TO BE ARGUED ON SEPTEMBER 19, 2003

Case Nos. 02-1116 and 03-1058

IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF NEVADA, *et al.*,

Petitioners,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION,

Respondent.

PETITION FOR REVIEW FROM FINAL DECISIONS AND ACTIONS OF UNITED STATES NUCLEAR REGULATORY COMMISSION

PETITIONERS' FINAL REPLY BRIEF

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GLOSSARY

Academy – National Academy of Sciences

AEA – Atomic Energy Act

DOE – United States Department of Energy

EIS – Environmental Impact Statement

EnPA – Energy Policy Act of 1992

EPA – Environmental Protection Agency

ERA – Energy Reorganization Act of 1974

Int.Br. – Brief of Intervenor/Amicus Nuclear Energy Institute, Inc.

JA – Joint Appendix

NEI – Nuclear Energy Institute, Inc.

NEPA – National Environmental Policy Act

NRC – United States Nuclear Regulatory Commission

NWPA – Nuclear Waste Policy Act of 1982, codified at 42 U.S.C. §§10101-10270. Citations to the NWPA in this brief are to the Public Law section rather than to the United States Code section. A copy of the NWPA, as amended, with cross-references to the Code sections (*e.g.*, NWPA §113 is codified at 42 U.S.C. §10133; NWPA §114 is codified at 42 U.S.C. §10134), is included in the statutory / regulatory appendix filed with Petitioners' Opening Brief).

Part 60 – 10 C.F.R. Part 60

Part 63 – 10 C.F.R. Part 63

Pet.Br. – Petitioners' Opening Brief

Resp.Br. – Brief for the Federal Respondents

SuppApp – Supplemental Appendix

Yucca – Yucca Mountain, Nevada

SUMMARY OF ARGUMENT

Petitioners (or "Nevada") in this consolidated case challenge rules for licensing the high-level radioactive waste repository at Yucca Mountain, Nevada ("Yucca") issued by the Nuclear Regulatory Commission ("NRC") at 10 C.F.R. Part 63 (No. 02-1116) and NRC's denial of Nevada's subsequent petition to amend those rules (No. 03-1058).

Respondents' view that Nevada is not entitled to judicial review under the Nuclear Waste Policy Act ("NWPA") is premised on the dubious proposition that NRC did not issue Part 63 "under" the NWPA, even though that is precisely what Congress twice required, and even though Part 63 cites the NWPA as authority for that rule. Respondents' argument that Nevada failed to exhaust administrative remedies also collapses, since Nevada's arguments were timely presented to NRC.

On the merits, Respondents concede three of Nevada's arguments, but contest three others. Nevada argued Part 63 violates the NWPA in permitting licensing of Yucca notwithstanding that its geologic barrier is not primary in retaining wastes. NRC's response eviscerates several NWPA provisions and reduces repository licensing to a mere certification of waste packages. Nevada also argued Part 63 violates the NWPA, and was arbitrary, in failing to require independently efficacious "multiple barriers." NRC's response abandons past practices, nullifies the statutory purpose of multiple barriers, and distorts findings of the National Acad-

emy of Sciences ("Academy"), on which NRC relies. Finally, Nevada challenged Part 63's failure to protect people living more than 10,000 years from now, when Yucca exposures would be highest. Respondents have no reasonable response to the Academy's conclusion that NRC's 10,000-year truncation has "no scientific basis" and cannot be used to support an NRC repository safety finding.

ARGUMENT

I. STANDARD OF REVIEW

NRC argues its interpretations are entitled to deference under *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837 (1984). Resp.Br. 17. However, even if (contrary to Nevada's position) Congress had not spoken to the precise issues here, deference would not apply because multiple agencies interpret the relevant statutes (the Department of Energy ("DOE") and NRC implement the NWPA, and NRC and the Environmental Protection Agency ("EPA") implement Energy Policy Act ("EnPA") Section 801). *Rapaport v. Dep't of Treasury*, 59 F.3d 212, 216-17 (D.C. Cir. 1995).

NRC argues for "extreme deference" to its technical judgments. Resp.Br. 17. But in cases like this where "Congress has delegated to an [agency] the critical task of assessing the public health and the power to make decisions of national import in which individuals' lives and welfare hang in the balance, that agency has the heaviest of obligations to explain and expose every step of its reasoning [and] 'co-

gently explain why [it] has exercised [its] discretion in a given manner.'" *American Lung Ass'n v. EPA*, 134 F.3d 388, 392 (D.C. Cir. 1998) (citation omitted). NRC failed in that obligation.

II. NEVADA'S CHALLENGE WAS TIMELY

Respondents argue Petitioners' challenge in No. 02-1116 was untimely. Since Petitioners filed within the 180-day deadline of NWPA Section 119(c), Respondents' argument depends on the proposition that Section 119 does not apply. That argument fails.[1]

1. NWPA Section 119 provides "for review of any final decision or action of the ... Commission under this subtitle [subtitle A of Title I, comprising Sections 111-125]." It is undisputed that the NWPA required NRC to promulgate regulations for licensing a repository at Yucca. NWPA §121(b). It is also undisputed that EnPA Section 801(b) required that NRC "by rule, modify its technical requirements and criteria under section 121(b) of the" NWPA. In light of these provisions, the common-sense conclusion is that Part 63 must have been issued "under this subtitle," because that is exactly what Congress twice required. Accordingly, NRC listed the NWPA as authority for Part 63 in the preface to its rule

[1] In any event, Respondents concede that Petitioners' challenge on geologic primacy in the petition for rulemaking suit (No. 03-1058) can proceed even if the Court agrees with Respondents' argument. Resp.Br. 14, 29.

