

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

STATE OF NEVADA, *ex rel.*
ROBERT R. LOUX, EXECUTIVE DIRECTOR OF THE
NEVADA AGENCY FOR NUCLEAR PROJECTS,
Petitioner,

v.

UNITED STATES OF AMERICA; UNITED STATES
ENVIRONMENTAL PROTECTION
AGENCY; CHRISTINE TODD WHITMAN,
ADMINISTRATOR,
Respondents

PETITION FOR REVIEW

I.

Introduction

1. The State of Nevada, petitioner, on relation of Robert R. Loux, Executive Director of the Nevada Agency for Nuclear Projects (hereafter “Nevada”), by and through its undersigned attorneys, petitions the Court pursuant to rule 15 of the Federal Rules of Appellate Procedure for judicial review of a final decision and action of the United States Environmental Protection Agency and its administrator, Christine Todd Whitman (hereafter collectively “EPA”), such final action being arbitrary, capricious and contrary to applicable provisions of federal and state law. The final agency decision is EPA’s issuance of the final rule, “Public Health and Environmental Radiation Protection Standards for

Yucca Mountain, Nevada” (hereafter “Yucca Mountain Rule”). The Yucca Mountain Rule purports to establish public health and safety standards governing the proposed radioactive storage and disposal facility at the site of the proposed high-level nuclear waste repository at Yucca Mountain, Nevada (the “Yucca Mountain Repository”).

2. EPA’s authority for promulgation of the Yucca Mountain Rule is contained in the Atomic Energy Act of 1954 as amended (“AEA,” 42 U.S.C. 2011-2296); section 801 of the Energy Policy Act of 1992 (“EnPA,” Public Law No. 102-486, Title VIII, §801); and Reorganization Plan No. 3 of 1970 (5 U.S.C. appendix 1). As detailed below, key provisions of the Yucca Mountain Rule fail to comply with applicable laws, including the duty underlying the AEA, EnPA, and the Nuclear Waste Policy Act (“NWPA,” 42 U.S.C. 10101 *et seq.*) to protect public health and safety in connection with the proposed radioactive storage and disposal facility.

3. The Yucca Mountain Rule was published in the Federal Register on June, 13, 2001 at 66 FR 32074-32135. Since the Yucca Mountain Rule is an action of the EPA administrator under the Atomic Energy Act, the ten-day period referenced in 28 U.S.C. 2112(a) commences on the date of “issuance of the order” as defined in EPA regulations. Under EPA regulations, that commencement date is no earlier than 1 PM eastern time on June 27, 2001, two weeks after the date of publication in the Federal Register. 40 C.F.R. 23.9; 40 C.F.R. 23.12. By its express terms, the Yucca Mountain Rule takes effect on July 13, 2001.

II.

Statutory Background

4. In 1982, Congress enacted the Nuclear Waste Policy Act (“NWPA,” 42 U.S.C. 10101 *et seq.*), to provide for a coordinated federal effort to address the national problem associated with the accumulation of high-level nuclear waste currently being stored at the nation’s commercial nuclear reactors and at federal defense installations. Administered in large part by the United States Department of Energy (“DOE”), the NWPA also assigns specific responsibilities to the EPA and other federal agencies. A key feature of the NWPA provides for the assessment and potential development of an underground repository designed to geologically isolate high-level nuclear waste from the human environment.

5. In enacting the NWPA, Congress found that “high-level radioactive waste and spent nuclear fuel have become major subjects of public concern, and appropriate precautions must be taken to ensure that such waste and spent fuel do not adversely affect the public health and safety of the environment for this or future generations.” 42 U.S.C. 10131(a)(7). A central purpose of the NWPA is therefore to “provide a reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level radioactive waste and such spent nuclear fuel as may be disposed of in a repository.” 42 U.S.C. 10132(b)(1).

6. Under provisions of the 1982 NWPA, Congress prescribed a complex process for selecting the proposed sites for development of high level waste repositories. In 1987, the NWPA was amended to name the site at Yucca Mountain as the only site to be characterized for the development of the proposed high-level nuclear waste repository. 42 U.S.C. 10133. To date that characterization has not been completed.
7. After conducting detailed site characterization studies, DOE must make a recommendation to the President concerning the final site approval. Before DOE recommends the site it must prepare an environmental impact statement, hold public hearings, and notify the affected state [Nevada] or Indian tribe.
8. If the President recommends the Yucca Mountain site, it becomes the approved site for the first repository after 60 days, unless Nevada or an affected Indian tribe submits to Congress a notice of disapproval. 42 U.S.C. 10135(b). If such notice of disapproval is received, the site is disapproved unless, during the first 90 days after receipt of the notice, Congress passes a resolution of repository siting approval. 42 U.S.C. 10135(c).
9. Three federal agencies share responsibility for the assessment and potential development of the proposed repository. That responsibility includes establishing standards, licensing and building the proposed repository under the NWPA and related federal statutes. If duly authorized, DOE is to design, build and operate the repository. 42 U.S.C.

