



CROSS-STATEMENT  
OF THE  
ATOMIC INDUSTRIAL FORUM, INC.

on

THE STORAGE AND DISPOSAL OF NUCLEAR WASTE

in the matter of

WASTE CONFIDENCE RULEMAKING

of the

U.S. NUCLEAR REGULATORY COMMISSION

5 September 1980

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
  
PROPOSED RULEMAKING ON THE ) PR-50, 51 (44FR61372)  
  
STORAGE AND DISPOSAL OF )  
  
NUCLEAR WASTE )  
  
(Waste Confidence Rulemaking) )

CROSS-STATEMENT OF THE  
ATOMIC INDUSTRIAL FORUM, INC.

5 September 1980

As a full participant in the Nuclear Regulatory Commission's (NRC) waste confidence rulemaking proceeding, the Atomic Industrial Forum (AIF) is filing the following cross-statement pursuant to the Presiding Officer's order of May 29, 1980. In determining the issues to be herein addressed, the AIF has been guided by the following considerations:

- On the premise set forth in the AIF's statement of position that the Department of Energy (DOE) has the lead responsibility in this proceeding, it has been assumed that DOE will undertake to answer arguments by participants in this proceeding that are at variance with DOE's assessment of waste management technology.
- None of the arguments advanced by participants suggests a need at this time for the AIF to modify or amplify its filed statement of position.
- An important issue to be decided in this proceeding is the standard to be used in reaching a decision that there is reasonable assurance that a means of safe disposal or storage of high-level waste will be available when needed. A description of that standard constitutes the major thrust of this cross-statement.
- A related issue that should be addressed concerns the criteria to be used in licensing waste management facilities and the perspective against which such criteria should be formulated
- Although it is outside the scope of this proceeding, certain participants have improperly argued that this proceeding should consider the question of a moratorium on reactor licensing. The inappropriateness of considering this matter in this proceeding is also briefly addressed herein.

## Standard for Decision

Several participants in this rulemaking argue that the standard by which the Commission should determine whether it has sufficient confidence in the timely availability of nuclear waste disposal and/or storage, so as not to require consideration in individual licensing proceedings of waste storage on-site beyond the term of the license, must be of the highest order, bordering on complete certainty.<sup>1/</sup>

Contrary to these assertions, the required standard for the Commission's decision has already been determined to be one of "reasonable assurance." For the reasons set forth below, we submit that the standard for the decision in this rulemaking is not, nor should it be, the type of standard espoused by certain participants.

### Standard for Decision is "Reasonable Assurance"

It should be recalled that this rulemaking was initiated primarily in response to the decision of the U.S. Court of Appeals for the District of Columbia Circuit in Minnesota v. NRC.<sup>2/</sup> Therein, the Court remanded to the Commission the issue of "whether there is reasonable assurance" that an off-site solution to the nuclear waste question will be available upon the expiration of the operating

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<sup>1/</sup> See Statements of Position by the State of New York, at pp. 15, 24-7; the New England Coalition on Nuclear Pollution, at pp. 9-13; the State of Minnesota, at pp. 2 and 6; Natural Resources Defense Council, Inc., at pp. 16-19; the State of California, at p. 5; and the Environmental Coalition on Nuclear Power, at

<sup>2/</sup> [redacted] 412 (D.C. Cir. 1979).

licenses of the two facilities under review.<sup>3/</sup> The Commission intends, and indeed it arguably must under the remand, to utilize the "reasonable assurance" standard in reaching its decision regarding the availability of permanent disposal.<sup>4/</sup>

Further, this rulemaking is, in part, a continuation of a Commission denial of a petition for rulemaking<sup>5/</sup> which sought to halt licensing of power reactors until the Commission made a definitive finding that methods for high-level waste disposal were available.<sup>6/</sup> In reviewing that decision, the U.S. Court of Appeals for the Second Circuit concluded that the definitive finding requested by the petitioner was not required by the Atomic Energy Act of 1954, as amended,<sup>7/</sup> thus accepting NRC's determination that a "reasonable assurance" of timely availability of high-level waste disposal methods was sufficient for continued reactor licensing.<sup>8/</sup> From this history it is evident that a standard of decision requiring virtual certainty, as sought by certain participants in this proceeding, is not necessary or appropriate in the instant proceeding.