(JA-52), and in the very first sentence of Part 63. 10 C.F.R. §63.1 ("This part prescribes rules ... in accordance with the [NWPA] and [EnPA]").

Respondents' efforts to overcome this straightforward reading of the statute and NRC's own rule are tortured. They now say Part 63 was not *really* issued "under" the NWPA within the meaning of Section 119 because (1) the word "under" requires "the source of the agency's statutory authority to act" to be the NWPA itself, Resp.Br. 24; (2) NWPA Section 121(b) provides that NRC's Yucca licensing rules were to be issued "pursuant to authority under other provisions of law"; and (3) these "other provisions" are the Atomic Energy Act ("AEA") and Energy Reorganization Act ("ERA"). Respondents then claim petitions for review of NRC's Yucca rules under these earlier laws may only be filed under AEA Section 189b, 42 U.S.C. §2239(b), which in turn applies the Hobbs Act and its 60-day deadline for review. This argument fails on multiple levels.

As an initial matter, neither the AEA nor the ERA granted NRC any authority over DOE waste disposal at Yucca.[2] Nothing in these statutes requires NRC to

[2] It is undisputed that AEA Sections 11s and 110, 42 U.S.C. §§2014(s) and 2140, preclude NRC from exercising AEA authority over DOE waste disposal facilities. This fundamental AEA design gave DOE broad self-regulatory authority so as to exempt the nation's nuclear weapons production complex from civilian licensing requirements. *See Waste Control Specialists v. DOE,* 141 F.3d 564 (5th Cir. 1998). NRC does license enumerated classes of DOE waste management facilities under ERA Sections 202(3) and 202(4), 42 U.S.C. §§5842(3) and (4), but authority there is expressly limited to facilities for "receipt and storage" of waste and to "Retrievable Surface Storage Facilities and other facilities authorized for the

promulgate any Yucca licensing rules or authorizes NRC to issue an "authorization to construct" a waste facility. *Only* the NWPA (1) grants NRC authority to license a DOE disposal facility; (2) requires NRC to issue Yucca licensing regulations; and (3) empowers NRC to issue an "authorization to construct" in addition to a license to receive and emplace waste after construction. NWPA §§114(d), 121(b). Part 63 must have been issued "under" the NWPA given these provisions and the limitations of the earlier statutes; it cannot have been issued "under" statutes that do not authorize it.

Moreover, AEA Section 189b, 42 U.S.C. §2239(b), relied on by NRC to invoke the Hobbs Act, applies only to final orders entered in NRC "proceedings of the kind specified in subsection (a) above," and that subsection specifies a "pro-

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express purpose of subsequent long-term storage." Respondents' view, Resp.Br. 23, that DOE's waste disposal facilities were made subject to NRC licensing under the ERA is premised on their transmogrification of the word "storage" in ERA Section 202 to mean "disposal," a feat performed by fiat in a footnote to NRC's original Part 60. *See* 46 Fed. Reg. 13,971 n.1 (1981). But Congress has long recognized profound distinctions between waste "disposal" and "storage." NWPA Section 2(9) defines "disposal" as "emplacement in a repository of [waste] ... with no foreseeable intent of recovery," while Section 2(25) defines "storage" as "retention of [waste] ... with the intent to recover such waste." Indeed, at a 1999 public meeting on proposed Part 63, NRC advised, "[w]e are not *storing* the waste in Yucca Mountain. It is for *disposal.*" JA-71 (emphasis added). Nor does Respondents' view gain merit in a vague reference culled from legislative history. Resp.Br. 23 n.4. Rather, two Committees developing the NWPA recommended NRC's authority be *extended* to cover DOE disposal facilities because such facilities were "currently exempt" from NRC licensing. S. REP. NO. 96-871, at 2-3 (1980); S. REP. NO. 97-282, at 68 (1981).

ceeding" for the issuance of rules regarding "the activities of licensees." "Licensees," in this context, obviously refers only to those authorized by the AEA, and NRC has no AEA licensing authority over DOE. *See* n.2, *supra.* Part 63 therefore cannot have been the result of a proceeding dealing with "activities of licensees" under the AEA.

Congress did specify in NWPA Section 121(b) that, "pursuant to authority under other provisions of law," NRC was to promulgate Yucca licensing regulations. It would be unreasonable to suggest this provision cannot be read to *include* the AEA as such "other" authority. The AEA contains many of the traditional requirements for nuclear licensing (such as the holding of licensing hearings), and Congress may not have wanted to re-specify them in the NWPA. But it is equally unreasonable for Respondents to suggest that reference to "other" authority here means NRC cannot be said to be acting "under" the NWPA, or that the NWPA is necessarily itself excluded from the authority under which NRC acts in setting Yucca requirements. After all, Section 121(b) itself specifies requirements for NRC's rules ("Such criteria shall provide for the use of a system of multiple barriers...."), and the NWPA is replete with requirements for NRC, most of which are reflected in Part 63 (*e.g.*, Sections 113(b) and 114(a)(1)(F), reflected in 10 C.F.R. §§63.15 and 63.16; Section 114(d), reflected in 10 C.F.R. §§63.31 to 61.33; and Section 114(f)(4), reflected in 10 C.F.R. §63.24). Consistent with this view,

NWPA Section 114(d) provides that NRC "shall consider an application for a construction authorization ... in accordance with the laws applicable to such applications," it being understood that "laws" here must include both the NWPA and AEA, as well as the Administrative Procedure Act.

