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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSIONERS

In the matter of)
the Petition of the)
States of Nevada and)
Minnesota for the adoption)
of an amendment to)
10 C.F.R. Part 60)

DOCKET NO. PRM 60-2

AMENDED PETITION

The States of Nevada and Minnesota hereby amend their Petition to Institute Rulemaking, submitted herein, pursuant to 5 U.S.C. Section 553 and 10 C.F.R. Section 2.800-2.809, on January 21, 1985. This amendment is based on the intervening action of the Environmental Protection Agency (EPA) on August 15, 1985 in which the EPA issued final standards for protection of the general environment from offsite releases from radioactive material in repositories.

I. Proposed Rules

A. Amend 10 C.F.R. Part 60 as follows:

1. Add definitions to Section 60.2:

() "Active institutional control" means any measure other than a passive institutional control performed to: (1) control access to a site, (2) perform maintenance operations or remedial actions at a site, (3) control or clean up releases from a site, or (4) monitor

AMENDED PETITION

DURVEA, MURPHY,
DAVENPORT & VAN WINKLE
Attorneys at Law
Evergreen Plaza Building
711 Capitol Way
Olympia, Washington 98501
(206) 754-6001

8510070351 850930
PDR PRM
60-2

DS11
add John Phillips, 4600 MNB
add James Wolf, 9604 MNB
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1 parameters related to geologic repository performance and compliance
2 with standards limiting releases of radioactivity to the accessible
3 environment.

4 () "Passive institutional control" means: (1) permanent
5 markers placed at a site, (2) public records and archives,
6 (3) government ownership and regulations regarding land or resource
7 use, and (4) other methods of preserving knowledge about the location,
8 design, and the contents of a geologic repository.

9 2. Add to Section 60.21(c) "Content of [license] application"
10 and renumber remaining sections:

11 (9) A general description of the program for post-permanent
12 closure monitoring of the geologic repository.

13 3. Add a new Section 60.24(c), (d) and reletter the remaining
14 subsection as (e).

15 (c) The Commission shall evaluate the environmental impact
16 statement required by 42 U.S.C. 10134(f) and 10 C.F.R. 60.21(a) to
17 determine whether its adoption by the Commission would not compromise
18 the independent responsibilities of the Commission to protect the
19 public health and safety under the Atomic Energy Act of 1954 (42
20 U.S.C. 2011, et. seq.). In making such a determination, the
21 Commission shall consider:
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1 (1) whether the Department of Energy has complied with the
2 procedures and requirements of the Nuclear Waste Policy Act (42 U.S.C.
3 10101 et. seq.).

4 (2) whether the alternative sites proposed in the environmental
5 impact statement are bona fide alternative sites; that site
6 characterization under 42 U.S.C. 10133 has been completed at such
7 sites; and that the Secretary, after site characterization is
8 complete, or substantially complete, at such sites, has made a
9 preliminary determination that such sites are suitable for development
10 as repositories consistent with the guidelines promulgated pursuant to
11 42 U.S.C. 10132.

12 (3) whether the consideration of the alternative sites considered
13 in the environmental impact statement included consideration of the
14 natural properties that are expected to provide better isolation of
15 the wastes from the accessible environment for 10,000 years after
16 disposal; and whether the analyses used by the Department of Energy to
17 compare the capabilities of different sites to isolate wastes were
18 based upon the following:

19 (i) only the undisturbed performance of the disposal system has
20 been considered;

21 (ii) the performance of the waste packages and waste forms
22 planned for the disposal system was assumed to be the same from site
23 to site and assumed to be at least an order of magnitude less
24 effective than the performance required by 10 C.F.R. 60.113; and
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(iii) no credit was taken for other engineering controls intended to correct preexisting natural flaws in the geologic media (e.g., grouting of fissures shall not be assumed, but effective sealing of the shafts needed to construct the repository shall be assumed).

(4) whether the disposal systems considered, selected or designed will keep releases to the accessible environment as low as reasonably achievable, taking into account technical, social and economic considerations.

(d) If the Commission determines that adoption of the environmental impact statement would compromise the independent responsibilities of the Commission, then the Commission shall consider fully the environmental impact of the selection of the proposed site as required by 42 U.S.C. 4321, et. seq.

4. Revise Section 60.51(a)(1) "License amendment for permanent closure" as follows:

(1) A detailed description of the program for post-permanent closure monitoring of the geologic repository in accordance with 60.144. As a minimum, this description shall:

(A) identify those parameters that will be monitored;

(B) indicate how each parameter will be used to evaluate the expected performance of the repository;

(C) describe those monitoring devices which will indicate the likelihood that standards limiting releases of radioactivity to the accessible environment may not be met.

