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Arizona Public Service Company
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Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Request for Public Comments on Proposed Change to 10 CFR Part 140; Criteria for an Extraordinary Nuclear Occurrence

Gentlemen:

The Federal Register of April 9, 1985, published a notice of proposed rulemaking ("Notice") by the U. S. Nuclear Regulatory Commission ("NRC") which advised that NRC was considering a revision of its regulations, 10 CFR §§140.84 and 140.85, establishing criteria for use in determining whether any specific nuclear incident that may occur is or is not an "extraordinary nuclear occurrence" ("ENO"). The establishment of such criteria was required by the 1966 amendments of the Atomic Energy Act of 1954 ("Act") which, among other things, require persons held liable for an ENO to waive certain defenses against claims covered by either the financial protection or government indemnity provided pursuant to Section 170 of the Act.

The Notice states that consideration is being given to the revision of the existing ENO criteria to simplify their administration and to avoid three of several problems encountered in their application to the Three Mile Island ("TMI") nuclear incident as reported in NUREG-0637-"Report to the Nuclear Regulatory Commission from the Staff Panel on the Commission's Determination of an Extraordinary Nuclear Occurrence (ENO)", December, 1979. No explanation is given in the Notice why only three of the problems identified in NUREG-0637 are addressed in the revisions of the criteria under consideration.

The Notice requests comments on three different options for revision of the existing ENO criteria. Options #1 and #2 would retain the framework of the existing criteria and require two distinct determinations be made as to (1) "substantial releases" and (2) "substantial damages". Option

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#3 would require only a single determination that releases of radioactive material during an accident resulted in specified property decontamination threshold dose levels or threshold integrated air dose to individuals. In such cases the probable occurrence of substantial damages or substantial injuries would be presumed on the basis of unidentified correlation studies.[1/]

The following comments of Arizona Public Service Company are limited solely to Option #3 which in concept would provide quantifiable, objective criteria for determining whether or not an ENO has taken place. In our view Option #3, with certain modifications that would retain the quantifiable, objective criteria, is preferable to either Option #1 or Option #2. We concur with the additional comments of Commissioner Bernthal which persuasively articulate the potential problems associated with Option #1 and Option #2, and it would serve no useful purpose to repeat such comments here.

General Comments

First, we would urge that any revision of the existing ENO criteria address two problems reported in NUREG-0637 in applying the existing criteria to the TMI incident:

1. The need for defining the duration of the accident.

2. The need for defining "offsite".

Second, the phrasing of Option #3 should be modified to make it explicit that the three alternative conditions apply only (i) to the contamination of "offsite" real and personal property or (ii) integrated doses received by "offsite" individuals as a result of the release of radioactive materials during the course of the incident.

Third, some provision for the quantification of "substantial damages" must be added to conditions (a), (b) and (c) of Option #3 to meet the legislative mandate.

1/ Counsel has advised us that such studies should be identified in future rulemaking notices if the problems associated with Table S-3 of 10 CFR Part 51 are to be avoided.

1. Definition of the "Duration of the Accident."

NUREG-0637 reports (pages 12-13) that the Staff Panel, for purposes of the ENO determination only, assumed the TMI incident to have terminated when the reactor was placed in a configuration for natural cooling and all discharges were within the dose levels and concentrations specified in Appendix I to 10 CFR Part 50 and 10 CFR Part 20. This postulation of limited accident duration was considered necessary to make a timely ENO determination as required by public interest considerations and was justified on technical grounds. We would add that a timely ENO determination is required by law and practical considerations even though there may be a possibility of additional releases after the termination of the accident.

In our view the criteria used by the Staff Panel to define the duration of the accident were proper and should be codified in the revision of the ENO criteria.

2. Definition of "Off-Site".

No definition of "off-site" is found in the ENO criteria or elsewhere in 10 CFR Part 140. The problems associated with this oversight are highlighted at pages 14 and 15 of NUREG-0637. It appears, though not explicitly stated, that the Staff Panel initially tried to utilize the definition given in Section 11(j) of the Act, i.e., by using the definition of the "location" described in the TMI indemnity agreement. Unfortunately, the description of the "location" in the indemnity agreement was vague and ambiguous. This lead the Staff Panel to consider several alternative definitions of "offsite". In the end the Panel adopted the "most conservative" definition, i.e., "all areas, whether or not owned by the licensee, outside of the owner-controlled area enclosed by the permanent fence on Three Mile Island."

There is no justification for permitting such ambiguities to persist in the revision of the ENO criteria. A definition of "offsite" that can be applied simply and objectively and without subjective judgments of "conservatism" should be incorporated either in the ENO criteria or elsewhere in 10 CFR Part 140.

Most, if not all, licenses include a description of the site or site boundaries by use of a map or by reference to a description in the license application. This descrip-

tion is provided in order to define the "restricted area" and "unrestricted areas" for purposes of limiting releases from normal operation to levels permitted by Part 20. It seems appropriate, then, to define "offsite" in Part 140 in a consistent manner as being "all areas outside the boundaries of the site described in the applicable license or license application."