2. Respondents contend the word "under" in Section 119 requires that the NWPA provide the *sole* authority for any decision for which review is sought. Respondents' litigation-driven effort to replace the word "under" with the phrase "having its sole statutory authority in" must be rejected. A covered agency's "decision ... 'under' a statute is made by the [agency] in the interpretation or application of a particular provision of the statute." *Johnson v. Robison,* 415 U.S. 361, 367 (1974). *See also Tennessee v. Herrington,* 806 F.2d 642, 647 (6th Cir. 1986) (referring to actions "arising under" the NWPA).[3] So understood, Part 63 easily qualifies as action taken "under" the NWPA, as it is indisputably an NRC decision "interpret[ing] or appl[ying]" the NWPA. This is so *regardless* of whether NRC may also have relied in part on its general AEA rulemaking authority.

At best, the effect of Respondents' argument is that Part 63 was issued primarily "under" the NWPA and secondarily "under" the AEA, with the result that NWPA Section 119 applies primarily and the Hobbs Act applies secondarily. Section 119 is part of a focused, comprehensive program for developing a national re-

[3] *Cf. NRDC v. Abraham,* 244 F.3d 742, 747 (9th Cir. 2001) (*sine qua non* of NWPA jurisdiction is that agency action must come "at least under the Act").

pository. There is every reason to believe Congress intended Section 119 (and the 180-day deadline) to prevail over the earlier-enacted and more general provisions of the Hobbs Act. *See Smith v. Robinson*, 468 U.S. 992 (1984).[4]

The absurdity of Respondents' construction is illustrated by their attempt to identify NRC decisions that would actually be covered by Section 119, namely, decisions extending the deadline for completion of licensing proceedings and adopting DOE's environmental impact statement ("EIS"). Resp.Br. 21 n.2. But these NRC decisions would each be made *in the Yucca license proceeding*, and, under NWPA Section 114(d), that proceeding is conducted "in accordance with the laws applicable to such applications." Under Respondents' theory, why would reference to "other laws" in Section 121(b) trigger exclusive application of the Hobbs Act, when reference to other "laws" in Section 114 has no similar effect?

This silliness is underscored by the situation that would arise if NRC were to issue a licensing decision adopting DOE's EIS. Under NRC's theory, the licensing decision would be subject to review under the Hobbs Act, except for that piece of it adopting DOE's EIS, which would be subject to review under the NWPA. What reason would Congress have had to make various parts of the same NRC de-

[4] Indeed, NRC conceded in its motion to dismiss that NRC decisions subject to Section 119 may be challenged within 180 days even if such decisions are also covered by the Hobbs Act. Motion to Dismiss at 6 (filed May 28, 2002).

cision subject to different review provisions? *See Griffin v. Oceanic Contractors, Inc.*, 458 U.S. 564, 575 (1982) (statutes construed to avoid absurd results).

3. No case law supports Respondents. *NRDC,* 244 F.3d at 747, supports Petitioners because, for reasons discussed, Part 63 clearly was issued "at least under the Act." And *NRDC v. EPA*, 824 F.2d 1258 (1st Cir. 1987), is hardly relevant because Section 119 does not apply to EPA, so no issue was raised there of whether the Hobbs Act or Section 119 applied. On the other hand, both *GEUMCO v. DOE*, 764 F.2d 896 (D.C. Cir. 1985) and *Tennessee v. Herrington, supra,* support Petitioners. Each adopted a broad, sensible reading of Section 119 to ensure that all DOE decisions called for by the NWPA and related to repositories would be subject to the same review provision.

4. Finally, dismissal would penalize Petitioners for taking NRC at its word when it stated in Part 63 that it was issued "in accordance with" the NWPA (10 C.F.R. §63.1) and that underlying authority included the NWPA (66 Fed. Reg. 55,793). Dismissal here is unwarranted. *See ACLU v. FCC*, 486 F.2d 411 (D.C. Cir. 1973).

III. PETITIONERS' ARGUMENTS WERE TIMELY RAISED

Respondents contend that three of Petitioners' arguments (in No. 02-1116) are waived because Nevada failed to raise them during the Part 63 comment period. Resp.Br. 25-27. Those are that (1) the NWPA requires Yucca's geologic

barrier to be primary; (2) NRC's 10,000-year limit on the compliance period, and elimination of the peak dose issue from licensing hearings, violate the AEA and the National Environmental Policy Act ("NEPA"), respectively; and (3) NRC must find compliance with EPA's standards before issuing a construction authorization. Respondents' contentions are factually and legally wrong.[5]

1. Arguments on geologic primacy, and on the 10,000-year truncation under the AEA, *were* timely made to NRC by Nevada or others during NRC's consideration of Part 63. Petitioners' other arguments were not made during the comment period, but for justifiable reasons.

As Respondents acknowledge (Resp.Br. 27 n.7), Nevada commented specifically to NRC at a meeting on November 2, 1999 that the NWPA requires geologic barriers to be "primary." Although Respondents now say this meeting was "'not an extra comment period,'" *id.*, NRC had advised participants that (1) the meeting would include "not all of Part 63 but the multiple barrier issue, and anything that you think is related to that, too, as well"[6]; (2) "we're here in the process of responding to public comments on Part 63, and we are here to get your input on

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[5] There is little practical effect to two of Respondents' waiver arguments, since the Court can reach point (1) in considering Case No. 03-1058, and Respondents have conceded the merits of point (3).

