

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:**

**09-892-HLW-CAB04
Thomas S. Moore, Chairman
Paul S. Ryerson
Richard E. Wardwell**

In the Matter of:)	December 7, 2009
)	
U.S. Department of Energy)	
)	Docket No. 63-001
(High Level Waste Repository)	
Construction Authorization Application))	
)	

**U.S. DEPARTMENT OF ENERGY BRIEF ON
CONTENTION NEV-SAFETY-161**

I. Introduction

In its May 11, 2009 “Memorandum and Order (Identifying Participants and Admitted Contentions),” Construction Authorization Boards (CABs) 01, 02 and 03 admitted for hearing Nevada Safety Contention 161 relating to the role of drip shields in ensuring safety through the use of a “multiple barrier” system.¹ The CABs identified this as a “legal” contention to be briefed.²

DOE and the State of Nevada have agreed that this contention involves the following legal issue:

¹ See *U.S. Dep’t of Energy* (High Level Waste Repository), LBP-09-06, 69 NRC __ (slip op. at 138) (May 11, 2009).

² *Id.*

Whether, under NWSA § 121(b)(1)(B) or 10 C.F.R. §§ 63.113(a) through (d) and 63.115(a) through (c), DOE is required to evaluate the absence or failure of *all* drip shields.³

CAB 04 approved this formulation of the legal issue.⁴

DOE plans to install drip shields as set forth in its License Application (LA). As required by the NWSA § 121(b)(1)(B) (42 U.S.C. § 10141(b)(1)(B)) and the NRC's implementing regulations (10 C.F.R. §§ 63.113, 63.115), DOE has designed a multiple barrier system consisting of both natural barriers and an engineered barrier system (EBS) to isolate waste and limit radiological exposure.⁵ Along with other components, DOE has incorporated drip shields into the EBS design.⁶ DOE also designated the drip shields as important to waste isolation.⁷

In addressing the identified legal issue, two cases must be distinguished: (1) the "absence" of all of the drip shields (either because of, for example, a design change or an inability to install the drip shields); and (2) the "failure" of all of the installed drip shields. Each of these cases is addressed below. In short, DOE is *not* required to evaluate the complete "absence" of the drip shields (*i.e.*, failure to install) but is required, and has in fact, evaluated the "failure" of all installed drip shields as appropriate under the regulations.

NEV-SAFETY-161 therefore must be dismissed in its entirety.

³ See U.S. Department of Energy, State of Nevada and Nuclear Energy Institute Joint Proposal Identifying Phase 1 Legal Issues for Briefing, Attachment 1 at 4 (Oct. 6, 2009) (emphasis added). Nevada's contention references a number of other regulations. DOE and Nevada agreed that, while either party is free to discuss those or other regulations in their brief, the legal issue to be decided focuses exclusively on what is required to comply with NWSA § 121(b)(1)(B) or 10 C.F.R. §§ 63.113(a) through (d) and 63.115(a) through (c).

⁴ See CAB 04, Order (Identifying Phase 1 Legal Issues for Briefing) (Oct. 23, 2009) (unpublished).

⁵ Safety Analysis Report (SAR) § 2.1. SAR references in this brief are to SAR revision 1, dated February 19, 2009.

⁶ *Id.* §§ 1.3.4.7, 2.1.1.2.

⁷ *Id.* §§ 1.3.4.7.3, 2.1.1.2 at 2.1-7.

II. Argument

A. *The Complete “Absence” (i.e., Failure to Install) All Drip Shields Need Not Be Considered in the Performance Assessment.*

As described in the LA, DOE intends to install drip shields as part of the repository’s multiple barrier design.⁸ DOE has deemed the drip shields important to waste isolation and repository performance.⁹ Hence, the installation of drip shields is a requirement imposed by the LA that DOE must follow. The NRC may not assume that DOE will violate requirements imposed by the LA.

Nevada is free to question whether DOE’s design (including installing drip shields) is up to the task of meeting Part 63’s safety and performance requirements. Indeed, Nevada has raised those specific factual questions in other contentions.¹⁰ But this proceeding is no place to question whether DOE, in good faith, will implement its commitments or meet license requirements.

The Commission addressed a similar issue in *Private Fuel Storage*.¹¹ There, the State of Utah argued that the applicant (PFS) might fail to generate sufficient revenue upon commencing operations and hence might attempt to cut operating costs by reducing the number of trained firefighting personnel, contrary to PFS’s commitments set forth in the license application.¹² The Commission rejected this argument:

[T]he NRC does not presume that a licensee will violate agency regulations wherever the opportunity arises. Therefore, we will

⁸ See, e.g., *id.* §§ 1.3.4.7, 2.1.1.2.

⁹ *Id.* §§ 1.3.4.7.3, 2.1.1.2.

¹⁰ See, e.g., Contentions NEV-SAFETY-130 (questioning whether drip shields can be designed, fabricated, and installed as planned); NEV-SAFETY-133 (questioning system for installing drip shields); NEV-SAFETY-142 to -148 (challenging design specifications and performance assessments for drip shields).

