

January 31, 1983



SECY-83-44

## POLICY ISSUE

(Notation Vote)

FOR: The Commissioners

FROM: William J. Dircks  
Executive Director for Operations

SUBJECT: DEVELOPMENT OF THE SCOPE OF GUIDELINES TO FACILITATE  
RECOVERY EFFORTS IN THE EVENT OF NUCLEAR-RELATED ACCIDENTS  
AT OPERATING POWER PLANTS

PURPOSE: To present alternatives for the scope of guidelines for  
post-accident recovery, and to recommend deferment of the  
development of guidelines.

DISCUSSION: In the General Accounting Office (GAO) report issued  
August 26, 1981 titled, "Greater Commitment Needed to  
Solve Continuing Problems at Three Mile Island," the GAO  
recommended in part that the NRC develop guidelines that  
would facilitate recovery efforts by utility companies in  
the event of nuclear-related accidents at other operating  
power plants. At present, there are no existing guide-  
lines for post-accident recovery efforts at affected  
plants. Guidelines would provide the regulatory frame-  
work for post-accident recovery to alleviate the kinds of  
problems encountered during recovery efforts at Three  
Mile Island. In the Commission response (Enclosure 1) to  
Congress regarding the GAO report recommendation to  
develop such guidelines, the Commission noted that its  
staff had been directed to develop the scope of guidelines  
to facilitate recovery efforts in the event of nuclear-  
related accidents. Following the evaluation of the  
proposed scope, the Commission would make a decision  
whether to proceed with the development of the guidelines.

An initial scoping effort was recommended to the Commission  
in SECY-81-628, November 3, 1981, largely because the  
staff had reservations about the utility of a comprehensive  
and detailed set of guidelines, given the diversity of

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potential accident scenarios. What would be more useful would be broad guidelines that address the decision-making process dealing with the issues involved in post-accident recovery, together with technical criteria where appropriate. The GAO report suggests that the guidelines encompass both procedural and technical aspects of post-accident recovery.<sup>1/</sup>

The purpose of the guidelines would be to expedite sound decision-making during a post-accident recovery situation. This decision-making process may be influenced by a number of technical and legal factors, as well as public perceptions, and economic impacts. Difficult issues may arise in any of these areas, or combinations of them. While the goal of the protection of the health and safety of the public is a clear one, recovery operations may call for decisions regarding tradeoffs, for example between radiation exposure to recovery operations personnel and to the general public, or between the risk of releases that might accompany immediate recovery operations and the risk of future releases which might occur if these actions are not taken. Further, the issue of whether the risk to the public justifies exceptions to the normal environmental review process may arise. Other decisions could involve public perceptions vs. the economic burden on the utility. It is impossible to anticipate all eventualities, but the identification of general principles which would be applicable to these sorts of decisions can be achieved. For some types of decisions, the agency may already have adequate guidelines which could be integrated into the overall framework.

Certainly, the experience to date at Three Mile Island has demonstrated the value of specific criteria to apply to post-accident recovery, such as criteria for the design of recovery systems (e.g., alternate cooling systems or radwaste processing systems), and criteria for the processing, packaging, transportation, and commercial disposal of radioactive solid waste resulting from recovery activities. These criteria would be useful and should be included within the overall framework of the guidelines.

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<sup>1/</sup>A recent informal contact initiated by Mr. Cliff Gardner, GAO staff member who participated in writing the GAO report, confirmed that a broadly-scoped effort was consistent with the intent of the GAO recommendations.

These considerations lead the staff to conclude that post-accident recovery guidelines should begin with development of a broad policy statement. The policy statement would assess the applicability of existing regulations to a range of post-accident recovery conditions and identify needed changes in regulations, or suggest additional regulatory guidance where necessary. Concerns which could be immediately addressed would be: the most effective type of organizational structure to cope with the problems raised by post-accident recovery, whether or not the environmental impact statement for an operating license should address possible impacts of post-accident recovery actions, and the most effective framework for decision-making regarding the different types of waste which might be generated during post-accident recovery operations. Following the issuance of the policy statement, specific technical criteria could be developed where appropriate.

