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August 31, 1979

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DOCKET NUMBER PROPOSED RULE PR-50 (44 FR 41483)

Mr. Samuel J. Chilk
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Chilk:

The purpose of this letter is to comment, on behalf of the Atomic Industrial Forum's Committee on Reactor Licensing and Safety, on the July 17, 1979 Federal Register Advance Notice of Proposed Rulemaking, "Adequacy and Acceptance of Emergency Planning Around Nuclear Facilities" (44 FR 41483).

Our comments address each of the fourteen issues listed in the notice. We would be pleased to respond to any questions you may have on the enclosed.

Very truly yours,

John E. Ward, Chairman
Committee on Reactor Licensing and Safety

JEW:skh

Enclosure

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PROPOSED RULE PR-50 (44 FR 41483)

Atomic Industrial Forum
Committee on Reactor Licensing and Safety

Comments on

U.S. Nuclear Regulatory Commission
Advance Notice of Proposed Rulemaking
Adequacy and Acceptance of Emergency Planning
Around Nuclear Facilities
(44 FR 41438, July 17, 1979)

August 31, 1979

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1. What should be the basic objectives of emergency planning?

a. To reduce public radiation exposure?
b. To prevent public radiation exposure?
c. To be able to evacuate the public?
d. To what extent should these objectives be quantified?

Response: The basic objective of emergency planning is to minimize public risk, from radiological or other sources, in the event of an emergency. This objective considers the public health and safety implications of protective actions designed to reduce or prevent public radiation exposure (e.g. injuries during evacuation) balanced with the public health consequences of radiation exposure with no protective action. In other words, overall public health risk is the guiding principle in any emergency action and must be reflected in emergency plans.

This principle should be quantified. The EPA and FDA Protective Action Guides are useful for quantifying action levels to limit radiological risk, but additional guidance must be derived from the quantification of an acceptable risk basis for radiological accidents as compared with other natural and man-made hazards. It is our view that four rationales must be integrated in establishing a planning basis - risk, probability, cost-effectiveness, and consequence spectrum. The plan should be flexible in order to accommodate the conditions that exist during the emergency. The radiological emergency plan should be integrated into the overall emergency plans of the state and local agencies.

The specific questions a,b, and c above, lack the proper perspective of public risk as an objective of emergency planning. While evacuation may be an appropriate protective action, it is only one of several appropriate protective actions defined in an emergency plan.

2. What constitutes an effective emergency response plan for state and local agencies? For licensees? What are the essential elements that must be included in an effective plan? Do existing NRC requirements for licenses (10 CFR Part 50, Appendix E) and guidance for States (NUREG- 75/111) lack any of these essential elements?

Response: The essential elements of an emergency plan should:

1) Assure that the responsibility for overall emergency planning and preparedness in state and local governments has been assigned, and that emergency responsibilities of the various supporting agencies and organizations within the state and local governments have been specifically established,

2) Provide and tabulate for ready availability the types of radiological assistance available within each state,
3) Provide notification procedures and communication systems applicable to an emergency,
4) Establish management control of post-accident information centers,
5) Identify and coordinate methods, systems, and equipment to be used by nuclear facility operators, state and local governments for assessing or monitoring off-site consequences of a radiological emergency,
6) Provide pertinent protective action guides and procedures for their implementation,
7) Establish training and provide information concerning radiological exposure control, and ensure that predetermined controls are established for emergency response personnel,
8) Establish general recovery and re-entry plans for areas surrounding the facility,
9) Assure that the established emergency plan will be used when needed,and
10) Provide for periodic plan review, exercising and updating.

An integral part of emergency planning is a quantification of an acceptable probability basis that could be compared with other technological hazard probabilities. Federal guidance must acknowledge and incorporate this principle so state and local agencies can plan for radiological hazards within the framework of overall emergency planning. We feel current NRC guidance to licensees, states and localities does not recognize this need and should be altered accordingly.

3. Should NRC concurrence in the associated state and local emergency response plans be a requirement for continued operation of any nuclear power plant with an existing operating license? If so, when should this general requirement become effective?

4. Should prior NRC concurrence in the associated state and local emergency response plans be a requirement for the issuance of any new operating license for a nuclear power plant? If so, when should this general requirement become effective?

Response: Since the contexts of issues 3 and 4 are similar, our response is combined. Federal concurrence with state and local emergency plans should not be a condition of an operating license independent of the existing licensing process. Radiological emergency planning is only one element of state and local government disaster planning responsibilities. Overall state and local disaster plan reviews and maintenance, including radiological emergency plans, should be assumed by the Federal Emergency Management Agency (FEMA). Effective emergency planning would be assured by tying FEMA funding of state governments to their concurrence with the state's overall emergency plan. The NRC should assist FEMA in radiological emergency planning and plan reviews.