¹¹ *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-01-9, 53 NRC 232 (2001).

¹² See *id.* at 234.

neither assume that PFS will operate without sufficient financing, nor will we assume that an unexpected funding shortfall will induce PFS to ignore its responsibility to train and employ a sufficient number of firefighters. . . . If PFS ultimately receives NRC approval of its proposed facility, PFS will be expected to meet all NRC rules *and safety commitments*, subject to Commission oversight and enforcement.¹³

In the course of a rulemaking addressing the dose standard and the NRC's implementation of the EPA's performance assessment standards, Nevada suggested that the NRC prohibit DOE from relying on drip shields to demonstrate post-closure performance because, by Nevada's reckoning, there is "no real guarantee" that drip shields would be installed in the distant future.¹⁴ The NRC rejected Nevada's position. Because DOE included drip shields in its design as reflected in the LA, their installation is part of the licensing basis.¹⁵ The NRC must assume that DOE will implement the design it has proposed in the LA. If DOE were to later propose *not* installing the drip shields, "DOE would be obligated to seek specific regulatory approval in the form of a license amendment."¹⁶

Furthermore, requiring DOE to evaluate the failure to install the drip shields (which are an integral part of DOE's design) would in effect be requiring DOE to evaluate an alternative design, contrary to the regulations and the Commission's intent. In particular, in finalizing Part

¹³ *Id.* at 235 (internal citations omitted) (emphasis added); *see also Curators of the Univ. of Mo.*, CLI-95-8, 41 NRC 386, 400 (1995) (rejecting intervenor's request "to base our findings on the assumption that the University will violate an explicit and unambiguous condition of the license"). The Boards reached a similar conclusion in this proceeding with respect to another of Nevada's contentions (NEV-SAFETY-130) concerning the feasibility of DOE's plan to fabricate and install the drip shields. In that context, the Boards rejected "questionable Congressional funding" as support for NEV-SAFETY-130. *See U.S. Dep't of Energy*, LBP-09-06, slip op. at 138. Nevada's repetition of that argument with respect to NEV-SAFETY-161 deserves no further consideration.

¹⁴ *See Implementation of Dose Standard After 10,000 Years*, 74 Fed. Reg. 10,811, 10,826 (Mar. 13, 2009).

¹⁵ *Id.*

¹⁶ *Id.*

63, the NRC was asked in comments why it intended to require DOE “to evaluate alternative designs.”¹⁷ In response, the NRC *eliminated* this requirement, stating among other things:

DOE believes evaluation of alternative designs goes beyond typical licensing practice.... The Commission agrees... and has removed this requirement from the regulations. The NRC review should focus on the safety aspects of DOE’s proposed approach.... [T]he Commission no longer believes [that information regarding the evaluation of alternative designs] should be submitted with a license application....¹⁸

B. DOE Is Required and Has Considered the Failure of All Drip Shields in the Performance Assessment

The second aspect of the legal issue before the Board is whether DOE is required to consider the “failure” of all of the drip shields. There is no regulatory requirement for DOE to assume and then to analyze the complete failure of any Barrier, or Barrier Feature, within the Repository System in the absence of a finding that such a failure is within the bounds of probability or consequence that must be analyzed in the performance assessment.¹⁹ In other words, there is no legal requirement to analyze the effects of a complete failure of drip shields or any other barrier in the abstract. However, DOE was required, and did in fact, analyze complete failure of the drip shields in the context of certain circumstances (*i.e.*, under the provisions of 10 C.F.R. § 63.342), where appropriate (*i.e.*, for seismic and igneous), and included the results of those analyses in the performance assessment.

DOE considered and included Features, Events and Processes (FEPs) that could, in fact, result in the failure of all of the drip shields. In particular, DOE considered and *included* specific FEPs involving seismic scenarios that could result in failure of all of the drip shields (for

¹⁷ Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada, 66 Fed. Reg. 55,732, 55,748 (Nov. 2, 2001).

¹⁸ *Id.* at 55,748-49.

¹⁹ *See* 74 Fed. Reg. at 10,829-30 (to be codified at 10 C.F.R. § 63.342).

example by causing rockfalls)²⁰ as well as igneous scenarios,²¹ that could result in the failure of the drip shields. The legal issue does not challenge the adequacy of DOE's analyses in this regard. Thus, this aspect of the legal issue is moot.

III. Conclusion

As discussed above, DOE is not required to consider the "absence" of all of the drip shields but was required to and, has in fact, considered the "failure" of all of the drip shields as appropriate under the regulations. Accordingly, NEV-SAFETY-161 should be dismissed.

Respectfully submitted,

Signed electronically by Donald J. Silverman

Donald J. Silverman
Counsel for the U.S. Department of Energy
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Avenue, N.W.
Washington, DC 20004

James Bennett McRae
Martha S. Crosland
U.S. Department of Energy
Office of the General Counsel
1000 Independence Avenue, SW
Washington, DC 20585

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this 7th day of December 2009

²⁰ See, e.g., SAR § 2.2.1.4.1.3.2.2.

²¹ See *id.* § 2.2.1.4.1.3.2.4.