An alternative to the development of a broad policy paper together with specific technical criteria would be to restrict the scope to specific technical criteria for post-accident recovery. For this alternative, the staff has determined that the scope of post-accident recovery guidelines should include the following:

1. A description of the kinds of accidents or events for which the recovery guidelines could be implemented (e.g., an event which results in suspected cladding failure of 2% or more of the fuel rods in the core),
2. A definition of the time frame in which the guidelines should be implemented (e.g., from the time the plant is stabilized following an accident throughout the recovery),
3. The criteria for discharge of radioactive materials in liquid and gaseous effluents during recovery (e.g., utilization of existing plant radiological effluent technical specifications),

4. Criteria for the processing, packaging, transportation and commercial disposal of radioactive solid waste resulting from recovery activities (e.g., requirements of 10 CFR Part 61, 10 CFR Part 71, and applicable Department of Transportation regulations, and the guidance in Standard Review Plan 11.4),
5. Criteria, based on a generic memorandum of understanding with the Department of Energy, for the transfer of ownership of solid waste unsuitable for commercial disposal,
6. Criteria for the design of recovery systems (e.g., alternate cooling systems or radwaste processing systems),
7. Criteria for allowable occupational exposure during recovery, and
8. Development of a management structure which could respond to the licensing needs (e.g., required changes to the technical specifications) of the licensee.

The staff's estimate of the resource commitments necessary to carry out each of these alternatives is one man-year for the development of specific technical criteria, and two man-years for the development of broad guidelines plus specific technical criteria. Changes called for in regulations, would be an additional staff burden.


The staff believes that having the regulatory framework in place to properly respond in the aftermath of a severe accident would help to eliminate the potential confusion and delay which could otherwise occur in the absence of such guidance. However, it should be recognized that some of the technical considerations would be dependent upon the results of the severe accident and source term research now underway and any subsequent rulemaking. In addition, the applicability of guidelines to each and every type of accident scenario remains questionable. The staff considers the commitment of resources to this effort not justified at this time because of the impact on other staff work and because other NRC activities now underway could significantly shape the course of policy development.

The Commissioners

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RECOMMENDATION:

That the Commission note the desirability of developing post-accident recovery guidelines but defer action at this time.



William J. Dircks  
Executive Director for Operations

Enclosures:

1. Ltr. to Hon. William V. Roth, Jr.  
from Nunzio Palladino dtd. 1/26/82
2. Memo fm Denton to Minogue, with  
enclosures, dtd. 11/22/82

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Tuesday, February 15, 1983.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Tuesday, February 8, 1983, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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ENCLOSURE 1

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



CHAIRMAN

January 26, 1982

The Honorable William V. Roth, Jr.  
Chairman, Committee on Governmental  
Affairs  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

This letter responds to the recommendations made by the General Accounting Office (GAO) in its report entitled, "Greater Commitment Needed to Solve Continuing Problems at Three Mile Island."

The Nuclear Regulatory Commission, in response to the first GAO recommendation to NRC, notes that it has published a proposed rule which would require power reactor licensees to maintain the maximum amount of commercially available onsite property damage insurance. A voluntary insurance program may be available within the next several months that would cover cleanup costs for damage comparable to that suffered at Three Mile Island -- that is, about \$1 billion. If this level of coverage is not obtained through the voluntary actions of the industry, the Commission believes that such action should be mandated.

In response to the second GAO recommendation to NRC, the Commission has directed its staff to develop the scope of guidelines to facilitate recovery efforts in the event of nuclear-related accidents. After evaluating the proposed scope, the Commission will decide whether to proceed further.

Specific comments on the GAO recommendations to the NRC are presented in Enclosure 1. In addition, Commission comments relating to other findings of the GAO study are presented in Enclosure 2.

With respect to the present situation at Three Mile Island, the Commission will assure that NRC attention to TMI-2

Honorable William V. Roth, Jr. -2-

cleanup efforts remains at a high level of priority until the problem is solved.

Sincerely,



Nunzio J. Palladino

Enclosures:

1. Responses to GAO Recommendations to the NRC
2. Commission Comments on Other GAO Recommendations

cc: Sen. Thomas F. Eagleton

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(Originated by Saltzman, SP - final ltrs based on Comm. comments on SECY-81-628)



## RESPONSE TO RECOMMENDATIONS TO NRC

Item 1. GAO Recommendation: "Because another nuclear accident at an under-insured utility company could seriously affect public health and safety, we recommend that NRC closely follow the current efforts of the insurance and utility industries to increase insurance coverage to what it determines to be an acceptable level. We further recommend that no later than December 31, 1981, NRC assess the progress being made. This assessment should include an evaluation of the insurance available in the private sector and a determination as to whether a mandated insurance coverage program is necessary."