1 (D) discuss the length of time over which each parameter
2 should be monitored to adequately confirm the expected performance of
3 the repository;

4 (E) indicate how the results of post-permanent closure
5 monitoring will be shared with affected State, Indian tribal and local
6 governments.

7 (5) Add a new subsection to Section 60.52(c) "Termination of
8 license" and renumber current Section 60.52(c)(3) as 60.52(c)(4).

9 (3) That the results available from the post-permanent closure
10 monitoring program confirm the expectation that the repository will
11 comply with the performance objectives set out at Sections 60.112 and
12 60.113.

13 6. Modify Section 60.113 by adding:

14 (d) In any event, however, and notwithstanding the provisions of
15 (b) above, the geologic repository shall incorporate a system of
16 multiple barriers, both engineered and natural, each designed or
17 selected so that it complements the others and can significantly
18 compensate for uncertainties about the performance of one or more of
19 the other barriers. 'Barrier' means any material or structure that
20 prevents or substantially delays movement of water or radionuclides.
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22 7. Add a new Section 60.114 "Institutional Controls":

23 Neither active nor passive institutional controls shall be deemed
24 to assure compliance with the overall performance objective set out at
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1 Section 60.112 for more than 100 years after disposal. However, the
2 effects of passive institutional controls may be considered in
3 assessing the likelihood and consequences of processes and events
4 affecting the geologic setting.

5 8. Add a new Section 60.122(c)(18) and renumber later sections:

6 (18) The presence of significant concentrations of any naturally-
7 occurring material that is not widely available from other sources.

8 9. Add a new Section 60.144 "Post-Permanent Closure Monitoring":

9 A program of post-permanent closure monitoring shall be conducted
10 and shall provide for monitoring of all repository characteristics
11 which can reasonably be expected to provide substantive confirmatory
12 information regarding long-term repository performance, provided that
13 the means for conducting such monitoring will not degrade repository
14 performance. This program shall be continued until termination of a
15 license which shall not occur until the Commission is convinced that
16 there is no significant concern which could be addressed by further
17 monitoring.

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19 B. Commission Findings.

20 The essential substance of the rules promulgated herein was
21 originally proposed by the Environmental Protection Agency for
22 inclusion in 40 C.F.R. 191 on December 29, 1982, 57 F.R. 58196,
23 pursuant to Section 121(a) of the Nuclear Waste Policy Act, 42 U.S.C.
24 10141, the Atomic Energy Act of 1954, as amended, and the President's
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1 Reorganization Plan No. 3 of 1970. Significant public comment was
2 received by the Environmental Protection Agency pursuant thereto.
3 Such comment has been reduced to written record which the Nuclear
4 Regulatory Commission has reviewed for substantive content. Response
5 to such comment has been incorporated by the Environmental Protection
6 Agency in its final version of the rule issued on August 15, 1985, 50
7 F.R. 38065.

8 During the pendency of the EPA rulemaking, significant
9 interaction occurred between Commission and EPA staff regarding which
10 was the proper agency to adopt rules in the nature of "assurance
11 requirements" which would apply to Commission licensees, to insure
12 against the inherent uncertainties in selecting, designing and
13 licensing waste disposal systems that must be very effective for more
14 than 10,000 years. The two agencies agreed informally, and the EPA
15 standard as finally issued provides, that assurance requirements are
16 an appropriate mechanism to better guarantee that numerical standards
17 will be realized; that the NRC was the more appropriate agency to
18 adopt such standards as they apply to NRC licensees; and that the NRC
19 approach would be to integrate the essence of EPA's earlier proposed
20 rules into the repository licensing provisions of 10 C.F.R. 60. The
21 Commission finds that the adopted rules realize those objectives.

22 The President must recommend a first high-level nuclear waste
23 repository location to Congress by March 31, 1987 (Section
24 114(a)(2)(A), 42 U.S.C. 10134(a)(2)(A)) or March 31, 1988 if he
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determines an extension necessary (Section 114(a)(2)(B), NWSA 42
U.S.C. 10134(a)(2)(B)). The Nuclear Regulatory Commission must act
upon an application for construction authorization for that repository
by January 1, 1989, or within 3 years of the application's filing
(Section 114(d)(1), (2), 42 U.S.C. 10134(d)(1), (2)). The President's
recommender must be based upon Department of Energy site
characterization at a site which must have been recommended by January
1, 1985 (Section 112(b)(1)(D), 42 U.S.C. 10133(b)(1)(D)). Site
characterization must be performed pursuant to a plan reviewed by the
Commission and the affected state (Section 113(b)(1), 42 U.S.C.
10133(b)(1)) before characterization begins. That plan must include
criteria to be used by DOE to determine the "suitability of such
candidate site for the location of a repository, developed pursuant to
Section 112(a);" (Section 113(b)(1)(A)(iv), 42 U.S.C.
10133(b)(1)(A)(iv)). DOE's Section 112(a) guidelines, as concurred in
by the Commission on June 22, 1984, 49 F.R. 28130, require that
evidence used to apply those guidelines include "analysis of expected
repository performance to assess the likelihood of demonstrating
compliance with 40 C.F.R. 191 and 10 C.F.R. 60" 10 C.F.R.
960.3-1-5. The Commission finds, therefore, that the rule herein
adopted must be in place in order that the Department of Energy may
design its site characterization plan in a manner consistent with its
final guidelines.

