

UNITED STATES
NUCLEAR REGULATORY COMMISSION

November 22, 1978

SECY-78-604

INFORMATION REPORT

For: The Commissioners

From: Robert G. Ryan, Director, Office of State Programs

Thru: Lee V. Gossick, Executive Director for Operations *W J Duda*

Subject: NRC/EPA TASK FORCE REPORT ON EMERGENCY PLANNING (NUREG-0396)

Purpose: To advise the Commission of the completion of the NRC/EPA Task Force Report on Emergency Planning and the upcoming briefing for the Commission on the report.

Issue: This report involves a major policy issue for the Commission.

Discussion: After a two year effort, an NRC/EPA Task Force on Emergency Planning has completed its report (NUREG-0396) (Enclosure 1). The report, which was adopted by a unanimous vote of the Task Force members, will have implications for existing and future nuclear facilities if formally adopted by NRC. The Task Force consisted of 11 members, Harold E. Collins, NRC/SP, Brian K. Grimes, NRC/NRR (Co-Chairman of the Task Force); Floyd L. Galpin, EPA (Senior EPA Representative of the Task Force); Roger M. Blond, NRC/RES, Harry W. Calley, EPA, Leo B. Higginbotham, NRC/IE, C. Vernon Hodge, NRC/NMSS, Michael Jamgochian, NRC/SD, Joe Logsdon, EPA, James A. Martin, NRC/NRR, and Jerry Swift, EPA.

The Commission received a preliminary draft of the report by Information Report SECY 78-231 on April 28, 1978. The report has since undergone an extensive review and redrafting and the Task Force submits today its final report and asks an opportunity to brief the Commission on its content and recommendations. Both the NRC and EPA Task Force members will attend the briefing.

By way of background, the Conference of Radiation Control Program Directors, a national organization of State Radiological Health Officers supported financially by NRC, EPA, and HEW, passed a resolution at its 1976 annual meeting requesting the NRC to - "make a determination of the most severe accident basis for which radiological emergency

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492-7210
492-7415

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SECY NOTE: This paper is currently scheduled for a Commission briefing on December 1.

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response plans should be developed by offsite agencies." The resolution stemmed from State uncertainty regarding the extent of planning and the level of operational preparedness needed to cope with radiological emergencies. NRC and EPA have received correspondence from several State and local governments making similar recommendations during the last three years.

In August 1976, after consultation with EPA, a Task Force consisting of NRC and EPA representatives was appointed by the EDO to address this resolution and related issues. The guidance contained in the final report is intended to provide State and local government emergency preparedness organizations with an improved basis for scoping emergency planning in the environs of light water nuclear power plants. The report in the main impacts on emergency planning outside of the Low Population Zone. The guidance in this report, if adopted, would supplement the emergency planning guidance already published by NRC and EPA.

The most salient feature of the new guidance in the report is the establishment of Emergency Planning Zones (EPZs) on a generic basis around all light water nuclear power facilities. The Emergency Planning Zones will allow States and localities to plan for dose savings. The Task Force recommends the establishment of two concentric zones around each nuclear power facility: an inner zone related to radiological exposure by the plume exposure pathway (10 miles), and an outer zone related to radiological exposure via the ingestion or food chain pathway (50 miles).

NRC Regulations (10 CFR Part 100) now require that an applicant define an area surrounding a nuclear power reactor, as a Low Population Zone (LPZ). Under this rule, a major accident analyzed for siting purposes (i.e. design basis accidents) should not result in exposures in excess of 300 rem to the thyroid from radioiodine exposure, or 25 rem to the whole body, for an individual located at any point on the outer boundary of the LPZ. NRC must also determine that the total number and density of residents within the LPZ is such that there is reasonable assurance during a serious accident that appropriate protective measures, such as evacuation or sheltering, can be taken on their behalf.

The concept of an Emergency Planning Zone is distinct from the concept of a Low Population Zone. An Emergency Planning Zone will define those areas surrounding a commercial

light water power reactor in which State and local planning for predetermined protective actions is warranted.

As it now stands, if the engineered safety features are lost during an accident, and a significant release of radioactive material to the environs occurs, the Low Population Zone has no meaning with regard to the size of the area around the plant in which emergency response would be appropriate. This is because the exposure to individuals in the population could exceed the proposed EPA Protective Action Guides at distances greater than most Low Population Zones, particularly in the case of radiological exposure via the ingestion pathway. Thus, a principal goal in establishing Emergency Planning Zones is to foster a breadth, versatility and flexibility in response planning and preparedness in a systematic manner. Such planning should provide assurance that effective actions can be taken to minimize exposures from a spectrum of accidents, including Class 9 accidents. As a general proposition, emergency planning needs seem to be best served by adopting uniform Emergency Planning Zones for all light water power reactors. The implications for NRC in adopting the recommendations made in the report and other issues were identified in Enclosure 2 to SECY 78-231 (copy attached as enclosure 2).