#### Reasonable Assurance Does Not Require Complete Certainty

In applying the reasonable assurance standard, the Commission is not required to determine with complete certainty, as some participants seem to argue, that a means of safe disposal or storage of high-level wastes will be available when needed. As the Court in Minnesota v. NRC, supra, stated, "the ultimate determination can never rise above

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<sup>3/</sup> 602 F.2d at 418.

<sup>4/</sup> 44 Fed. Reg. 61372, 61373 (October 25, 1979).

<sup>5/</sup> Denial of Petition for Rulemaking, 42 Fed. Reg. 34391 (July 5, 1977).

<sup>6/</sup> 44 Fed. Reg. at 61373.

<sup>7/</sup> 42 U.S.C. Section 2011, et seq.

<sup>8/</sup> NRDC v. NRC, 582 F.2d 166, 171, 175 (2d. Cir. 1978).

a prediction."<sup>9/</sup> Indeed, the NRDC v NRC decision specifically focused on whether the NRC must make an affirmative determination, as a condition to licensing, of whether a method for permanent disposal of high-level waste is available. The Court determined that such a finding was not required.<sup>10/</sup>

Although this rulemaking does not involve a review under the National Environmental Policy Act of 1969, as amended ("NEPA"),<sup>11/</sup> a sufficiently analogous situation arises under NEPA to lend support to the conclusion that absolute certainty is not required in this proceeding. In developing a "rule of reason" under NEPA for inquiries into possible alternatives and future environmental impacts of proposals, the courts have determined that an agency is not required to "foresee the unforeseeable," make "crystal ball inquiries," or make "prophecies instead of predictions," but must make reasonable efforts to discern possible alternatives of the future impacts of proposals.<sup>12/</sup> The Commission is not nor should it be required, therefore, to make predictions of the future with absolute certainty, but should seek reasonable assurances of the availability of permanent disposal based on a thorough review of the record in this proceeding and knowledge of ongoing efforts to accomplish the necessary tasks.

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<sup>9/</sup> 602 F.2d at 417.

<sup>10/</sup> 582 F.2d at 171, 175.

<sup>11/</sup> 42 U.S.C. Section 4321 et seq.

<sup>12/</sup> Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978); Kleppe v. Sierra Club, 427 U.S. 390, 410 n. 21 (1976); Concerned About Trident v. Rumsfeld, 555 F.2d 817, 830 (D.C. Cir. 1977); Union of Concerned Scientists v. AEC, 499 F.2d 1069, 1084 (D.C. Cir. 1974); Scientists' Institute for Public Information, Inc., v. AEC, 481 F.2d 1079, 1092-93 (D.C. Cir. 1973); Natural Resources Defense Council, Inc., v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972).

## Application of the Standard to the Issues in this Proceeding

### Waste Disposal

From a practical standpoint, the "reasonable assurance" standard to be used by the Commission in determining that safe methods of high-level waste disposal will be available is not the same standard the Commission will use in licensing waste disposal facilities. The standard the Commission uses in making public health and safety findings in licensing a power reactor, viz, that there is "reasonable assurance...that the activities authorized by the (power reactor) operating license can be conducted without endangering the health and safety of the public,"<sup>13/</sup> is separate and distinct from the reasonable assurance standard to be used in this proceeding.

The Commission previously determined that when high-level waste disposal facilities are themselves ready for licensing, such detailed safety findings will be made, but such specific findings regarding waste disposal facilities are not required as a condition for issuance of an operating license to a power reactor.<sup>14/</sup>

In this proceeding, the Commission will decide, based on the record developed herein, whether it is reasonably confident that a repository system in which wastes can be disposed of safely will be available. The Commission will, in fact, have the basis for finding that there is reasonable assurance that safe off-site waste disposal will be available when needed.