[6] The multiple-barrier issue inextricably relates to the role of geologic isolation.

this particular issue as we finalize Part 63"; and (3) comments received will be carried back to the Commission. JA-115, 117, 122, 126.

Clearly, although NRC did not formally extend the general comment period, it did include those comments offered at the November 1999 meeting in the Part 63 proceeding. Indeed, NRC referenced this meeting in the "Background" section of Part 63's notice of final rulemaking.[7] JA-130. Moreover, the meeting was held *two years* before NRC finalized Part 63. NRC's rulemaking notice had advised that comments received after the deadline "will be considered if it is practicable to do so." JA-52. Respondents cannot plausibly maintain that a comment submitted two years before NRC acted came too late to be practicably considered.

Finally, *during* the comment period NRC received comments that geology should be primary. The Institute for Energy and Environmental Research ("IEER") observed that "NRC has abandoned the idea of 10 CFR 60 that the geologic setting should be the primary isolation mechanism" and that "[a]llowing primary reliance on engineered barriers for waste isolation is inappropriate." JA-108-10. Likewise, at a public meeting on Part 63 during the comment period, Nevada observed that "geologic barriers were supposed to supply the main barrier to the transport of radioactive waste," but "[c]urrently, from our understanding, DOE is

[7] Given these circumstances, *Reytblatt v. NRC*, 105 F.3d 715 (D.C. Cir. 1997), cited by Respondents (Resp.Br. 27 n.8), is inapt.

relying primarily on the waste package and their miracle alloy.... Would that be acceptable?" JA-77-78.

2. The 10,000-year issue was also timely raised. EnPA Section 801 made the Academy's 1995 report ("Report") the focus of EPA's and NRC's revised standard-setting efforts. In issuing Part 63, NRC considered (but rejected) the Academy's conclusion that the 10,000-year truncation "makes compliance rather easy" and "may simplify licensing," but "we do not understand how such an exercise can support the finding, required in licensing, there be no unreasonable risk to the health and safety of the public." JA-11; JA-58-59. The Academy's chief concern, "no unreasonable risk to the health and safety of the public," *is* the licensing standard for Yucca, derived from AEA Section 57c(2), 42 U.S.C. §2077(c)(2). Thus, the Academy made the same legal argument to NRC regarding the 10,000-year truncation that is before this Court. Also, IEER commented during the comment period that "NRC's rejection of the 1995 [Academy] recommendation that compliance be assessed at the time of maximum exposure is arbitrary." JA-110.

3. As to whether Part 63 failed to require a finding of compliance with EPA standards at construction authorization, NRC's Part 63 rulemaking schedule had the effect of discouraging persons from commenting on the interrelationship between the two agencies' standards during the comment period. EPA's proposed rule was not published until August 1999 (64 Fed. Reg. 46,974, 46,975 (1999)),

months *after* the close of NRC's comment period, and EPA's final rule was not published until June 2001, well after the last NRC rulemaking hearing. In light of this timing, Nevada commented to NRC (during the comment period), "it is premature for [NRC] to propose any modifications of its licensing criteria absent such standards." JA-83-90. Thus, the fact that this argument was not brought to NRC's attention during the comment period is both understandable and excusable.

4. Petitioners argue NRC violated NEPA when it precluded the issue of peak dose (beyond 10,000 years) in DOE's EIS from being challenged in NRC's Yucca hearing. Respondents say the argument is untimely. But this issue did not arise until the final Part 63 rule; there is no discussion of it in the proposed rule because it was not until August 1999 (seven months after NRC proposed Part 63) that EPA's proposed rule first included the requirement that DOE include peak dose calculations in its EIS. 40 C.F.R. §197.35. Moreover, Petitioners' challenge arises from NRC's statement that DOE's peak dose calculations may not be "the subject of litigation" in NRC's hearing. This statement appears only in NRC's final rule.

5. Respondents claim Petitioners cannot raise an issue on review unless Petitioners themselves raised the issue during the rulemaking process. Resp.Br. 25-27. But Petitioners may litigate issues that were timely brought to NRC's attention by *any* rulemaking participant. *Reytblatt*, 105 F.3d at 720-21; *Cellnet Com-*

munication, Inc. v. FCC, 965 F.2d 1106 (D.C. Cir. 1992); *NRDC*, 824 F.2d at 1151.

6. In any event, this Court may waive exhaustion requirements in "'exceptional cases or particular circumstances ... where injustice might otherwise result.'" *Foundation on Econ. Trends v. Heckler*, 756 F.2d 143, 156 (D.C. Cir. 1985) (citation omitted). Respondents do not suggest Petitioners' alleged failure prejudiced NRC, and grave questions of public safety and compliance with Congressional mandates for such a momentous project should not go unanswered because of a procedural discrepancy the Court can excuse.