NRC Response: NRC has been and continues to monitor progress being made by the insurance and utility industries to increase insurance coverage that would pay onsite nuclear accident cleanup costs. While we expect to be able to provide an assessment of such progress, we suggest that the December 31 report due date be extended. The timing of developments and progress toward increasing this insurance coverage on a voluntary basis is dependent largely on actions in the insurance market worldwide and is not determined by NRC.

Concerned about the ability of a licensee to finance the cleanup costs resulting from a nuclear-related accident; the Commission has proposed adoption of an interim rule which would require all licensees for generating power reactors to maintain the maximum amount of commercially available onsite property damage insurance or an equivalent amount of protection. Based on what we have learned thus far from the insurers, we expect that a voluntary insurance program will be available within the next several months that would cover cleanup costs for damage comparable to that suffered at Three Mile Island -- that is, about \$1 billion. The increased capacity of the property and cleanup insurance is based to a major extent on utilities agreeing to a retrospective assessment of premiums in the event of a need for property insurance funds greater than that available from the insurers' own reserves. If capacity of some \$1 billion or more cannot be developed voluntarily, the Commission believes that the retrospective layer for such insurance should also be made mandatory and the Commission would seek legislation to accomplish this.

Item 2.

GAO Recommendation: "To mitigate future regulatory constraints on nuclear accident cleanup activities, we recommend that NRC establish a set of guidelines that would facilitate the development of recovery procedures by utility companies in the event of other nuclear reactor accidents. The preparation of the guidelines should be initially based on the lessons learned and experience gained from the TMI-2 cleanup and recovery efforts at other nuclear installations. Because a number of years may pass before another comparable accident occurs, NRC should periodically assess the adequacy of its guidelines and standards and evaluate the state-of-the-art technology for decontaminating air and water effluent produced by a nuclear accident to ensure that it can quickly respond to the needs of the regulated utility and adequately protect the public health and safety."

NRC Response: The Commission has directed the NRC staff to proceed with an effort to develop the scope of guidelines which could facilitate recovery efforts in the event of nuclear-related accidents at other operating power plants. A review of this initial effort will be made to determine whether to proceed with further development of appropriate guidelines.

## COMMENTS ON OTHER GAO RECOMMENDATIONS AND FINDINGS

The Commission supports strongly the objective of a safe and expeditious cleanup at TMI-2. To further this objective, we support the following GAO recommendations and findings involving other agencies:

Department of Energy (DOE): The Commission believes that DOE should take custody of the radioactive waste generated during the TMI-2 cleanup which is unsuitable for commercial shallow land disposal. The Department should ensure that the TMI waste is not commingled with military wastes so that the issue of NRC regulation of military wastes need not arise. The Commission also supports the current Executive Branch position that it is in the public interest for DOE to provide significant funding to be expended at TMI-2 on research and development. Also, if the DOE were to take responsibility for the removal and disposal of the entire damaged reactor core as well as the radioactive wastes, it could aid one element of the cleanup that at present contains great uncertainty. There is much to be learned from the conditions of the TMI-2 core that has safety ramifications appropriate for DOE study. Furthermore, only DOE (and its contractors) has the technical capability to carry out investigations of the TMI core.

Electric Power Research Institute (EPRI): We would support EPRI's use of utility and reactor manufacturers' funds for research and development at TMI-2. If these funds are contributed to EPRI, the industry would gain valuable insight into the effects of accidents and the behavior of reactor equipment.

Electric Utility Industry: The Commission supports the formation of a property damage insurance pool to cover the cost of cleanup and repair of nuclear plants in the event of an accident in the future. We would not object to allowing GPU to borrow from this insurance pool, with repayment to be made over a multi-year period. The recent recommendation of the Edison Electric Institute that the utility industry provide about \$190 million toward cleanup as part of the proposal advocated by Governor Thornburgh could provide another important increment in cleanup funding.