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<sup>13/</sup> 10 CFR Section 50.57(a)(3).

<sup>14/</sup> 42 Fed. Reg. at 34391-2 (1977), citing Section 182 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. Section 2232. See also, NRDC v. NRC, 582 F.2d at 171, 174-5.

### Timing

The Commission has stated that in assessing its confidence in the availability of safe methods of high-level waste disposal it is seeking "reasonable assurance" that such disposal "will be available prior to the expiration of the facilities' operating licenses."<sup>15/</sup> The determination of when licensed waste disposal facilities will be available necessarily involves some uncertainty (relating more to public acceptance, political and institutional than to technical matters) and will be dependent on several factors that nonetheless must be considered in making an estimate. This estimate should be measured against the "reasonable assurance" standard by determining whether a reasonably identifiable time period, i.e., a range of years, can be predicted and comparing this time period to the expiration of current operating licenses. If the identified time period is not beyond the expiration of those operating licenses, the Commission should find reasonable assurance that a waste disposal system will be available when needed. Even the most conservative DOE schedule estimate is well within the limit of the range of reasonableness, in our estimation.<sup>16/</sup>

### Storage

In applying the reasonable assurance standard to the questions of whether safe off-site storage will be available, if necessary, upon expiration of operating licenses, and if the matter

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<sup>15/</sup> 44 Fed. Reg. at 61370. The facilities are Vermont Yankee and Prairie Island, the subjects of the remand in Minnesota v. NRC, supra. The operating licenses for Vermont Yankee and Prairie Island expire during the years 2007-2009.

<sup>16/</sup> AIF Statement of Position at p. 29.



need be addressed in the absence of a finding of reasonable assurance that off-site disposal will be available when needed, whether on-site storage beyond the term of the licenses can be safely accomplished pending availability of off-site storage or disposal, the Commission will in fact have the basis for a finding of reasonable assurance in the availability of these options.<sup>17/</sup> For the reasons given above, reasonable assurance does not require near-certainty in this context either, and there is room to make informed predictions.

### Criteria

Some participants have questioned the lack of final criteria for waste disposal as being a serious impediment to a finding of reasonable assurance that wastes can be disposed of safely.<sup>18/</sup> It is our position that detailed criteria are not necessary at this

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<sup>17/</sup> Based upon extensive practical experience with engineered storage technology at reactors and elsewhere, and demonstrated ability to identify appropriate sites for off-site storage, and the fact that sites for both off-site and on-site storage already exist as set forth in AIF's Statement of Position, the Commission can be quite confident that off-site safe storage can be made available in a timely fashion. Safe on-site storage beyond the term of the license would also be available, should that approach ever be necessary.

<sup>18/</sup> See Statements of Position by the State of New York at pp. 32-33; the New England Coalition on Nuclear Pollution, at pp. 51-53; the Natural Resources Defense Council at p. 82; the California Energy Commission at pp. 24-25; the State of California at p. 6; and the Environmental Coalition on Nuclear Power at p. 3.

time for the NRC to arrive at a finding of reasonable assurance. Assurance can and should be determined on the basis of probable satisfaction of overall performance objectives. Also, many of the arguments against a confidence finding are grossly out of perspective in that they convey the impression that an acceptable site for a repository will be difficult to find.

As we have already indicated,<sup>19/</sup> several qualitative indices of risk can be easily developed to show that even with minimal protection the actual risk to man from disposing of high-level waste below ground is miniscule. Other studies as well bear out this conclusion.<sup>20/</sup>

It would be extremely difficult not to find a site that would be acceptable by any reasonable standard. It has been shown that any geologic site would be suitable even in the presence of adverse hydrological conditions.<sup>19/</sup> In terms of what is known, it thus seems logical to expect confidence in the DOE program. The approach being taken by DOE in advocating natural and man-made systems of mined geologic disposal -- solidified, virtually insoluble waste form; emplacement in corrosion-resistant canisters; corrosion-resistant overpacks; adsorptive backfill materials; deep emplacement in a geologic formation with seismic predictability; lack of flowing groundwater -- supports a finding of confidence.