IV. PART 63 VIOLATES THE NWPA BY ALLOWING YUCCA TO BE LICENSED IRRESPECTIVE OF WHETHER ITS GEOLOGIC BARRIER IS PRIMARY

Petitioners argue NRC may not permit Yucca's licensing if its geologic barrier is not primary among the repository's system of multiple barriers.[8] This view gives effect to each relevant NWPA section. Stated succinctly, Section 114(d) directs NRC to consider an application for a "repository," defined in Section 2(18) as a facility for "deep geologic disposal," but only after DOE, pursuant to Section 113(b)(1), has determined the site's suitability using "criteria ... developed pursuant to section 112(a)." Section 112(a) requires that "geologic considerations ... be

[8] Petitioners use "geologic" as does NWPA Section 112(a) to include the whole geologic setting, *i.e.*, those natural features (geologic, hydrologic, geophysical, seismic) which control the ability of Yucca's setting to retain wastes.

primary criteria" in making this determination, and requires DOE to secure NRC's "concurrence" in such criteria.[9] This overall process was made specifically applicable to "site characterization" *at Yucca*, NWPA §113(a), defined by Section 2(21)(B) as "activities ... to establish the geologic condition" of the site. And those geology-based activities were explicitly limited in Section 113(c) to those "activities ... necessary to provide the data required for evaluation of the suitability of such site for an application" to NRC, thereby inextricably linking geologic suitability with NRC licensing.

Citing nothing, Respondents argue that "Congress in effect overrode the section 112 tests" when it limited site characterization to Yucca. Resp.Br. 32. Their view is that the 1987 NWPA amendments *impliedly repealed* Section 112(a) for Yucca, notwithstanding the explicit instructions in Section 113(b)(1)(A)(iv) of those amendments that *Yucca's* site characterization was to occur using "criteria ... developed pursuant to Section 112(a)." But legislative intention to effect an implied repeal must be so "clear and manifest," *Posadas v. Nat'l City Bank,* 296 U.S. 497, 503 (1936), that, in "the absence of some affirmative showing of an intention to repeal, the only permissible justification for a repeal by implication is when the

[9] The NWPA does not distinguish between "criteria" and "guidelines." Indeed, under Section 112(a), "guidelines shall specify ... criteria."

earlier and later statutes are irreconcilable." *Morton v. Mancari*, 417 U.S. 535, 550 (1974) (citations omitted). Such is not the case here.

Sensing this weakness, Respondents hedge by arguing that by the time NRC receives an application for Yucca, the site "would have already passed the section 112 tests for geologic considerations in the DOE guidelines." Resp.Br. 32. The fatal problem with this fallback is that DOE's guidelines applicable to Yucca *do not apply* the Section 112 tests,[10] and NRC's regulations do not require that they be applied by *anyone* before Yucca receives its construction authorization.[11]

Thus failing to harmonize the NWPA's provisions, Respondents mount a direct attack on Section 112(a), claiming nothing in this section "requires that the geology of [Yucca] be *the* 'primary' barrier." Resp.Br. 29 (Respondents' emphasis). But there are only two types of barriers a repository can have: geologic and man-made. As a matter of simple logic, there are thus only three conceivable permutations for application of "primary" in Section 112(a): (1) the geologic barrier was intended to be *the* primary barrier; (2) the geologic and the man-made barriers

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[10] This failure is the subject of Petitioners' separate action against DOE.

[11] There is thus no "contradiction" between DOE's and NRC's rules, Resp.Br. 32, only because they *both* ignore these statutory requirements. Respondents say Section 112's "statutory obligation is imposed only on DOE." But in requiring "concurrence" by NRC in these tests (Section 112(a)), and "review and comment" by NRC in their specific application to Yucca (Section 113(b)(1)), Congress clearly signaled its intent that they not be *ignored* by NRC.

were each intended simultaneously to be primary barriers (leaving no barriers to be secondary); or (3) *the* primary barrier was intended to be solely the man-made barrier. Until late 2001, both NRC and DOE consistently read Section 112(a) using the first of these constructions, frequently adding the word "the" to Section 112's text when republishing or paraphrasing it. *See, e.g.,* 49 Fed. Reg. 28,134, 28,136 (1984) (NRC concludes "Section 112(a) ... establishes detailed geologic considerations as *the* primary criteria for site selection....") (emphasis added); 49 Fed. Reg. 9650, 9657 (1984) (NRC); 66 Fed. Reg. 57,298, 57,300 (2001) (DOE). Now, however, Respondents are unwilling even to concede the second possibility; their rule permits licensing of a repository system that can meet only the third construction, which is absurd on its face.

Hedging yet again, Respondents next argue that if geologic primacy indeed applies under the NWPA, it applies only when various sites are being compared. Resp.Br. 29-30. To be sure, Congress eliminated site comparisons when it added NWPA Section 160(a) in 1987, confining DOE's characterization activities to Yucca. But at the same time, Congress also amended Section 113(a) to state expressly that site characterization activities at Yucca shall be "in accordance with the provisions of this section," and it amended Section 113(b) to state expressly that the criteria "developed pursuant to Section 112(a)" (including geologic pri-

macy) shall apply to Yucca. Respondents read these amendments out of the statute.[12]

In attempting to rebut the extensive legislative history cited by Petitioners, Respondents can find only a single snippet they allege stands for the proposition that there can lawfully be a repository where the "rock medium" is only "*one of the primary containments* of the waste." Resp.Br. 30 (Respondents' emphasis). But this very sentence also described the "rock medium" as "*the* primary feature of the site," *id.* (emphasis added), and elsewhere the same Report described the NWPA repository program as a "[c]ommitment to a waste disposal technology relying on primary geologic containment." H.R. REP. NO. 97-491, pt. 1, at 30 (1982). In any event, under Part 63 there is no requirement that the rock medium be even "*one* of the primary containments."