5. Should financial assistance be provided to state and local governments for radiological emergency response planning and preparedness? If so, to what extent and by what means? What should be the source of the funds?

Response: Recognizing NRC's lack of statutory authority over state and local nuclear emergency response planning, we recommend that FEMA assume the responsibility for making policy and coordinating radiological emergency response planning around nuclear facilities in proper context with other disaster planning. As a focal point for federal emergency preparedness activities, we believe FEMA can more effectively influence state and local governments to develop adequate emergency plans around nuclear facilities.

Additional coordination could be attained through the development of state branches of FEMA that rely upon the federal government for funding and direction. At this level a quantification of risk assessment for all hazards, including nuclear power plants, within that state should be developed and emergency planning resources allocated accordingly. The advantage of using FEMA is that it already provides many of these services, e.g. training, emergency planning, maintenance and calibration of radiological instruments, and simulated exercises.

6. Should radiological emergency response drills be a requirement? If so, under whose authority: Federal, state or local governments? To what extent should federal, state, and local governments, and licensees be required to participate?

Response: Radiological emergency response drills at the licensee's site should be conducted periodically to verify the proper functioning of emergency communications systems and procedures, and to demonstrate the proficiency of the emergency teams of the licensee and the non-licensee emergency support groups, including the state, county and local agencies which are responsible, by law, for the health and safety of the public within their legal jurisdiction. Such drills also serve to familiarize involved agencies and their personnel with the functioning and coordination required of numbers of emergency support elements working together under realistically simulated emergency situations. The licensee must maintain authority within the exclusion area at all times, including the time during which drills are being conducted. State and local agencies whose normal and legally constituted functions include emergency response to all types of incidents and accidents must retain this authority during drills as well as actual emergencies. Federal agencies should also participate in the drills at the state's request to evaluate the effectiveness of the implementation of the licensee's emergency plan and the plans of the state and local agencies as these plans relate to the licensee's emergency plan. The state must maintain the autonomy and authority in determining the extent of federal participation in the state's emergency drills. The state's requirements should be flexible enough to recognize the possibility of having more than one nuclear site within that state (i.e., it may not be necessary for the state to conduct a full-scale drill for each nuclear facility in the state).

7. How and to what extent should the public be informed, prior to any emergency, concerning emergency actions it might be called upon to take?

Response: Information on emergencies and emergency actions which may result from the operation of nuclear power plants should be provided periodically. The mechanism for providing this information to the public should be agreed upon by the state and local agencies and the licensee. It must be recognized that the exact circumstances affecting the results of any emergency which may occur are, by definition, not entirely predictable. Therefore, an emergency and how it may affect its surroundings must be determined in real-time and protective actions taken, or recommended, must be based on the real-time evaluation of the situation considering all factors involved.

8. What actions should be taken in response to the recommendations of the joint NRC/EPA Task Force Report (NUREG-0396/EPA520/1-78-016)?

Response: The AIF Committee on Reactor Licensing and Safety has previously commented on NUREG-0396 in its March 30, 1979 letter to Harold E. Collins. The analysis in this letter is still considered valid and excerpts from the letter are attached. We have considered this matter further and recommend a zonal approach to emergency planning. The first zone could be the low population zone (LPZ) as defined in 10 CFR 100. This first zone should be independent of whether or not the calculated maximum doses of an accident are less than EPA protective action guides. The emergency planning for this zone should include evacuation. The evacuation time for any angular sector in the LPZ should be based on the worst design

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basis accident, a conservative release rate with conservative meteorology. We call this emergency planning zone the "Priority 1 Zone". The emergency planning in this zone would be fully implemented in accordance with the regulations. This recommendation is consistent with current licensing and siting practice and could be implemented for each nuclear plant with the local and state agencies relatively quickly because many nuclear plants already have this type of planning.

We believe that planning should be carried beyond this Priority 1 Zone. How far beyond? The answer lies in making the emergency planning flexible such that what is done for the Priority 1 Zone could be extended radially outward using similar concepts, agencies, decisional aids, radiation monitoring network, etc. Therefore, if an emergency occurs, the conditions existing at that time will determine the extent of the actions to be taken but the planning basis itself will be as the one established for the Priority 1 Zone. The planning for this additional zone should include the identification of all shelter areas, routes and identification of special buildings. (Identification of evacuation routes to relocation centers beyond this zone should be included.) We call this zone the "Priority 2 Zone". Confirmation that capability exists to extend the planning out beyond the Priority 1 Zone into the Priority 2 Zone should be done periodically. Annual testing of the communications procedures and equipment and annual verification of resources for the Priority 2 Zone is also recommended.