There is no question that criteria will later be needed for detailed design of the repository, the waste confinement barriers and other

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<sup>19/</sup> AIF Statement of Position at pp. 20-25.

<sup>20/</sup> See Koplic, C. M. et. al., "A Status Report on Risk Assessment for Nuclear Waste Disposal", the Analytic Sciences Corporation, TR-1674-1, for Electric Power Research Institute, NP-1197, October 1979. This report provides a detailed review and comparative analysis of all major safety assessments on this subject.

systems. We point out that such quantitative criteria are being developed and will eventually evolve to the point where they can be used to optimize a given design approach. However, to argue now that their lack of finality is a drawback to a finding of confidence is not valid. A careful review of the many studies cited which compute the eventual health effect to man of wastes buried deep in the earth can easily show that adequate assurance already exists. Thus, an overall performance objective that the resulting health effect must be very small compared to other risks that are already in existence and are accepted by society should suffice at this time. Subsequent quantification of criteria will only serve to reduce the calculated risk even further.

#### Moratorium

Certain participants in this rulemaking have argued that the Commission should halt further licensing of power reactors until it can find that safe, permanent off-site disposal of high-level nuclear wastes is available.<sup>21/</sup> This rulemaking proceeding is not the proper forum to consider the question of a moratorium on reactor licensing. Accordingly, the Presiding Officer should not entertain arguments on this topic or otherwise consider a moratorium except to clarify to the participants the scope of the rulemaking with regard to a moratorium.

In remanding the Commission's decision in the Vermont Yankee and Prairie Island spent fuel pool expansion cases for further

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<sup>21/</sup> See Statements of Position by the State of New York at pp. 1, 7, 8 and 111-115; the New England Coalition on Nuclear Pollution, at p. 4; the State of Delaware, at p. 3; the California Energy Commission, at p. 32.

proceedings, thus giving rise to this rulemaking, the U.S. Court of Appeals for the District of Columbia Circuit decided neither to stay nor vacate the license amendments for expansion of those facilities' spent fuel pool capacities.<sup>22/</sup> The Commission properly noted in the notice of proposed rulemaking that the Court's decision thus supports the "Commission's conclusion that licensing practices need not be altered during this proceeding."<sup>23/</sup>

In any event, the question of whether the Commission should cease licensing facilities until it makes a definitive determination that safe permanent disposal of high-level wastes can be accomplished, as distinguished from a finding of reasonable assurance that such disposal will be available when needed, has already been decided. In 1976, the Natural Resources Defense Council (NRDC) petitioned the Commission for just that relief. The Commission denied the petition, finding that the Atomic Energy Act of 1954, as amended,<sup>24/</sup> did not require the "definitive" finding requested by the NRDC.<sup>25/</sup> The Commission's decision was affirmed in NRDC v. NRC,<sup>26/</sup> wherein the Court stated that the Commission is not required to withhold action on pending or future applications for nuclear power reactor operating licenses until it makes a determination that high-level wastes can be disposed of safely.<sup>27/</sup>

Accordingly, arguments by participants in this proceeding for a moratorium on reactor licensing are misplaced and consideration of such arguments is beyond the jurisdiction of the Presiding Officer.

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<sup>22/</sup> Minnesota v. NRC, 602 F.2d 412, 418 (D.C. Cir. 1979).

<sup>23/</sup> Notice of Proposed Rulemaking, 44 Red. Reg. 61372, 61373 (October 25, 1979).

<sup>24/</sup> 42 U.S.C. Section 2011 et seq.

<sup>25/</sup> Denial of Petition for Rulemaking, 42 Fed. Reg. 34391 (July 5, 1977).

<sup>26/</sup> 582 F.2d 166 (2d Cir. 1978).

<sup>27/</sup> 582 F.2d at 175.