Respondents cite EnPA Section 801(b)(2) for the notion that Congress was willing to have NRC "place a great deal of reliance on engineer[ed barriers],"

[12] Respondents' argument is also inconsistent with Congress' requirement, retained even after site comparisons were terminated, that NRC must concur in DOE's siting guidelines. NWPA §112(a). In contrast, when developing the "criteria to be used to determine the suitability of [*Yucca*] for the location of a repository, developed pursuant to section 112(a)," NWPA §113(b)(1)(A)(iv), DOE is merely directed to seek NRC's "review and comment." NWPA §113(b)(1). The logical conclusion is that Congress presumed the issuance of guidelines for Yucca would not precipitate a wholesale abandonment of DOE's site suitability rules, and thus NRC's "review and comment" on the application of those rules to Yucca was adequate.

along with DOE post-closure oversight, as sufficient in themselves. Resp.Br. 30-31. But this section deals solely with whether radiological emissions can realistically be prevented in a *human intrusion* scenario. As Respondents concede, *id.*, the Academy specifically *rejected* the idea that engineered barriers and post-closure oversight could prevent releases from human intrusion. To suggest any of this indicates a Congressional "willingness" to overrule or soften the NWPA's geologic primacy requirements is wishful thinking.

Finally, Respondents obfuscate the NWPA's straightforward language by confecting several putative definitions of "primary,"[13] ultimately concluding the whole exercise, and Petitioners' argument, are "simply word games." Resp.Br. 32. But an agency's construction of an essential statutory term cannot be a "word game." Respondents concede (Resp.Br. 35) that in one limited respect (dealing with human intrusion into the engineered barriers), Part 63 gives meaning to the

[13] Webster's defines "primary" as "of first rank, importance, or value." Tenth Collegiate Ed. (1996). Here, the meaning of "primary" is perhaps best understood by what it *cannot* mean. There is no reasonable construction of "primary" that would permit a repository to be sited in a geologic setting *known to be incapable* of isolating wastes sufficiently to meet applicable health and safety standards; or that would permit licensing of a repository system dependent as a central matter on the unfailing performance of man-made packages.

term "primary" in the proper sense of *the* primary barrier, so there is no reason to suppose the statutory construction task is impossible.[14]

In their Supplemental Brief, Petitioners asked what would happen if DOE had submitted a license application even if Yucca had *failed* the geologic tests of Section 112(a). Respondents' reply is "simply that the NRC will not license [Yucca] if the proposed repository cannot meet the standards that EPA and the NRC have established." Resp.Br. 32-33. This is no answer. Disarmingly, Part 63 permits Yucca's licensing without *any* determination by *any* agency that its geologic setting complies with the NWPA.

V. PART 63 VIOLATES THE NWPA'S MULTIPLE-BARRIER REQUIREMENT

In establishing a framework for developing a facility for "deep geologic disposal," Congress was confident a site could be found with natural features providing the required isolation, and it required primary reliance on such natural features. Congress also recognized man-made barriers could contribute to safety, so NWPA Section 121(b)(1)(B) complements the "primary" barrier requirement by prudently

[14] Likewise, Petitioners have never suggested the safety of a repository system should be reduced to a nonsensical numerical contest between engineered barriers and the geologic setting, as propounded by Intervenor Nuclear Energy Institute's ("NEI's") straw-man hypothetical, Int.Br. 16, with a magic trigger point at 50-percent, whatever that would mean in comparing miles of rock with inches of metal. Indeed, NEI's argument that making geology primary will lead to inferior engineered barriers is based on the absurd premise that repository safety ("total system performance") can never exceed some predetermined amount, so that increasing one barrier's share of such amount necessarily decreases another's.

requiring NRC rules to "provide for the use of a system of multiple barriers in the design of the repository." Congress in fact derived this approach from DOE. *See* S. REP. NO. 96-871, at 3-4 (1980). In framing the NWPA, the key Senate committee explained the "conservative, defense-in-depth approach" it was adopting:

> The multibarrier concept requires that the success of the system be protected against deficient barrier performance or failure by using a series of relatively independent and diverse barriers that would not be subject to a common mode of failure. Barrier multiplicity is required both as a hedge against unexpected occurrences or failures and to provide an appropriate means for protecting against a wide variety of potentially disruptive events. Acceptable system performance must not be contingent on the performance of any non-independent barrier combinations.

Id. (quoting DOE).

Part 63 dishonors these mandates by requiring only an identification and *discussion* of "multiple barriers," and imposing requirements only on the combined "system" of barriers, allowing a fatally flawed barrier to be masked by the successful performance of another. There is no requirement that any barrier independently provide any specific degree of protection. This means Part 63 has no requirement for actual safety redundancy or defense-in-depth, contrary to Congress' intent. Part 63 also departs from longstanding NRC requirements for defense-in-depth at all other large nuclear facilities (and all other repositories) without rational explanation. *See* Pet.Br. 47-54.

Respondents seek to put teeth in their paper tiger by noting Part 63 requires geologic barriers to make a "significant contribution" to ensuring safe performance. Resp.Br. 33. But the beach at Ocean City could be found to make a "significant" contribution in a repository buried there if it gummed up the flow of wastes to the ocean by some period discernible in a performance assessment. Respondents also point to Part 63's requirement that each barrier be "important" and capable of "substantially reducing" the movement of radionuclides, arguing defense-in-depth is satisfied simply because Part 63 requires that multiple barriers exist. Resp.Br. 34-35. But Respondents concede Part 63 includes no requirements for the performance of individual barriers (also called "subsystems") to assure actual safety redundancy. Resp.Br. 36.