The Priority 2 Zone should be based on a site and plant specific design basis analysis comparable to the site suitability analyses presently performed. Based on the results of this analysis, the maximum radial extent of the Priority 2 Zone should be such that the EPA protective action guides would not be exceeded within this distance.

9. Under what circumstances and using what criteria should a licensee notify State, local and Federal agencies of incidents, including emergencies? When, how, to what extent, and by whom should the public be notified of these incidents?

<u>Response</u>: As a minimum, events involving significant radiation releases such that the EPA's protective action guides would be exceeded should require notification.

In order to effectively respond to this question, the terms "emergency" and "incident" need to be defined. An emergency is a situation requiring activation of part or all of the plant's emergency organization. The emergency would be declared as such according to the criteria of NRC Regulatory Guide 1.101 (i.e., Personnel, Alert, Plant, Site or General). An incident would be any other unusual event causing damage or exposure to radiation to the extent specified in NRC Regulatory Guide 1.16.

The criteria for informing the state and local authorities should be defined in the state and local response plans. Basically, this should include immediate response for potential site and general emergencies.

The extent of notification for less significant events, in terms of public health and safety, would be determined by the state and local officials in a particular region. The criteria used are regional and depend on the local media and public interest, rather than the impact on public health and safety. Criteria for informing federal agencies should be the same as for state and local agencies with the additional notification requirements for incidents as specified in NRC Regulatory Guide 1.16.

Public information releases by the plant should be made expeditiously when factual information becomes available. Information should be factual and placed in perspective such that it is understandable to the general public. When speculative information is released, the likelihood of occurrence should also be specified and the information clearlyidentified as being based upon certain assumptions. The local news media should be a part of the emergency plan and should be utilized for accurate and timely communications to the public. There should be a plan for the coordination of media releases by the federal, state, local and utility officials. For long duration emergencies, joint media releases should be made from a predetermined Center with each group speaking to their area of involvement only. Such an approach would develop public confidence and responsiveness to any required action. Because of the need for timely information, local community, state, federal and licensee officials should be prepared to make such joint media releases as soon as possible.

10. How and to what extent should the concerns of the state and local governments be incorporated into federal radiological emergency response planning?

Response: Concerns, capabilities, resources, and perspectives of state and local governments are paramount, since they are the responsible authorities involved, and must be fully recognized and incorporated into any federal planning. The most direct and certain way of assuring this is to incorporate federal emergency assistance into state and local plans - not vice versa.

11. How should federal agencies interface with state and local governments and the licensee during emergencies?

Response: Certain federal agencies have developed radiological emergency response teams and equipment. This federal capability should be used to augment the state's own radiological emergency capability and should respond to state requests for assistance. The release of information on the existing radiological situation and recommendations for protective actions to be taken by the public should be very closely coordinated between the licensee, the state agency in charge, and any federal agency called in by the state to assist them. Traditionally, state authorities handle all public health and safety problems within their state, and calls for assistance from the federal government should be made when the state determines that additional resources would be desirable for handling a situation affecting the public. State authorities will always remain in charge and any decisions made affecting public safety must continue to be promulgated by these recognized authorities.

12. Should the licensee be required to provide radiological emergency response training for state and local government personnel? If so, to what extent?

Response: Training should be provided by the licensee to offsite agencies to the extent necessary to provide effective support to the plant during an emergency. This training should cover the plant's emergency plan and include a familiarization of the plant layout, the emergency organization, emergency procedures, and the role of outside agencies. To the extent that state and local government agencies and the licensee cannot provide realistic radiological emergency training, the facilities of the federal government are available. Through FEMA (the single federal agency) the coordination, organization and implementation of these training programs can be accomplished.

13. To what extent should reliance be placed on licensees for the assessment of the actual or potential consequences of an accident with regard to initiation of protective actions? To what extent should this responsibility be borne by federal, state or local governments?

Response: The licensee maintains the ability and expertise to provide assessment of the consequences of the accident. Through in-plant monitoring systems, an initial assessment of the release can quickly be made and communicated to the agency responsible for evaluating the need for protective action. Ongoing assessment of the plant's status can most readily be accomplished by the licensee.
Owing to time constraints and detailed technical knowledge of plant conditions, the licensee is in the best position to make the initial assessment (calculated and/or field

measurement) of projected doses and thus trigger protective action decisions by the local and state officials in accordance with the state's emergency plan.

As time permits, the proper expertise from the local, state, federal agencies and the licensee should be involved, as a team effort, to make continuing assessments. This team effort and its logistics should be identified in the state's plan in detail.

14. Would public participation in radiological emergency drills, including evacuation, serve a useful purpose? If so, what should be the extent of the public participation?