10134. The Nuclear Regulatory Commission ("NRC") has the responsibility to reject or license the repository in accordance with the Yucca Mountain Rule. 42 U.S.C. 10134(d). Under its licensure powers, the NRC regulates the construction of the repository, licenses the receipt and possession of high level radioactive waste at the repository, and authorizes the closure and decommissioning of repository. *See* 42 U.S.C. 10141(b).

10. The third federal agency, EPA, is charged with statutory responsibility to set public health and safety standards governing the proposed radioactive storage and disposal facility at the site of the proposed Yucca Mountain repository. Pursuant to authority contained in section 801 of the Energy Policy Act of 1992 (Public Law 102-486), section 161 of the Atomic Energy Act of 1954 (42 U.S.C. 2201(b)), and the Reorganization Plan No. 3 of 1970, the EPA shall set generally applicable standards for protection of the general environment from offsite releases from radioactive material in repositories. That requirement is also referenced in section 121(a) of the NWPA. 42 U.S.C. 10141(a). Section 801 of the Energy Policy Act of 1992 expressly assigns to EPA the duty to “promulgate, by rule, public health and safety standards for protection of the public from releases from radioactive materials stored or disposed of in the repository at the Yucca Mountain site.”

11. The Yucca Mountain Rule provides the environmental standards promulgated by the EPA pursuant to the directive of the Energy Policy Act and the Atomic Energy Act, as referenced in the NWPA. DOE must

comply with this rule when siting, designing, constructing and operating the proposed repository at Yucca Mountain. *See* 10 C.F.R. Part 960 (1987). The NRC must likewise implement the Yucca Mountain Rule when conducting its licensing proceedings. *See* 10 C.F.R. Part 60 (1987).

12. The NWPA expressly assigns oversight responsibilities and participatory rights to the State of Nevada, the state in which the nuclear waste repository referenced in the Yucca Mountain Rule would be solely located if constructed. *See* 42 U.S.C. 10101(30) (defining the Yucca Mountain site as the candidate site “in the State of Nevada”). Among other provisions, the NWPA confers upon Nevada a right to consultation and comment with respect to proposed site characterization activities and to receive updated information on site characterization activities. 42 U.S.C. 10133(a),(b). The NWPA also expressly confers upon the State of Nevada the right to participate in any licensing proceeding before the NRC, and to submit a notice of disapproval following Presidential recommendation of a site to Congress. 42 U.S.C. 10135.

13. Under section 116 of the NWPA, the State of Nevada has the right to receive federal funds for a variety of purposes, including among others reviewing activities taken at the Yucca Mountain site “for purposes of determining any potential economic, social, public health and safety, and environmental impacts” from the proposed Yucca Mountain Repository; and informing Nevada residents of activities at this site. 42 U.S.C. 10136(c)(1)(B). As amended in 1987, the NWPA identifies Nevada as

the only state entitled to receive federal funding under section 116 of the Act. 42 U.S.C. 10136(c)(6).

III.

Jurisdiction and Venue

14. Jurisdiction rests in this Court pursuant to the AEA (42 U.S.C. 2239(b)); the Hobbs Act (28 U.S.C. 2342, 2343); the Administrative Procedure Act (“APA,” 5 U.S.C. 701-703); the Energy Policy Act of 1992 (Pub. L. 102-486, title VIII, section 801); and the Nuclear Waste Policy Act (42 U.S.C. 10139(a)(2)).

15. Venue is proper in this Court pursuant to 28 U.S.C. 1391 because the proposed high-level nuclear waste repository at Yucca Mountain, Nevada is located within the jurisdiction of this Court and the state and individuals affected by this proposed federal action are located in the geographic proximity of this Court. Venue is also proper in this Court pursuant to 28 U.S.C. 2343 and 42 U.S.C. 10139(a)(2) because this Court is the judicial circuit in which the petitioner has its principal office.

IV.