C. 42 U.S.C. 2239(a)(2)(A).

The Commission finds that the rule promulgated herein does not amend any operating license currently in effect.

II. Grounds and Interest.

Petitioner State of Nevada files this amended rulemaking Petition as a state notified, pursuant to Section 116(a) of the Nuclear Waste Policy Act, 42 U.S.C. 10136(a), that a potentially acceptable site for a repository has been identified within the state. The Draft Environmental Assessment of the Yucca Mountain Site, Nevada Research and Development Area, Nevada, published on December 20, 1984, indicates that the Yucca Mountain site may be nominated under Section 112(b)(1)(A) of the Act and may be recommended for characterization under Section 112(b)(1)(B) of the Act. The State of Nevada may become affected for purposes of participation in site characterization, pursuant to Section 113 of the Act. Nevada has an interest in, and the prevailing responsibility for, the protection of the future health and safety of the citizens of the State of Nevada.

Petitioner State of Minnesota joins this amended Petition as a state informed by the Department of Energy that, due to the presence of crystalline rock within its borders, the State is being considered for site characterization for a second repository. As a potentially acceptable state, the State of Minnesota may be directly affected by the substance of standards for development of repositories. Minnesota

1 has an interest in, and the prevailing responsibility for the
2 protection of the future health and safety of the citizens of the
3 State of Minnesota.

4 III. Statement in Support.

5 The Nuclear Waste Policy Act was enacted by the Congress on
6 December 20, 1982 and approved by the President on January 7, 1983.
7 Section 121(a) of the Act, 42 U.S.C. 10141(a), required the
8 Environmental Protection Agency to promulgate by rule, not later than
9 one year after the date of the enactment of the Act, or January 7,
10 1984, "generally applicable standards for protection of the general
11 environment from offsite releases from radioactive material in
12 repositories." Pursuant to its view of that requirement and its
13 general authority under the Atomic Energy Act and the President's
14 Reorganization Plan of 1970, the Environmental Protection Agency
15 published proposed "Environmental Standards for the Management and
16 Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive
17 Wastes" on December 29, 1982 (47 F.R. 58196). Those proposed
18 standards include Containment Requirements (proposed 40 C.F.R.
19 191.13), Assurance Requirements (proposed 40 C.F.R. 191.14) and
20 Guidance for Implementation (proposed 40 C.F.R. 191.16).

21 The Environmental Protection Agency received significant written
22 comment and conducted public hearings on the proposed standards. The
23 entire record of the rulemaking is contained within Environmental
24 Protection Agency Docket No. R 8203 and is available for inspection in
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1 the West Tower Lobby, Gallery One, Central Docket Section, 401 M
2 Street Southeast, Washington, D.C.

3 In 1983, early in the process of notice and comment on EPA's
4 proposed 40 C.F.R. 191, objections were raised regarding the authority
5 of the Environmental Protection Agency to promulgate that portion of
6 its proposed rules contained in proposed 40 C.F.R. 191.14, entitled
7 "Assurance Requirements." The objections were based on the legal
8 argument that Section 121(a) of the Nuclear Waste Policy Act, 42
9 U.S.C. 10141(a), specifically states that EPA's authority to
10 promulgate the proposed rules arises "under other provisions of law."
11 Those "other provisions of law" include the Atomic Energy Act of 1954
12 as amended, 20 U.S.C. 2021(h), and the President's Reorganization Plan
13 No. 3 of 1970, which placed within the Federal Radiation Council, now
14 no longer in existence, rather than the Environmental Protection
15 Agency, the authority for such requirements as contained within the
16 proposed 40 C.F.R. 191.14.

17 The States of Nevada and Minnesota filed the original Petition in
18 this matter on January 21, 1985, in an effort to catalyze resolution
19 of the apparent disagreement between the NRC and EPA regarding the
20 appropriate agency to adopt the substantive rule which Nevada and
21 Minnesota desire. The Commission docketed the Petition, 50 F.R.
22 18267, and requested comments thereon. Six comments were received and
23 the comment period was closed on July 1, 1985. No action has yet been
24 proposed.