Respondents argue disingenuously that the "real reason" for this departure from NRC's prior safety approach is a concern that subsystem performance requirements could lead to suboptimal repository performance. *Id.* According to Respondents, NRC relied on the Academy's alleged conclusion that "quantitative performance standards for individual barriers can lead to a total repository design that is less than optimal." *Id.*

Respondents selectively choose what they like from the Academy and reject the rest, and their tactics are especially disingenuous here. The Academy did *not* recommend that all efforts to develop quantitative subsystem performance re-

quirements be abandoned. It merely cautioned that an improper choice of subsystem performance requirements "might result in a suboptimal repository design" (JA-22), and then stated that "[c]are should be taken to ensure that any subsystem requirements for [Yucca] do not foreclose design options that ensure the best long-term repository performance." JA-22-23. The Academy did not recommend against using *any* subsystem requirements; otherwise this precautionary advice about selecting them would have been incongruous.[15]

Respondents also argue Part 63 does not really depart from NRC's safety rules for other repositories in 10 C.F.R. Part 60 because, while Part 60 does have quantitative standards for the geologic barrier and for engineered barriers, it allowed NRC "'[o]n a case-by-case basis ... [to] approve or specify some other radionuclide release rate, designed containment period or pre-waste-emplacement groundwater travel time, provided that the overall system performance objective ... is satisfied.'" Resp.Br. 37. But this authorization merely allowed NRC to adjust the particular subsystem performance requirements on a case-by-case basis, while the rule itself *retained* the requirement that "other" subsystem standards for release rate, containment period, and groundwater travel time be imposed. It is disingenuous to read Part 60 to say that, from the beginning, NRC has emphasized perform-

[15] In later issuing Part 63, NRC confirmed "[b]oth EPA and NRC have identified the ground-water pathway as the most likely pathway for radiological exposures at [Yucca]." JA-150.

ance of the total system to the exclusion of individual barrier requirements. In proposing Part 63, NRC said specifically it was going to "move away from its earlier approach." JA-60. Part 63 is clearly a dramatic departure from both Part 60 and prior NRC requirements for defense-in-depth. Respondents offer no legitimate explanation for this.[16]

VI. PART 63's 10,000-YEAR COMPLIANCE PERIOD AND ITS EXCLUSION OF PEAK DOSE ARE UNLAWFUL

Part 63 truncates Yucca's dose assessment compliance period at 10,000 years, regardless of whether releases above dose limits will occur thereafter. NRC did this even though it recognized in proposing Part 63 that, if engineered barriers were designed to last 10,000 years (as is now supposedly the case with Yucca), this truncated evaluation "would fail to adequately display the capacity of extant natural barriers to restrict movement of radionuclides following release from the waste packages," and thus early waste package failures could jeopardize the public. JA-59. This "would clearly need to be evaluated," NRC said. *Id.* But no such evaluation has occurred; nor does Part 63 require one.

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[16] Respondents complain "Nevada is essentially asking the Court to rule on factual issues ... about the geology of Yucca," and they protest that NRC should not prejudge Yucca licensing issues. Resp.Br. 36 n.13. This is hypocritical, since, as Respondents concede, Part 63's exclusive reliance on system performance assessment is in fact *premised* on NRC's prejudgment that the state of knowledge has now advanced to where subsystem performance requirements may be abandoned. Resp.Br. 37-38.

Respondents do not disagree with Petitioners' legal claim that Part 63 sets no limit on what doses can be after 10,000 years, or with Petitioners' scientific claim that the highest (peak) dose, in excess of EPA's and NRC's standards, will occur at Yucca well after the first 10,000 years (when the engineered barriers will certainly fail), thereby leaving future generations exposed to the greatest risk. Petitioners argue this violates the AEA.

Respondents say NRC's truncation was a "policy" judgment, reasonable in light of the Academy's observation that establishing a compliance period involves both technical and policy judgments. But NRC's truncation was *not* based on any articulated policy judgment. Instead, NRC based its decision on (1) a technical conclusion that projections of doses from Yucca after 10,000 years are uncertain and beyond the limits of scientific analysis; and (2) a legal conclusion that truncation was required by EPA. *See* JA-157; Resp.Br. 43. Both are wrong.

1. As to the first, the Academy could not have been clearer:

> [W]e believe that there is no scientific basis for limiting the time period of the individual risk standard to 10,000 years or any other value. We recommend ... that compliance assessment be conducted for the time when the greatest risk occurs, within the limits imposed by long-term predictability of both the geologic environment and the distribution of local and global populations. Indeed, the 10,000-year limitation might be inconsistent with protection of public heath.

JA-11. The Academy reemphasized that

> EPA's 10,000-year time limit, evidently adopted in [NRC's] rationale, makes compliance rather easy. This we do not support because ... we

> see no valid justification for this time limit.... The [NRC/EPA] calculational approach may seem to simplify licensing, but we do not understand how such an exercise can support the finding, required in licensing, that there be no unreasonable risk to the health and safety of the public.

Id.