Parties

16. The Petitioner State of Nevada is a member state of the United States. On February 2, 1983, the Governor and Legislature of the State of Nevada were notified pursuant to section 116(a) of the NWPA (42 U.S.C. 10136(a)) that a repository for the disposal and storage of high-

level radioactive waste and spent nuclear fuel may be located at Yucca Mountain located in southeastern Nevada. That notification created substantial rights under the NWPA in Nevada to participate in each phase of the proposed siting process.

17. The State of Nevada, through its Agency for Nuclear Projects, has a statutory mandate to represent the people of Nevada in all matters related to the Yucca Mountain Project to protect the public health, safety and welfare of the citizens of Nevada. The Agency for Nuclear Projects, whose office is in the State of Nevada, is required by state law to carry out the duties imposed on the state by the NWPA, 42 U.S.C. 10101, *et seq.* See Nev. Revised Statutes (“NRS”) 459.0093-459.0098. Nevada also has federal statutory rights to participate in certain decisions relating to the proposed repository at Yucca Mountain, including its right to participate and consult with the Secretary of the United States Department of Energy (“DOE”) in DOE’s Yucca Mountain site characterization activities; to veto any presidential decision to proceed with repository development, subject to a congressional override; and to participate as an interested state in licensing proceedings before the NRC. See 42 U.S.C. 2021 (AEA); 42 U.S.C. 10133, 10135 (NWPA).

18. The State of Nevada, acting through its Agency for Nuclear Projects, submitted written and oral comments to EPA in response to its publication in the Federal Register on August 27, 1999 of environmental radiation protection standards in “proposed rule” form. 64 FR 46976-47016. Oral comments were presented on October 19, 1999 in

Amargosa Valley, Nevada, and on October 20, 1999 in Las Vegas, Nevada. The Agency for Nuclear Projects submitted its written comments in a letter to the EPA dated November 23, 1999. Notwithstanding these specific oral and written comments, the EPA failed to enact environmental radiation protection standards in final form for the Yucca Mountain Repository fully complying with federal and state law, including statutory mandates designed to protect public health and safety.

19. The State of Nevada and its citizens would be adversely affected by enactment of the Yucca Mountain Rule as the final rule for public health and safety standards governing the Yucca Mountain site. For reasons detailed below, key provisions of the Yucca Mountain Rule are inconsistent with EPA's obligation under section 801 of the Energy Policy Act of 1992 to protect the public from releases from radioactive materials stored or disposed of in the proposed Yucca Mountain Repository. These provisions also violate the mandate of the NWPA to provide "reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level nuclear waste and such spent nuclear fuel" as may be disposed of in this repository. 42 U.S.C. 10132(b)(1).

20. Robert R. Loux, on whose relation this petition is brought, is the Executive Director of the Nevada Agency for Nuclear Projects and is charged with the duties connected with implementing Nevada's participation and oversight of the proposed Yucca Mountain Repository.

21. Respondents in this action, the United States of America, the United States Environmental Protection Agency and Administrator Christine Todd Whitman in her official capacity, are all entities responsible for the promulgation of the Yucca Mountain Rule, and did in fact finally promulgate that rule.

IV.

10,000 Year Period of Performance

22. Petitioner incorporates paragraphs 1 through 21 of this petition as though fully set forth herein.

23. Section 801 of the Energy Policy Act of 1992 (EnPA, Pub. Law 102-486) directs the EPA to set public health and safety standards for radioactive material stored or disposed of in the proposed Yucca Mountain Repository. The purpose of these standards is to protect the public from releases from radioactive materials stored or disposed of in the proposed Yucca Mountain Repository. Similarly, a central objective of the NWPA is to require reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level nuclear waste and spent nuclear fuel. 42 U.S.C. 10132(b)(1).

24. Section 801(a) of EnPA also requires EPA to promulgate rules consistent with the findings and recommendations of the National Academy of Sciences (“NAS”) addressing reasonable standards for protection of the public health and safety. Section 801(a)(2) requires the EPA

administrator to contact NAS, which provides findings and recommendations on reasonable standards for public health and safety.

NAS must then address at least the following three issues:

- a) Whether a health-based standard based upon doses to individual members of the public from releases to the accessible environment (as that term is defined in the regulations contained in subpart B of part 191 of title 40, Code of Federal Regulations, as in effect on November 18, 1985) will provide a reasonable standard for protection of the health and safety of the general public.
- b) Whether it is reasonable to assume that a system for post-closure oversight of the repository can be developed, based upon active institutional controls, that will prevent an unreasonable risk of breaching the repository's engineered or geologic barriers or increasing the exposure of individual members of the public to radiation beyond allowable limits; and
- c) Whether it is possible to make scientifically supportable predictions of the probability that the repository's engineered or geologic barriers will be breached as a result of human intrusion over a period of 10,000 years.