On August 15, 1985, pursuant to a stipulated Consent Order in NRDC v. Thomas, (D.C., D.C., 85-0518), EPA issued final standards limiting offsite releases of radioactivity from repositories, 50 F.R. 38065. Though "assurance requirements" were included therein, 40 C.F.R. 191.14, those assurance requirements do not apply to NRC licensees, to wit: the Department of Energy. It is therefore mandatory that NRC amend its repository licensing regulations to incorporate the equivalent substance of EPA standards.

The rules proposed here are those which EPA staff and NRC staff recognized as substantively equivalent to the EPA assurance requirements with one very notable exception: proposed 10 C.F.R. 60.24(c). That proposed rule relates to NRC review and adoption of DOE's environmental impact statement, a document developed in DOE's selection of a repository site. EPA's proposed 40 C.F.R. 191.14(e) dealt with site selection, as NRC staff recognized in comments published by EPA in "Background Paper: Potential Changes in 10 C.F.R. 60 to Replace Assurance Requirements in 40 C.F.R. 191, March 21, 1985". NRC staff, however, found that DOE's site selection guidelines, 10 C.F.R. 960.3-1-5, adequately address this issue. Nevada and Minnesota are concerned and the Commission should also be, that DOE's site selection process may not produce bona fide alternatives for consideration in DOE's EIS because of DOE's current interpretation of Section 114(f), 42 U.S.C. 10134(f). If it does not, NRC's "independent responsibilities . . . to protect the public health and safety under the Atomic Energy Act of 1954" (Section 114(f), 42

1 U.S.C. 10134(f)) will be implicated. The National Environmental
2 Policy Act, 42 U.S.C. 4321, et seq, together with the Atomic Energy
3 Act of 1954, as amended, 42 U.S.C. 2011, et seq, require the
4 Commission to consider bona fide alternatives, even if Section 112 of
5 the Nuclear Waste Policy Act, 42 U.S.C. 10132, does not require DOE to
6 do so. The rule which is proposed here would guarantee that bona fide
7 alternatives were evaluated by the NRC, if not also DOE. The "low as
8 reasonably achievable" releases concept has also been reintroduced in
9 this context. The bases for DOE's consideration of natural properties
10 expected to provide better isolation have also been reintroduced.

11 In adopting the language of Section 114(f) of the NWP, Congress
12 did not change the requirement for consideration of bona fide
13 alternatives in an EIS. It merely narrowed the universe of all
14 alternatives which DOE must consider in the final EIS, from all sites
15 reasonably available to only those three sites which had been
16 characterized, and for which the Secretary had made a preliminary
17 determination as to site suitability. A site which the Secretary has
18 determined to be unsuitable for development as a repository, or,
19 conversely, at which the Secretary was unable to make a preliminary
20 determination of suitability, is simply not an alternative. Thus the
21 Secretary's responsibilities, under either the NWP or NEPA, to
22 consider alternative sites, is simply not met by the consideration of
23 three sites, one or two of which were determined at any time to be
24 unsuitable for development as repositories. Neither would the

Commission's responsibilities be carried out in such a case, and thus
such a result would severely jeopardize the Commission's ability,
under Section 114(f), to adopt the Secretary's final EIS in order to
meet the Commission's legal obligations under NEPA.

For further comments in support of the proposed 10 C.F.R.
60.24(c), (d) the Commission is referred to the remarks of the State
of Nevada with respect to Section 114(f) of the Nuclear Waste Policy
Act submitted to the Commission at its meeting on September 6, 1985.

CONCLUSION

The NRC should adopt the rules proposed by this amended petition.

DATED this 30th day of Sept, 1985.

STATE OF NEVADA

Honorable Brian McKay,
Attorney General
State of Nevada
Heroes Memorial Building
Carson City, Nevada 89710

STATE OF MINNESOTA

Hubert H. Humphrey III
Attorney General
State of Minnesota
1935 West Country Road B2
Roseville, Minnesota 55113

Harry Swainston
Harry Swainston
Deputy Attorney General
State of Nevada
Heroes Memorial Building
Carson City, Nevada 89710

Jocelyn F. Olson, JMD
Jocelyn F. Olson
Special Deputy Attorney General
State of Minnesota
1935 West Country Road B2
Roseville, Minnesota 55113

Malachy R. Murphy
Malachy R. Murphy
Special Deputy Attorney General
State of Nevada
711 Capitol Way
Olympia, Washington 98501

James H. Davenport
James H. Davenport
Special Deputy Attorney General
State of Nevada
711 Capitol Way
Olympia, Washington 98501