UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 6, 1985

MEMORANDUM FOR: Chairman Palladino
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal
Commissioner Zech

FROM: John E. Zerbe, Director
Office of Policy Evaluation

SUBJECT: OPE COMMENTS ON SECY-85-283 -- FINAL AMENDMENTS TO 10 CFR PART 50, APPENDIX E; CONSIDERATION OF EARTHQUAKES IN EMERGENCY PLANNING

We have reviewed the staff's proposal and offer comments for your consideration.

BACKGROUND

Proposed (December 1984) Rule

In December 1984 the Commission published for comment a proposed rule incorporating the Commission's interpretations in the San Onofre and Diablo Canyon rulings. 49 FR 49640. The proposed rule would exclude "earthquakes which cause, or occur proximate in time with, an accidental release of radioactive material..." from explicit consideration in emergency planning for nuclear power plant sites. CLI-81-33, 14 NRC 1091(1981); CLI-84-12, 20 NRC 249(1984). The rationale for the proposed rule was based on two considerations: (1) the very low probability of the proximate occurrence of an earthquake of substantial magnitude and an accidental radiological release from an NRC-licensed nuclear power plant and (2) the considerable flexibility of emergency plans that satisfy NRC regulations.

Staff's Proposed Final Rule

Because a number of the public respondents on the proposed rule pointed out that there was only a limited record indicating that emergency plans had adequate flexibility, the staff proposes in the final rule that the licensee probe such flexibility by examination of the possible impairment of certain onsite capabilities. Licensees would be required to confirm that the emergency response plans are sufficiently flexible to assure the existence of certain transport and communications capabilities.

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Specifically, the rule would require that, assuming the disruption of road networks and normal communications, the licensee could nevertheless augment onsite staff, assess plant damage, project offsite radiation hazards, and communicate with offsite authorities. The supplementary information supporting the proposed final rule limits the extent of licensee consideration: evacuation time estimates are not required to take into account the effects of severe low-frequency natural phenomena, reinforcement of offsite structures to withstand such phenomena is not required, and no "detailed, extensive study" has to be made of "the complicating effects of earthquakes or other natural phenomena on offsite emergency response capabilities." The staff's proposed final rule would also require State and local governments to identify in their emergency plans alternate routes of travel and methods for determining whether to shelter or evacuate.

DISCUSSION

Nothing in SECY-85-283 would lead us to change our view that the Commission's original position (no specific consideration of earthquake impacts on emergency planning) remains a viable approach and should be retained. However, the staff's paper does raise additional points that should be considered, points that may enhance the original proposed rule. In particular, adoption of some of the staff's points would clarify the Commission's position by emphasizing that the emergency plans of nuclear power plants must be sufficiently flexible to assure certain specific and essential response capabilities are maintained. 1/

The staff's proposed final rule would emphasize that emergency plans must be sufficiently flexible to assure that, in the event of disruption of normal communications and road networks, certain basic licensee capabilities are maintained. As the Commission has stated, current regulations and practices assure such flexibility in the emergency response plans of each nuclear power plant licensee or operating license applicant.

1/ We do agree with the staff's identification of communications and road networks as the essential response capabilities which are to be considered. We also agree with the staff's identification of certain basic licensee capabilities which must be maintained, i.e. the ability to augment onsite operating staff, to assess damage to the plant, to project expected or actual offsite radiation hazards, and to communicate with offsite authorities. As we understand it, present regulatory review does address these factors. (See discussion of Issue 1 in Enclosure 1 of SECY-85-283.) The staff's proposed final rule would limit the assumptions of the disruption to that of road networks and normal communications. Although other offsite emergency response facilities, such as fire, police, and hospital installations and vehicles, may be assumed to be impaired or destroyed or otherwise unavailable, we believe these are less significant considerations than roads and communications.

