

RULEMAKING ISSUE NOTATION VOTE

July 26, 2000

SECY-00-0160

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: WITHDRAWAL OF PROPOSED RULE AND DENIAL OF PETITION FOR
RULEMAKING SUBMITTED BY THE PUBLIC CITIZEN LITIGATION GROUP
AND THE CRITICAL MASS ENERGY PROJECT (WITS NO. W8100014)

PURPOSE:

To obtain Commission approval to publish in the *Federal Register* a notice of denial of the petition for rulemaking (PRM-140-1) submitted by the Public Citizen Litigation Group and the Critical Mass Energy Project and withdrawal of proposed amendments to 10 CFR Part 140.

BACKGROUND:

After the March 28, 1979, accident at Three Mile Island, Unit 2 (TMI-2), several activities related to the compensation of persons who incurred damages as a result of the accident were set into motion. One of these activities was a decision by the Commission to make a determination whether the accident was an "extraordinary nuclear occurrence" (ENO) as defined in Section 11.j. of the Atomic Energy Act of 1954, as amended. A notice of this decision was published in the *Federal Register* on July 23, 1979 (44 FR 43128). Should the Commission make a finding that an accident is an ENO, persons indemnified under the Price-Anderson Act (Atomic Energy Act, Section 170.n.) waive certain legal defenses, relieving the claimant of having to prove negligence by a defendant and of having to disprove defenses such as contributory negligence.

CONTACT:

Harry Tovmassian
NRR/DRIP/RGEB
(301) 415-3092

On July 24, 1979, the Public Citizen Litigation Group and the Critical Mass Energy Project petitioned the Nuclear Regulatory Commission (NRC) to take two actions relating to an ENO determination at nuclear power plants. The petition for rulemaking was submitted on behalf of five residents of Middletown, Pennsylvania at the time of the accident at TMI-2 who stated that they were harmed by the accident. The petitioners requested the Commission to: (1) find that the accident at TMI-2 was an ENO; and (2) alter or amend the criteria it uses for making a determination that an event is an ENO. A notice of receipt of the petition and request for public comment was published in the *Federal Register* on August 28, 1979 (44 FR 50419).

Since the Commission was in the process of making an ENO finding on the TMI-2 accident when this petition was received, it treated the first request as a comment on the July 23, 1979, notice in the *Federal Register*. On April 23, 1980 (45 FR 27590), the NRC published its finding in the *Federal Register* that the accident at TMI-2 was not an ENO. That action constituted the Commission's denial of the request to determine the accident to be an ENO; however, the *Federal Register* notice did not specifically deny the first part of the petitioners' request. The Commission stated that there were difficulties encountered in applying the existing ENO criteria to the TMI-2 accident. The difficulties were due, in part, to the unusual nature of the accident (i.e., severe onsite consequences resulting in relatively small offsite releases of radiation). According to the Commission, one could envision an accident even more severe than TMI-2 in terms of onsite damage, resulting in widespread evacuation and related losses, yet minor in terms of actual radiological consequences.

With respect to the second request in the petition, the Commission received one public comment on the matter of the amendment of the ENO criteria. The commenter stated that the current criteria for an ENO determination were consistent with the intent of Congress and that the waiver of certain legal defenses triggered by an ENO determination should be limited to incidents resulting in significant injury or loss. The commenter also believes that lowering the threshold for an ENO would lead to higher premiums for insurance coverage and could at some point endanger the availability of this coverage.

DISCUSSION:

The term "extraordinary nuclear occurrence" is defined in Section 11.j. of the Atomic Energy Act as:

any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts off-site, or causing radiation levels off-site, which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines to be substantial, and which the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, determines has resulted or probably will result in substantial damages to persons off-site or property off-site.

This provision calls for a two-part test. In order to make an ENO determination, the Commission must first find that there has been a substantial discharge or dispersal of radioactive material offsite or that there have been substantial levels of radiation offsite, as specified in 10 CFR 140.84. If the Commission so finds it must then find that the event has resulted or will probably result in substantial damages to persons offsite or property offsite, as specified in 10 CFR 140.85.

When Congress enacted the "waiver of defenses" provisions of the Price-Anderson Act, as amended, it was believed that an accident at a nuclear facility would be catastrophic with large releases of radioactive material in a short period of time. Such an accident would cause personal exposures and contamination of property meeting Criterion I, rather than an accident of long duration, causing anxiety, some evacuations, but not "substantial" effects in radiological terms.

In the TMI-2 matter, the Commission concluded that the accident did not satisfy the substantial release criterion. There was considerable difficulty in attempting to apply Criterion II, "substantial damages," to the TMI-2 accident. Therefore, the Commission determined that it would be worthwhile to examine whether the criteria it uses to determine if an accident is an ENO, based on the problems pointed out by the facts of TMI-2, are appropriate.