25. The Yucca Mountain Rule is to be "based upon and consistent with" the findings and recommendations of NAS. EnPA, Public Law 102-486, Title VIII, section 801(a)(1). On August 1, 1995, NAS released its report entitled "Technical Bases for Yucca Mountain Standards" ("NAS Report").

26.The NAS Report found that “. . .there is no scientific basis for limiting the time period of the individual-risk standard to 10,000 years or any other value” NAS Report, p. 55.

27.The NAS Report concluded that the probabilities and consequences of the relevant features, events, and processes that could modify the way in which radionuclides are transported in the vicinity of Yucca Mountain--including climate change, seismic activity, and volcanic eruptions--“are sufficiently boundable so that these factors can be included in performance assessments that extend over periods on the order of about one million years” NAS Report, p. 91.

28.Although the NAS Report concluded that performance assessments should extend to periods of “about one million years,” EPA established the period of performance for purposes of the Yucca Mountain Rule at 10,000 years. *See* 40 C.F.R. §§ 197.13, 197.14, 197.15, 197.20, 197.25, 197.30.

29.EPA’s selection of a 10,000 year period of performance is directly contrary to the State of Nevada’s recommendations contained in the November 23, 1999 letter of its Agency for Nuclear Projects. These comments noted that “with a Yucca Mountain nuclear waste repository, the primary concern is protection of the quality of the potable water supply that would be impacted by releases of radionuclides from the repository, and protection of the people and environment that depend on that water supply.” These comments observed that the waste isolation

performance in the Yucca Mountain repository system would rely heavily on the projected longevity of an engineered barrier system whose long-term integrity is susceptible to significant uncertainty.

30. The November 23, 1999 letter of the Agency for Nuclear Projects also noted that “[t]he safety issue for a Yucca Mountain geologic repository system is the magnitude of the peak expected dose from radionuclide releases, not when the event occurs. The uncertainty of when it would occur is such that there is no rational basis to truncate the performance calculation at an arbitrary point in time, since at some unknown and unknowable point in the future the peak dose will occur.” To effectively protect public health and safety, the applicable standard must remain in effect during the time in which peak doses are likely to occur.

31. The Yucca Mountain Rule’s inclusion of the 10,000 year period of performance is contrary to the conclusions contained in the NAS Report and is arbitrary, capricious, and contrary to law, in violation of the APA. 5 U.S.C. 706. That period of performance violates section 801 of the Energy Policy Act, and in particular fails to satisfy EPA’s duty under section 801 of EnPA to protect the public from releases from radioactive materials stored or disposed of at the proposed Yucca Mountain Repository.

32. The Yucca Mountain Rule’s inclusion of the 10,000 year period of performance is inconsistent with the mandate of the NWPA to provide reasonable assurance that the public and the environment will be

adequately protected from the hazards posed by high-level nuclear waste and spent nuclear fuel associated with the Yucca Mountain site. 42 U.S.C. 10132(b)(1). Nor is it consistent with the mandate of the AEA to protect the health and safety of the public. 42 U.S.C. 2012.

V.

Point of Compliance Issue

33. Petitioner incorporates paragraphs 1 through 32 of this petition as though fully set forth herein.

34. The Yucca Mountain Rule defines “controlled area” as:

1) The surface area, identified by passive institutional controls, that encompasses no more than 300 square kilometers. It must not extend:

- a) farther south than 36° 40’ 13.6661” north latitude, in the predominant direction of ground water flow; and
- b) more than five kilometers from the repository footprint in any other direction; and

2) The subsurface underlying the surface area. 40 C.F.R. 197.12.

35. The Yucca Mountain Rule contains a southerly point of compliance at 18 kilometers. That rule would allow DOE to use 18 kilometers of the Amargosa aquifer for dilution and dispersion of radiation from the repository. That rule contravenes Nevada’s recommendations to the EPA with respect to the point of compliance.

36. The Yucca Mountain Rule's definition of the "controlled area" and location of a point of compliance at 18 kilometers are inconsistent with the standards at other similarly regulated federal facilities; and allow DOE to use the underlying aquifer for dilution and dispersion of radionuclide contamination in violation of federal and state law, including the Safe Drinking Water Act and the Nevada Water Pollution Control Law (NRS 445A.300-445A.730).