The Task Force report in its various stages of development has been reviewed by interested Federal agencies, and various State and local government emergency preparedness representatives. Additionally, the Co-Chairmen of the Task Force met with State and local government representatives on several occasions to discuss two drafts of the previous report. The reaction of interested Federal agencies had been supportive. The reaction thus far by State and local government emergency preparedness representatives has been mixed. But, there is overwhelming support among those who have reviewed the drafts of the report for the concept of establishing Emergency Planning Zones around each nuclear power facility. In earlier reviews, State representatives raised questions under four general headings: (1) They were concerned about an increase in the costs to State and local governments for emergency planning and preparedness; (2) They quarrel with the rationale for the size of the zones, arguing that the distances seem excessive and novel, particularly in the case of some older nuclear facilities now located in relatively densely populated areas; (3) They expressed fear of what intervenors might do with the guidance in connection with the siting of new facilities; (4) They expressed a concern that the nuclear utilities will be put to further difficulty

and expense. It should be noted, that the final report has not yet been reviewed by State and local government representatives and the Task Force believes that most of these concerns have been satisfactorily resolved in the final version.

The Task Force believes that Emergency Planning Zones can be established without undue burden on States and their local governments. This is particularly true for recently licensed facilities where planning has taken place at substantial distances from reactor sites.

Although the report as now written covers only light water power reactors, its recommendations could also affect the licensing activities for fixed site nuclear fuel cycle facilities since emergency planning requirements there are similar.

We intend to solicit comments on the report from the public via a Federal Register Notice on this report and an accompanying press release. In 90 days, we intend to come back with an Action Paper for the Commission with recommendations based upon the response that we receive.

Coordination:

All members of the Task Force have concurred in forwarding this information paper to the Commission. EPA's endorsement of the emergency planning concepts put forth in this report is found in enclosure 3. NRR's recommendation to forward the Task Force product to the Commission is at Enclosure 4.



Robert G. Ryan, Director
Office of State Programs

Enclosures:

1. NRC/EPA Task Force on Emergency Planning Report (NUREG-0396) - Commissioners,
2. Enclosure (2) to SECY 78-231. SECY, PE, GC &
3. Hawkins, EPA, to Ryan, NRC, Letter of October 12, 1978. EDO only.
4. Denton, NRR, to Ryan, SP Memorandum of October 3, 1978.

DISTRIBUTION

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ENCLOSURE 2
(SECY-78-231)

POSSIBLE SIGNIFICANT POLICY ISSUES RELATING TO
THE DRAFT REPORT, "A MODIFIED PLANNING BASIS FOR
THE DEVELOPMENT OF STATE AND LOCAL GOVERNMENT
RADIOLOGICAL EMERGENCY RESPONSE PLANS IN SUPPORT
OF LIGHT WATER NUCLEAR POWER PLANTS," (NUREG 0396)
NOVEMBER 1977

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- A. Issues discussed in the Task Force Report.
 - 1. Whether and to what extent "Class 9" accidents should be considered in emergency planning.
 - 2. Whether there is a need to plan beyond the LPZ.
 - 3. Whether there is a conflict between Protective Action Guides and dose criteria for siting and design of nuclear power facilities.
- B. Other issues identified by the Co-Chairmen of the Task Force after consultation with the NRC task force members which must be addressed by NRC staff offices before the final report is presented to the Commission.
 - 1. Whether the approach to emergency planning guidance to the States should be endorsed by the Commission. What would be the probable effects of such an approach on the licensing process?
 - 2. Whether existing regulations would require modification given this endorsement or whether additional regulations or guides are desirable. This would include a discussion of the relationship of the Task Force guidance to States to the Commission's policy on reactor siting (Part 100) and the Commission's policy on emergency planning (as expressed for license applicants in Part 50, Appendix E).
 - 3. The degree to which the guidance should be implemented on operating reactors and any impacts on States, local governments, or licensees.
- C. Other emergency planning issues identified by NRC Members or Consultants to the Task Force as possible issues to be discussed.
 - 1. The relationship between the Federal Interagency Program of radiological emergency preparedness assistance to State and local governments in which NRC has the lead agency role and the statutory responsibility of the NRC to carry out a regulatory program.