Respondents respond that predicting pathways of human exposure and behavior over long periods is beyond the limits of scientific analysis. Resp.Br. 42-43. This is beside the point. The Academy knew long-term human behavior could not be predicted, and in recommending *against* truncation, it distinguished between "those aspects of repository and waste behavior that depend on physical and geologic processes" which are "sufficiently understood and stable over the long time scales of interest to make calculations possible and meaningful," and "human behavior." JA-15. As to the latter, the Academy recommended "policy decisions be made to specify default (or reference) scenarios to be used to incorporate assumed future human behavior into compliance assessment calculations." JA-15-16. In effect, the Academy advised that scientifically unanswerable questions about human behavior in the distant future be mooted by making assumptions (reference scenarios) about them that cannot be challenged in licensing.

Part 63 specifically adopts this recommendation. It requires Yucca's compliance evaluation to assume both a "reference biosphere" (defining the state of future human society) and the characteristics of a "reasonably maximally exposed

individual."[17] 10 C.F.R. §§63.305, 63.312. Respondents cannot reasonably defend NRC's compliance period truncation in view of the Academy's objection by citing uncertainties in predicting human behavior when Part 63 actually eliminated these uncertainties from the compliance evaluation, just as the Academy recommended. Once such uncertainties are eliminated, NRC is left with nothing to support its position. Importantly, Respondents concede "[a]n enlarged [compliance] period might have been possible as far as geology and engineering go." Resp.Br. 43.

Respondents likewise concede Petitioners' point that it is also beyond the limits of scientific knowledge to predict human behavior and society *within* 10,000 years. *Id.* So the Court is left with no explanation why mooting issues of human behavior and society will work for the first 10,000 years but cannot work thereafter, when humans will be at greatest risk.

2. Respondents also argue NRC "had to select a compliance period that was both defensible and consistent with EPA's 10,000 year period." *Id.* But EPA's use of a 10,000-year compliance period did not force NRC to do likewise. As Petitioners observed (Pet.Br. 65 n.21), both Congress and EPA were clear that any

[17] NRC's notice of proposed rulemaking specifically noted both the impossibility of predicting human behavior and the Academy's recommendation for addressing the issue, and it proposed to "to limit speculation by specifying the assumptions to be used by DOE in developing the assumed critical group and reference biosphere for [Yucca]." JA-57.

Yucca standards EPA might issue left NRC free to impose additional requirements such as a longer dose assessment period.[18] In particular, EPA agrees with Petitioners that, "if DOE uses post-10,000-year results" to bolster its compliance case, "the Commission should not be constrained [by EPA] from considering such information." 66 Fed. Reg. 32,074, 32,129 (2001) (citation omitted).

VI. CONCEDED ISSUES

Petitioners argued Part 63 unlawfully (1) failed to require a finding of compliance with EPA standards before issuance of a construction authorization; (2) substituted a "reasonable expectation" standard for NRC's longstanding and judicially-approved "reasonable assurance" standard; and (3) excluded NEPA peak dose calculations from NRC's licensing hearings on DOE's EIS.

As to (1), Respondents now say that, while Nevada is correct that Part 63 by its terms only requires EPA's standards be "considered" at the construction authorization stage, NRC really meant by this language to *require a finding* of reasonable expectation of compliance before issuing the authorization. Resp.Br. 39-40, 41. As to (2), Respondents now decide "there is no consequential difference

[18] NEI wrongly suggests EPA's standards are the only government standards that may apply to long-term safety performance of Yucca. Int.Br. 10-11. EnPA Section 801(a) requires EPA to issue standards based on the Academy's Report and provides that these standards "shall be the only such standards applicable to the Yucca Mountain site." "[S]uch" standards clearly refers only to EPA emissions standards for Yucca, not to NRC standards, and the only effect of the clause is to preclude EPA from departing from Section 801(a) in issuing Yucca standards. To read Section 801(a) otherwise would be to eliminate Part 63 altogether.

between the two standards." Resp.Br. 48. As to (3), Respondents now disavow the language in Part 63's preamble indicating peak dose calculations in DOE's EIS may not be "the subject of litigation," on grounds this limitation was not expressly specified in the rule itself. NRC now agrees with Petitioners that Part 63 "permit[s] NRC hearings on 'peak dose' in limited situations (*i.e.*, where it is 'not practicable' to adopt DOE's [EIS])." Resp.Br. 45.

The Court is respectfully requested to notice these concessions. However, Petitioners must observe that these concessions, though welcome, reflect poorly on NRC's decision process. For example, NRC devoted some 1000 words of its notice of final rulemaking (JA-136-37) to explaining why NRC had to replace "reasonable assurance" with "reasonable expectation," despite its many earlier refusals to do so, only to inform Petitioners now that the standards are identical.

CONCLUSION

Nevada's petition for review should be granted. Part 63 should be vacated and remanded to NRC for further proceedings consistent with the Court's opinion.

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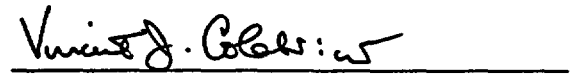
CERTIFICATE OF COMPLIANCE

Pursuant to FRAP 32(a)(7)(C), I hereby certify that this brief complies with the type-volume limitation of FRAP 32(a)(7)(B) and Circuit Rule 32(a)(2). In reliance on the word count of the word-processing system used to prepare this brief, I hereby certify that the portions of this brief subject to the type-volume limitation contain 6961 words.



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I, the undersigned, hereby certify that true and correct copies of "Petitioners' Final Reply Brief" were served this 6th day of June 2003, via First Class U.S. Mail, postage prepaid to the following individuals:

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