy Statement would support a probability benchmark for ISFSIs (and geologic repositories) higher than the 1 E-6 screening standard set forth in the 1996 amendments to 10 CFR Part 60. In this respect, the Commission stated that the 1 E-6 design basis accident probability threshold "is expected to provide conservative estimates of risk" for geologic repositories and ISFSIs and that "[a] higher screening criterion could probably be justified given the magnitude of the consequences and risks" of such facilities." 61 Fed. Reg. at 64,265. The statutory basis for the

⁸ Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada, 64 Fed. Reg. 8,640, 8,652 (1999).

⁹ Modifications to the Reactor Safety Goal Policy Statement, SECY-00-77 (Mar. 30, 2000), approved by Staff Requirements Memorandum (June 27, 2000).

NRC's licensing of nuclear facilities is its obligation to protect public health and safety. Therefore, in light of the Commission's findings regarding the conservatism of the Part 60 standard, imposing a risk standard even more conservative on the PFSF would be arbitrary and capricious (i.e., it would have no rational basis), in that a stricter standard would result in no appreciable additional public health and safety benefit.

Thus, the State's attempt to impose a probability benchmark of 1E-7 should be rejected. The adoption of the State's position would impose an burden not just with respect to aircraft crash hazards at the PFSF, but could call into question design basis events for all Part 72 facilities. Such a result would impede the development of spent fuel storage facilities, such as the PFSF, without being necessary to protect public health and safety.

C. The Part 60 Screening Standard is Generic to Repositories

The State further asserts that the Part 60 1 E-6 screening standard is not applicable to the PFSF because the 1 E-6 standard "was a site-specific conclusion based on site-specific analyses of risk at the Yucca Mountain facility." State Response at 7. Thus, the State claims that the standard applicable to a particular Part 60 facility depends on an analysis of the consequences of an accident at that facility. See id. at 7-8.

To the contrary, Part 60 is a generic rule that does not require site-specific accident consequences analysis. The State's position is essentially a challenge to Part 60 itself and hence should be rejected. First, Part 60 states that it is a generic rule, applicable to any geologic repositories that might be licensed by the Department of Energy. See 10 C.F.R. § 60.1. Second, while the Commission referred to risk studies for Yucca Mountain in its statement of considerations for Part 60, it was very clear that such studies "provide perspective on the magnitude of the estimated consequences to members of the public from postulated Category 2 design basis events, and that variations in repository de-

sign or site selection would not likely vary these estimates by more than an order of magnitude.” 61 Fed. Reg. at 64,266 (emphasis added).

Adoption of the State’s position would impede the development of geologic repositories and, by implication, spent fuel storage facilities such as the PFSF as well. Since the State’s argument is premised on its erroneous interpretation of the 1996 amendments to 10 C.F.R. Part 60, the adoption of the standard advocated by the State also could negatively affect the development the proposed Yucca Mountain facility or other geologic repositories proposed in the future.

III. CONCLUSION

For the foregoing reasons, the Licensing Board’s ruling regarding the screening standard for determining credible design basis events for aircraft crash hazards at the PFSF should be affirmed.

Respectfully submitted,

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Dated: July 16, 2001

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NUCLEAR REGULATORY COMMISSION**

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CERTIFICATE OF SERVICE

I hereby certify that copies of the Nuclear Energy Institute Amicus Brief On The Regulatory Standard For Aircraft Crash Hazards At Spent Fuel Facilities were served on the persons listed below (unless otherwise noted) by e-mail with conforming copies by U.S. mail, first class, postage prepaid, this 16th day of July 2001.

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