Pennsylvania, New Jersey and GPU: While recognizing that it is discussing areas within the jurisdiction of the states, as part of a cooperative effort to provide for cleanup

funding we would have no objection to measures such as allowing recovery of some portion of TMI-2 cleanup costs in the rate base.[1]

Summary: With respect to financing the costs of the TMI-2 cleanup, the Commission agrees that the options set forth by GAO represent a reasonable range of choices and that some combination of sources of funds is probably the most viable and equitable approach to take (see also the options discussed by the NRC staff in its report "Potential Impact of Licensee Default on Cleanup of TMI-2," NUREG-0689, November, 1980). However, the Commission does not recommend any specific mix of funding sources.

Irrespective of the ultimate form that TMI-2 cleanup funding takes, NRC is prepared to support expeditious actions consistent with ensuring public health and safety. Currently, we maintain professional staffs, located at both headquarters and the TMI site, who are dedicated to quick reviews of cleanup proposals made by the licensee. The Commission will ensure that this kind of NRC attention to TMI-2 cleanup efforts remains a high priority in this agency throughout the cleanup.

[1] Mr. Ahearne would also have no objection to appropriate agencies continuing to allow GPU to defer dividends on common stock. He believes that both actions would be necessary and should be strongly supported, i.e., allowing some portion of TMI-2 clean-up costs to be recovered in rates and a reduction in stockholder return to help fund the clean-up.

ENCLOSURE 2

November 22, 1982

MEMORANDUM FOR: Robert B. Minogue, Director  
Office of Nuclear Regulatory Research

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

SUBJECT: POST-ACCIDENT RECOVERY GUIDELINES

This memorandum is in response to the request from F. Arsenault to E. Case, dated October 15, 1982, for detailed written comments on the Commission Paper entitled, "Development of the Scope of Guidelines to Facilitate Recovery Efforts in the Event of Nuclear-Related Accidents at Operating Power Plants." I offer the following comments for your consideration in the paper.

The proposed paper recommends that the Commission approve the development of a broad policy statement on post-accident recovery guidelines. I cannot concur with this recommendation. The commitment of major resources to develop such a policy statement appears unwarranted. Instead, I recommend that the Commission paper be developed subject to the following comments:

The proposed paper does not present a detailed scope of specific technical criteria on post-accident recovery guidelines. The Commission directed the staff to develop the scope of guidelines in its response to Congress (Enclosure 1), and indicated that, after evaluating the proposed scope, the Commission will decide whether to proceed further. Since a draft scope of detailed guidelines has already been developed from previous efforts within NRR on this Commission paper, I recommend attaching this scope to the Commission Paper (Enclosure 2). I would also stress in the proposed paper that the development of post-accident recovery guidelines would undoubtedly involve changes to the Commission's rules and regulations (i.e., rulemaking proceedings) and that this effort would require a major commitment of staff resources. You should provide estimates (i.e., number of man-years) of the considerable resources needed for guideline development. Further, I would recommend to the Commission that those guidelines not be developed because of the impact on other staff work.

OFFICE							
NAME							
DATE							

Robert B. Minogue

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November 22, 1982

I trust that these comments will be useful to you in the formulation of your paper, and I would be glad to discuss any of the issues raised herein.

Original Signed by  
H. R. Denton

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosures: As stated

cc: F. Arsenault

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## ENCLOSURE #2

### DETAILED SCOPE OF POST-ACCIDENT RECOVERY GUIDELINES

The scope of post-accident recovery guidelines should include the following:

- (1) a description of the kinds of accidents or events for which the recovery guidelines could be implemented (e.g., an event which results in suspected cladding failure of 2% or more of the fuel rods in the core),
- (2) a definition of the time frame in which the guidelines should be implemented (e.g., from the time the plant is stabilized following an accident through-out the recovery),
- (3) the criteria for discharge of radioactive materials in liquid and gaseous effluents during recovery (e.g., utilization of existing plant radiological effluent technical specifications),
- (4) criteria for the processing, packaging, transportation and commercial disposal of radioactive solid waste resulting from recovery activities (e.g., requirements of 10 CFR Part 61, 10 CFR Part 74, and applicable Department of Transportation regulations, and the guidance in Standard Review Plan 11.4),
- (5) criteria, based on a generic memorandum of understanding with the Department of Energy, for the transfer of ownership of solid waste unsuitable for commercial disposal,
- (6) criteria for the design of recovery systems (e.g., alternate cooling systems or radwaste processing systems),
- (7) criteria for allowable occupational exposure during recovery, and
- (8) development of a management structure which could respond to the licensing needs (e.g., required changes to the technical specifications) of the licensee.