If for some reason it is considered that the Part 140 definition of "offsite" must be the same as the statutory definition in Section 11(j) of the Act, then it is suggested a caveat or proviso be added to the regulatory definition, such as:

> "provided, if the 'location' described in the applicable indemnity agreement is ambiguous, then, 'offsite' shall mean all areas outside the boundary of the 'site' described in the applicable license or license application."

Adoption of either of these alternative definitions would obviate the problems found after the TMI incident where the definition of "location" was ambiguous.

3. Phrasing in Conditions (a), (b) and (c) of Option #3.

The phrasing of conditions (a), (b) and (c) of Option #3 is such that they could be interpreted to apply to contamination of "onsite" property and to integrated doses received "onsite". This result would be contrary to statutory intent and presumably Commissioner Bernthal's intent as well. The potential for misinterpretation can be easily eliminated by simply inserting the word "offsite" at the beginning of conditions (a) and (c) and after the word "received" in condition (b).

Further, conditions (a) and (c) are phrased in a manner that they would be triggered by the accumulated contamination of property from the material released as a result of a particular nuclear incident and prior contamination from sources independent of the facility involved, e.g., operation of a nearby waste storage or disposal facility. Such a result would also be contrary to the statutory intent and pre-

sumably Commissioner Bernthal's as well. This unintended result could be precluded by the addition of the underscored language to conditions (a) and (c) as indicated below:

> "(a) Offsite real and personal property is rendered unfit for its normal use as a result of contamination with radioactive materials released during event which would produce..."
>
> "(c) Offsite real and personal property is rendered unfit for its normal use as a result of contamination with radioactive materials released during the event which would produce radiation emissions . . ."

4. Quantification of Substantial Damages or Injuries

Option #3 is premised on the presumption that substantial damages or injuries will probably result from releases of radioactive materials offsite which meet the conditions specified in conditions (a), (b) or (c). Thus, Commissioner Bernthal included in his additional comments the statement:

> "2. For a wide variation of accidents of accident conditions, the postulated decontamination threshold dose rate of 10 millirad/hr (0.10 milligray/hr) covers cases where costs of decontamination would be significant (i.e., at least a few million dollars)."

This statement can only be true, however, if the postulated decontamination threshold dose rate exists over some identifiable area of offsite property or if decontamination costs are escalated because of the nature of the contaminated property or the contamination itself.

Consequently, in order to meet the statutory requirements for ENO determinations, it is necessary to add to conditions (a) and (c) a conjunctive requirement that the decontamination threshold dose rate exists over some specified area (certainly an area larger than 100 square meters) or the estimated decontamination costs exceed a specified value. For example, for some remote sites an appropriate

area specification might be that the decontamination threshold dose rate exists over two square miles.[2] Such a requirement may not be appropriate for sites located in congested areas. Consequently, an alternate threshold stated in terms of estimated decontamination costs in excess of a specified amount should also be included. We consider the addition of the following clause to conditions (a) and (c) of Option #3 would be appropriate to accomplish the objective of making Option #3 compatible with statutory requirements.

> ", and such contamination exists over an area of ___ square miles or any smaller area if the costs of decontamination are estimated to exceed $_____."

In setting the threshold amount of estimated decontamination costs the Commission should be mindful that the Joint Committee report accompanying the 1966 amendments reflects a Congressional view that $5,000,000 would constitute "substantial damages"[3] and that one of the more cogent arguments for increasing the Price-Anderson limitation on liability is that inflation has eroded the protection afforded by the current limitation.

With respect to condition (c) a similar problem exists -- if in fact no people were subject to exposures greater than the threshold dose levels, there could not be substantial injuries, and no presumption based upon measured exposures at a fencepost will save Option #3. As a minimum, some determination will have to be made[4] as to the number of people who were or might have been subject to the threshold exposure level from the postulated noble gas plume. In this

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[2] Approximately equivalent to the area of a 90° segment of a circle with a radius of 1.6 miles.

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[3] U.S. Cong. & Admin. News 1966, page 3223.

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[4] Realistic assumptions should be used in this estimation; ridiculous assumptions, such as a child engaged in a 24-hour aerobic exercise on a site boundary fencepost should be proscribed.

connection, we would concede that where protective action is required to preclude exposures to the threshold air dose, a determination that an ENO had occurred would be appropriate and that the fact of actual exposures should be left to the courts.

Accordingly, we suggest that consideration be given to adding the following clause (or something comparable) to condition (b).

> "and it is determined that _____ or more individuals residing or engaged in normal pursuits in areas where they might have received such air dose if no protective actions were taken."

In our view the threshold number of individuals should be not less than ten.

In conclusion, Arizona Public Service Company recognizes the need to simplify the existing ENO criteria. In accomplishing such task, we prefer the adoption of the conceptual approach espoused by Commissioner Bernthal, because it relies upon quantifiable, objective tests. Nevertheless, we consider some modifications must be made to Option #3 so that its objectives can be achieved in legally sustainable manner.

If you have any questions regarding our comments we would be pleased to discuss them with you.

Very truly yours,

E E Van Brunt

Executive Vice President - ANPP