2. The weight to be given to the response capabilities of State and local governments in the licensing decision process.
3. Whether present Federal guidance to the States with regard to scoping accidents for development of emergency plans (NUREG 75/111 at 2., p. 4, copy attached) is sufficient.
4. What should be the split between Federal, State, local and licensee emergency preparedness and response efforts?
5. To what extent should "Class 9" accidents be considered in plant design? Should there be a relationship between engineered safety features and emergency planning? Are tradeoffs acceptable?
6. Part III of Appendix E to 10 CFR Part 50 requires a demonstration that Emergency Plans "...provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property." Is "reasonable assurance" sufficient? Or should "beyond a reasonable doubt" apply?
7. A principal issue is whether a generic emergency planning distance, such as proposed by the Task Force report (PAZ's), which is established without regard to the specific plant design features or site characteristics used by NRC to determine site suitability and licensability of a facility, is appropriate. Will a conflict exist between guidance to the States regarding the generic distances and the regulatory requirements on the Licensee regarding site suitability distances as related to emergency plans?
8. Difference between realistic assumptions used in WASH-1400, "realistic" assumptions to be used in Environmental Reports and Environmental Impact Statements and the "conservative" assumptions used for Safety Evaluation Reports to derive distances.
9. The use of Protective Action Guides (EPA/FRC), Site Criteria Dose Guideline Values (Part 100) and realistic consequence levels and the relationship of these levels with radiation protection standard limits given by ICRP, FRC and in NRC regulations.

Attachment: Excerpt from NUREG-75/111, ("Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities")

ATTACHMENT TO ENCLOSURE 2

2. Magnitude of the Accident.

A considerable amount of information of potential importance to emergency planners is made available during the licensing process. The evaluation of sites and plant designs, required testing programs, and quality assurance for the operation of such facilities all provide substantial assurance that accidents with serious consequences to the public health and safety are not likely to occur. Nevertheless, highly unlikely sequences of events are postulated and their potential consequences analyzed by the applicant in the Safety Analysis Report which accompanies each application and by the AEC staff in its Safety Evaluation Report for each plant. The AEC considers that it is reasonable, for purposes of emergency planning relative to nuclear facilities, to prepare for the potential consequences of accidents of severity up to and including the most serious design basis accident analyzed for siting purposes. However, the AEC's expectations as to the likely consequences of accidents on a realistic basis are represented in the Final Environmental Statement which is prepared and published by the AEC Regulatory staff for each plant.

The AEC recognizes that accidents with more severe potential consequences than design basis accidents can be hypothesized. However, the probability of such accidents is exceedingly low. Emergency plans properly designed to cope with design basis accidents would also provide significant protection against more severe accidents, since such plans provide for all of the major elements and functions of emergency preparedness. An added element of confidence can be gained, however, if States and local governments assure that their plans for responding to radiological emergencies are coordinated with their plans for dealing with floods, earthquakes, or other disaster situations which might necessitate large scale displacement of people and the provision of shelter, food, medical aid, and other emergency services. Communications, traffic control, evacuation, public notification and other emergency responses will tend to be the same whether or not the emergency involves radiological considerations.

The AEC's Radiological Assistance Program (RAP), the Federal Interagency Radiological Assistance Plan (IRAP) and other Radiological Emergency Assistance Plans, which are a part of the Federal capability, provide significant additional emergency resources in the event of a serious accident.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Office of
Air, Noise and Radiation

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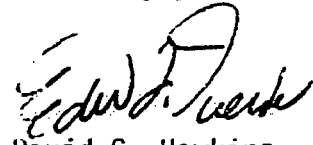
Mr. Robert G. Ryan
Chairman, Federal Interagency Central
Coordinating Committee (RERP)
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Bob:

With regard to your letter dated September 26, 1978, I am pleased to endorse and concur in the emergency planning concepts put forth in the second draft of NUREG-0396 prepared by the NRC/EPA Task Force on Emergency Planning.

We appreciate the opportunity of having been a part of this Task Force from its inception and to share with NRC in the development of this much needed report. It represents a significant effort on the part of both NRC and EPA and is a major step forward in providing guidance to State and local governments in the development of their radiological emergency response plans. The overall impact of the report is that there is now a consistent basis for use by States in emergency response planning and a criterion for Federal regulatory agencies to determine the adequacy of State plans around light water nuclear power plants.

Sincerely yours,

for 
David G. Hawkins
Assistant Administrator
for Air, Noise and Radiation

Enclosure 3



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

October 3, 1978

MEMORANDUM FOR: Robert G. Ryan, Director
Office of State Programs

FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: DRAFT 2 OF NUREG-0396

As discussed in your meeting with Ed Case on September 15, 1978, we recommend that NUREG-0396 go forward to the Commission as a task force product and that a Commission briefing be scheduled where the report can be discussed and any minority views heard. Subsequent to this briefing, State Programs should take the lead in developing an option paper taking into account any feedback from the Commission briefing.

I understand you have received a variety of views from individual NRR task force members and consultants.

A handwritten signature in dark ink, appearing to read "H.R. Denton", is positioned above the typed name.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

cc: S. Levine
R. Minogue
C. Smith
J. Davis
H. Shapar
H. Collins
B. Grimes
D. Bunch
W. Houston
J. Martin

Enclosure 4