Response: Responsible public officials are charged with total safety concerns for the general public. They recognize that the hazards associated with the mass movement of people of all ages and physical condition, strictly for purposes of a drill, far outweigh any possible benefit which could be derived from such actions. It is also recognized that people do not want to abandon their possessions and thus expose themselves unnecessarily to the possibility of theft or vandalism.

On the other hand, some state and local emergency preparedness agencies have included in evacuation drills a limited number of public participants, on a voluntary basis, to add realism to the drill. Even in these cases, however, major emphasis was placed on exercising the mechanics and organization of the emergency plan (i.e., communications, transportation vehicles, receptor areas, medical support, lines of authority and responsibility) and not on the public participation.

We conclude that the involvement of a large segment of the general public in an evacuation for purposes of a drill would be of little value. There is presently no requirement for general public participation in evacuation drills of similar scope for other hazardous situations and there should not be a requirement for public participation in a radiological emergency practice exercise.

Excerpts from letter, John E. Ward, AIF, to Harold E. Collins, USNRC, March 30, 1979, on NUREG-0396

Philosophical Basis

It is illogical to use one spectrum of postulated accidents to design and site a facility, and a more severe spectrum of accidents for emergency planning. The Task Force states that it is not appropriate to develop plans for the most severe and most improbable "Class 9" events, yet it believes that consideration should be given to the more likely types of "Class 9" events. Thus the need to plan for the most likely of unlikely events is more than just a semantic problem, but also one of basic philosophy as to the need for developing emergency plans to cope with accidents the NRC believes are so unlikely as to not require their consideration in the design of the plant.

Until the issue of Class 9 accident considerations in nuclear power plant regulation is properly and finally resolved, we are opposed to any application of these events to an effort such as that conducted by the Task Force. We do not agree that Class 9 accident scenarios should be used by a group or groups within the NRC without an official Commission-wide determination on their use.

In any event, guidance to emergency planners that is largely based upon the low probability Class 9 events is not, in our opinion, very useful.

Perspective

NUREG-0396 implicitly applies a very conservative risk criterion to nuclear plants compared to other hazards that emergency planners have to consider. Some state and town officials have already expressed adverse comments on the need to prepare for 1 in 100,000 to 1 in 1,000,000 year accidents when their other emergency planning bases are on the 1 in 50 to 1 in 100 year event range. Planning for such extensive accident consequences will present a major if not insurmountable hurdle for the town and state agencies with their present limited resources.

The risks from nuclear plants should be integrated into comprehensive emergency planning, at the state and regional levels, and not treated individually.

Rationale

Appendix I of NUREG-0396 is entitled "Rationale for the Planning Basis." This appendix discusses four possible rationales for establishing a planning basis-risk, probability, cost effectiveness, and consequence spectrum. It then chooses to use consequence spectrum "tempered by probability considerations." It is difficult to determine how probability was used to temper the consequence spectrum considerations. It is our view that all four rationales should be considered in establishing the planning basis, and that the conclusions and recommendations would be very different if any basis other than the most conservative-consequence spectrum-were used.

Policy Conflicts and Reduced Public Protection

NUREG-0396 conflicts with the long-established safety philosophy designed to protect the health and safety of populations. This philosophy is expressed primarily through 10 CFR 50, Appendix E, and 10 CFR 100, which were designed to preclude the necessity for planning for the evacuation of population centers. NUREG-0396 recommends, albeit implicitly, that population center evacuation be considered.

Effective emergency plans require established details in many areas - assembly of emergency assistance personnel, public warning, protective action, shelter and reception area designation, etc. Each of these provisions of a plan require decisions for the most effective implementation. These decisions hinge on many factors, not the least of which is the area and population characteristics of the so-called "planning zone".

Over the years of nuclear power plant siting and emergency planning, this "planning zone" has usually been defined as that area within a facility's Low Population Zone. The LPZ's have typically been at least a factor of two in radial distance less than the Task Force recommended distance of ten miles for the plume exposure pathway. In fact, since the trend in recent years has been to reduce the size of LPZ's surrounding sites (a measure to ease site suitability demonstration from a 10 CFR 100 standpoint), there has been a steady increase of improvements in and additions to plant engineered safety features. The features improved or added to make this trend possible is a definite measure of improvement in overall public health and safety since hypothetically calculated accident doses are reduced in all areas, near and far, surrounding plant sites as safety features are augmented.

Value-Impact

A value-impact assessment, though perhaps not required for a "guidance" document, is needed and should be performed. It is our judgment that a carefully prepared value-impact assessment would clearly reveal many of the flaws in the conclusions and recommendations of NUREG-0396.