37. The Yucca Mountain Rule's definition of the "controlled area" and location of a point of compliance at 18 kilometers, is arbitrary, capricious, and contrary to law, in violation of the APA. 5 U.S.C. 706. The specified definition and location do not protect the public health and safety. That definition and location therefore fail to satisfy EPA's duty under section 801 of EnPA to protect the public from releases from radioactive materials stored or disposed of at the Yucca Mountain repository.

38. That definition of the "controlled area" and location of a point of compliance at 18 kilometers are also inconsistent with the mandate of the NWPA to provide reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level nuclear waste and spent nuclear fuel associated with the Yucca Mountain site. 42 U.S.C. 10132(b). Nor are they consistent with the mandate of the AEA to protect the health and safety of the public. 42 U.S.C. 2012.

VI.

Definition of “Disposal”

39. Petitioner incorporates paragraphs 1 through 38 of this petition as though fully set forth herein.

40. The NWPA defines “disposal” as “the emplacement in a repository of high-level radioactive waste, spent nuclear fuel, or other highly radioactive material with no foreseeable intent of recovery, whether or not such emplacement permits the recovery of such waste.” 42 U.S.C. 10101(9).

41. The Yucca Mountain Rule defines “disposal” as “the emplacement of radioactive material into the Yucca Mountain disposal system with the intent of isolating it for as long as reasonably possible and with no intent of recovery, whether or not the design of the disposal system permits the ready recovery of the material.” 40 C.F.R. 197.12.

42. The inclusion of the “intent of isolating it for as long as reasonably possible” language in the Yucca Mountain Rule is arbitrary and capricious and violates the letter and intent of the NWPA to the detriment of public health and safety.

VII.

Definition of “Reasonably Maximally Exposed Individual”

43. Petitioner incorporates paragraphs 1 through 42 of this petition as though fully set forth herein.
44. The Yucca Mountain Rule defines the “reasonably maximally exposed individual” (“RMEI”) as a hypothetical person who meets the following criteria:
- a) Lives in the accessible environment above the highest concentration of radionuclides in the plume of contamination.
 - b) Has a diet and living style representative of the people who now reside in the Town of Amargosa Valley, Nevada. The DOE must use projections based upon surveys of the people residing in the town of Amargosa Valley, Nevada, to determine their current diets and living styles and use the mean values of these factors in the assessments conducted for 40 C.F.R. 197.20 (which provides the human intrusion standard) and 40 C.F.R. 197.25 (which provides the individual protection standard); and
 - c) Drinks 2 liters of water per day from wells drilled into the ground water at the location described in subparagraph (a) (i.e., the accessible environment above the highest concentration of radionuclides in the plume of contamination). 40 C.F.R. 197.21.
45. EPA’s inclusion of the RMEI is arbitrary, capricious, and contrary to law, in violation of the APA. 5 U.S.C. 706. Inclusion of the RMEI is contrary to the recommendations of NAS; and also contravenes Nevada’s

recommendations to the EPA, which observed that “it is not reasonable to assume that for even hundreds of years into the future that people will continue to live only where people live today. The very limited availability of private land in Amargosa Valley largely has determined where people live and farm today. In the context of United States, or even Nevada state history, notwithstanding the future requirements of a nuclear waste repository, requiring such an assumption fails any test of credibility.”

46. EPA’s inclusion of the reasonably maximally exposed individual fails to satisfy EPA’s duty under section 801 of EnPA to protect the public from releases from radioactive materials stored or disposed of at the Yucca Mountain repository. Inclusion of the RMEI is also inconsistent with the mandate of the NWPA to provide reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level nuclear waste and spent nuclear fuel associated with the Yucca Mountain site. 42 U.S.C. 10137(b)(1). Nor is it consistent with the mandate of the AEA to protect the health and safety of the public. 42 U.S.C. 2012.

VIII.

Prayer for Relief

The State of Nevada, by and through the executive director of its Agency for Nuclear Projects respectfully requests that the Court:

- a) Declare that EPA’s actions with respect to the aforementioned provisions are inconsistent with applicable law;

- b) Hold unlawful and set aside the aforementioned provisions of the Yucca Mountain Rule;
- c) Direct EPA to reissue those parts of the Yucca Mountain Rule found to be unlawful, complying with the requirements of EnPA, the AEA, APA, NWPA, other applicable laws, and this Court's findings;
- d) Stay application and enforcement of the Yucca Mountain Rule pending resolution of the claims in this petition;

- e) Award Nevada all costs and disbursements plus reasonable attorneys' fees and costs; and
- f) Award such further relief as the Court determines to be just and reasonable.

Dated: 27 June 2001

Respectfully submitted,

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