The wording of the staff's proposed final rule seems to focus on the causes of disruption ("severe, low frequency natural phenomena characteristic of the site"), whereas the intent, as we see it, appears to be to emphasize the complicating effects of the disruptions. The basic approach here, as in all emergency response planning, should be to have reasonable assurance that the emergency plans are flexible enough to take into account a wide spectrum of disruptive effects. Thus, it seems to us that an examination of the cause of any disruption of normal communications and road networks, whether the cause is a "severe low frequency natural phenomena characteristic of the site" or any other specific event, does not need to be specified in the regulations in order to achieve what we perceive to be the basic intent of present regulations and regulatory practices, i.e., to assure adequate flexibility to respond to disruptions. Thus, in our view, the focus of emergency plans should remain on maintaining the capability to respond effectively to the real and unpredictable consequences of such events.

If the Commission chooses to incorporate some of the staff's proposal so as to enhance the originally proposed rule, the rule would have to be clarified to indicate that State and local governments would make the same assumptions as the licensee in assuring their emergency response flexibility. Moreover, as a wide range of occurrences, natural or otherwise, could result in offsite damage and as the precise location and extent of such damage cannot be predicted, it seems sensible that the emergency plans of State and local governments provide reasonable assurance of the capability to assess actual damage to offsite communications and road networks so that emergency response actions can be adjusted to reflect the real situation at the time.

CONCLUSION

In summary, our preliminary view is that the Commission's original proposed rule should be retained. Nonetheless, we believe you should consider whether the original proposal could be enhanced by inclusion of elements of the staff's proposed final rule (pp.38,39 of Enclosure 1 to SECY-85-283). If revised along the lines of the attached mark-up, the rule would assure that every emergency response plan would have the inherent flexibility to cope with disruptions of communications and road networks, without the need to specifically consider severe, low-frequency natural phenomena, including earthquakes. The rationale supporting the final rule would then rely on the commonsense (or "prudent") need for emergency response plans to be sufficiently flexible to take into account the possible complicating effects of such disruptions on essential emergency response capabilities.

Attachment:
As stated

cc w/attachment:
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S. Chilk, SECY
W. Dircks, EDO
R. Minogue, RES
J. Taylor, IE
H. Denton, NRR

Attachment

OPE Suggested Revision of Proposed Final Rule

COMPARATIVE TEXT

Neither emergency response plans nor evacuation time analyses need specifically consider the impact of severe, low frequency natural phenomena which cause, or occur proximate in time with, an accidental release of radioactive material from the facility.

To demonstrate flexiblity to accommodate disruptions of normal communications and road networks:

(A) The nuclear power reactor operating licensee and applicant emergency response plans shall assure ~~that the following~~ capabilities exist ~~relative to the complicating impacts of severe, low frequency natural phenomena characteristic of the site. In addressing the following capabilities the licensee shall assume that the severe natural phenomenon has disrupted normal communication and road networks.~~

1. ~~Ability~~ To transport necessary personnel to the plant ~~after the event~~ in order to augment the original staff as necessary to cope with degraded modes of plant operation.

2. ~~Ability by the licensee~~ To assess damage to the plant, ~~and~~ to ~~translate this information into~~ projections ~~of the expected~~ or ~~actual~~ radiation ~~hazard~~ exposure offsite, and ~~be able~~ to communicate this information to offsite authorities, ~~so that this information will be available as a factor in the decisionmaking process, including recommendations for protective actions after severe, low-frequency, natural phenomena.~~

(B) ~~In considering the complicating impacts of severe, low-frequency, natural phenomena~~, State and local governments ~~should identify, in their~~ emergency plans, should provide reasonable assurance of the capability to assess location and extent of offsite damage to normal communications and road networks, identify alternate routes of travel and ~~methods for determining~~ determine whether to shelter or evacuate.

FINAL FORM

Neither emergency response plans nor evacuation time analyses need specifically consider the impact of severe, low-frequency natural phenomena which cause, or occur proximate in time with, an accidental release of radioactive material from the facility.

To demonstrate flexibility to accommodate disruptions of normal communications and road networks:

(A) The nuclear power reactor operating licensee and applicant emergency response plans shall assure the capabilities exist

1. To transport necessary personnel to the plant in order to augment the original staff as necessary to cope with degraded modes of plant operation.

2. To assess damage to the plant, to project radiation exposure offsite, and to communicate this information to offsite authorities.

(B) State and local governments emergency plans should provide reasonable assurance of the capability to: assess location and extent of offsite damage to normal communications and road networks, identify alternate routes of travel, and determine whether to shelter or evacuate.