Accordingly, on April 9, 1985 (50 FR 13978) the Commission announced its intention to partially grant the subject petition and published proposed amendments to 10 CFR Part 140. The Commission proposed three options containing differing criteria for determining that an ENO had occurred and solicited public comment on these options. Although the Commission stated that it believed the existing ENO criteria are consistent with the Atomic Energy Act definition, it proposed that these criteria should be reexamined because of difficulties encountered in applying them to the TMI-2 accident. According to the Commission there were three problems with the existing ENO criteria: 1) inconsistency of the existing criteria with the lower dose thresholds in the Environmental Protection Agency's (EPA) "Protective Action Guides" (PAG) on which several of the dose thresholds for "substantial releases" are based; 2) the lack of conclusive tests for objective clinical evidence of radiation injury (Criterion II, "substantial injury"), partly because of the similarity between some physical symptoms of psychological stress and acute radiation injury; and 3) the difficulty, if not the impossibility, of accurately and timely evaluation of monetary damages (Criterion II), some of which required court adjudication in the TMI-2 case for award of proper compensation.

Options 1 and 2 retain the structure of the existing criteria (i.e., sequential substantial release/damage determinations) and contain explicit criteria for both "substantial releases" and "substantial damages." These options employ estimates of offsite doses and ground contamination as indicators of substantial releases but have separate criteria for substantial damages. Option 1 and Option 2 would both lower the threshold for a determination of a substantial release of radioactive material or radiation offsite from the current projected whole body dose in excess of 20 rem to 5 rem. These reduced dose limits for substantial release determinations were set at values in the range of occupational dose limits but are substantially above the doses to the general public expected from the normal operation of NRC-licensed

facilities. The third option proposed a single set of three conditions, any one of which, if met, would be sufficient for a finding of both substantial releases and substantial damages.

The Commission received 27 comments on the proposed rule, with no preponderance of support for any one of the options. A number of commenters believed that the existing criteria for determining that an ENO had occurred were adequate and presented convincing arguments supporting this view. One commenter said that the difficulties in applying the criteria after the TMI-2 accident were a result of the lack of "substantial releases" and "substantial damages" and not the inadequacy of the ENO criteria. Two commenters favored modifying the ENO criteria, arguing that the proposed options would be easier to apply.

After considering the public comments on the proposed rule, the Staff has found the arguments for retaining the existing criteria the most persuasive. Furthermore, the Staff believes that each of the options proposed has serious deficiencies. Options 1 and 2 would set one of the thresholds for a "substantial release" determination at a projected whole body dose in excess of 5 rem, which could trigger an ENO determination at levels near the allowable occupational doses. However, the legislative history of the Price-Anderson Act indicates that it was Congress' intention that the waiver of defenses be invoked only if something exceptional were to happen. Since Option 3 proposes a single criterion for both substantial releases and substantial damages, it strays from Congressional intent for a sequential substantial release/substantial damage determination. The legislative history indicates that Congress did not intend that a "substantial release" determination alone would trigger the waiver of defenses provisions of the Price-Anderson Act.¹ Should Option 3 be adopted, an integrated air dose exceeding 10 rads which could be received by an individual over a 24 hour time period would trigger an ENO determination, even if no injuries or damages were sustained.

With respect to the difficulties with the ENO determination criteria cited in the 1985 *Federal Register* notice, the Staff now believes that these are not as serious as was once thought:

- (1) The first difficulty cited was not the difficulty of applying the ENO criteria to TMI-2, but a perceived inadequacy in the ENO criteria because they were not in line with the EPA's PAGs. However, the PAGs were established for a completely different set of objectives than those for the ENO determination criteria. The PAGs have been established with the intention of reducing the exposure of the public by providing predetermined action levels for implementation of planned protective actions such as evacuations. These action levels are established with public health and safety as the main objective. The concept of PAGs was introduced to radiological emergency response planning to assist public health and other governmental authorities in deciding how much of a radiation hazard in the environment constitutes a basis for

¹See House Report No.2043, "Amendments to the Price-Anderson Indemnity Provisions of the Atomic Energy Act of 1954, as Amended, Pertaining to Waiver of Defenses," HR 17685, September 14,1966, p. 23, where the Joint Committee on Atomic Energy stated that the definition of "extraordinary nuclear occurrence" entails a two-tiered test.

initiating emergency protective actions.² In contrast, the ENO criteria were established to provide thresholds for triggering the waiver of defenses provisions for persons indemnified under the Price-Anderson Act. The Commission has already taken the position that health and safety regulations have been arrived at conservatively and for a different purpose and are not appropriate for use as ENO thresholds. Paragraph (b)(1) of Section 140.81 sets forth the scope of the ENO criteria as follows:

The various limits in present NRC regulations are not appropriate for direct application in the determination of an 'extraordinary nuclear occurrence' for they were arrived at with other purposes in mind, and those limits have been set at a level which is conservatively arrived at by incorporating a significant safety factor. Thus, a discharge or dispersal which exceeds the limits in NRC regulations, or in license conditions, although possible cause for concern, is not one which would be expected to cause substantial injury or damage unless it exceeds by some significant multiple the appropriate regulatory limit. Accordingly, in arriving at the values in the criteria to be deemed "substantial" it is more appropriate to adopt values separate from NRC health and safety regulations, and of course, the selection of these values will not in any way affect such regulations.

Thus, the Staff believes that lowering the ENO determination thresholds for substantial releases, as proposed in Options 1 and 2, is not appropriate.

- (2) Experience gained as a result of the TMI-2 accident suggests that the Criterion II threshold, requiring objective clinical evidence of radiation injury (10 CFR 140.85(a)(1)) to five or more individuals offsite, may not be as important to an ENO determination as the other thresholds in Criterion II. A second threshold in this criterion, a finding that \$5 million or more damage offsite has been or probably will be sustained (10 CFR 140.85(a)(2)), would appear to trigger an ENO determination before the radiation injury criterion would. After the TMI-2 accident, no deaths or injury due to the accident were reported. However, to date, more than \$70 million has been paid out in damages and expenses (mostly attributable to evacuation costs). If another accident occurred, the monetary damage estimate would apparently trigger an ENO determination before the death or injury threshold did.
- (3) The difficulty of estimating monetary damages does not seem to be as great as previously believed. The legislative history that led to the amendments to the "waiver of defenses" provisions of the Price-Anderson Act, in which the ENO concept was introduced, indicates that Congress was mindful that criteria to implement such an

²Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, NUREG-0396 (EPA 520/1-78-016), December 1978, p. 3.

approach would be difficult to apply. In its September 14, 1966, report accompanying House of Representatives Bill No. 17685,³ the former Joint Committee on Atomic Energy (JCAE) stated: "[T]he committee recognizes that inclusion of the 'extraordinary nuclear occurrence concept' in this bill adds very considerably to the complexity of implementing the proposed legislation."⁴ Thus, the difficulty of applying the criteria is not an appropriate justification for changing them. Furthermore, the Staff now believes that timely and accurate estimates of monetary damages are possible. Several studies describe models estimating such damages.⁵ The Staff is confident that, should an event meriting an ENO determination occur again, experts from relevant disciplines can be assembled to estimate monetary damages.

CONCLUSION:

The Staff has concluded that the proposed amendments to 10 CFR Part 140 should be withdrawn and the petition denied. In the Staff's view, the existing criteria are adequate, the difficulties in applying the criteria cited in the 1985 *Federal Register* notice are overstated, and there are serious deficiencies in each of the options posed in the proposed rule.

TIMELINESS OF COMMISSION RESPONSE:

Several factors contributed to the delay in completing the resolution of this petition until this time. The Commission dealt with the central request of the petitioners (i.e., to declare the TMI-2 accident an ENO) in a timely fashion. The petition was received on July 25, 1979, and the NRC published its finding that the accident was not an ENO in the *Federal Register* on April 23, 1980. In announcing its finding, the Commission did not specifically deny the petitioners' request to declare the TMI-2 accident an ENO.

The other request of the petitioners, to modify the ENO determination criteria, was of secondary importance. The Commission decided to consider this proposal but accorded it a low priority because of resource considerations and the existence of higher priority rulemaking actions. In the meantime, in light of the public comment received, the Staff has reexamined its reasoning for the need for modification of the ENO criteria and the options that it proposed in the *Federal Register* notice for the proposed rule (50 FR 13978). The Staff has also relied upon its own analysis of the legislative history of the Price-Anderson Act in arriving at its recommendations to the Commission.

COORDINATION:

³The Senate version of the bill, S. 3830, was identical.

⁴House Report No. 2043, *supra*, p.11.

⁵Examples of such studies include: (1) C.B. Flynn, "Three Mile Island Telephone Survey," NUREG/CR-1093, October 1979; (2) C.B. Flynn and J.A. Chalmers, "The Social and Economic Effects of the Accident at Three Mile Island," NUREG/CR-1215, November 1979; (3) H.B. Gamble and R.H. Downing, "Effects of the Accident at Three Mile Island on the Residential Property Values and Sales," NUREG/CR-2063, April 1981; and (4) J. J. Tawil, et al., "Off-Site Consequences of Radiological Accidents," NUREG/CR-3413, August 1985.

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer concurs that there will be no resource impacts. The Office of the Chief Information Officer has reviewed this paper for information technology and management implications and concurs in it.

RECOMMENDATION:

That the Commission

1. Approve the *Federal Register* notice that denies the petition and withdraws the proposed rule (Attachment 1).
2. Note
 - a. That the staff will contact both petitioners after the Commission approves this action but before it is released for the purpose of informing the petitioners of the NRC's official response to the petition (Attachment 2) and providing any additional explanation that the petitioners may request, and
 - b. That the staff recommends the Commission inform Congress.

/RA/

William D. Travers
Executive Director
for Operations

Attachments:

1. *Federal Register* Notice
2. Letters to Petitioners

