

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

EMERGENCY PLANNING: NEGATIVE DECLARATION; FINDING OF NO
SIGNIFICANT IMPACT FOR EFFECTIVE RULE CHANGES

AGENCY: U. S. Nuclear Regulatory Commission.

ACTION: Final Negative Declaration; Finding of No Significant Impact.

SUMMARY: On January 21, 1980 the Nuclear Regulatory Commission published a "Draft Negative Declaration; Finding of No Significant Impact" (45 FR 3913, January 21, 1980) for proposed changes to 10 CFR Part 50 §§50.33, 50.47, 50.54 and Appendix E that deal with emergency planning requirements for nuclear power plants (44 FR 75167, December 19, 1979). A draft Environmental Assessment accompanied the draft Negative Declaration. The comment period ended on February 18, 1980.

Sixteen sets of comments were submitted and have been analyzed (see Supplementary Information). Although all 16 commenters felt that the draft Environmental Assessment was inadequate to support the Finding of No Significant Impact, the staff analysis does not support this view. The commenters suggested that some points in the draft Environmental Assessment were in error, some required much more detailed discussion, and some points had been ignored. The errors have been corrected and do not significantly affect the earlier conclusion. The levels of detail and the omissions are generally related to the penalties associated with noncompliance with the rule. The staff originally judged that invocations of the noncompliance penalties (i.e., nuclear power plant shutdown) would be infrequent and of short duration and the associated impacts would thus be insignificant. Commenters asserted that there will be frequent and long-term

shutdowns which will have severe impacts which would require detailed consideration in an Environmental Impact Statement. The staff analysis has supported the judgment of infrequent, short-term shutdowns and thus concludes that no additional detailed studies are necessary.

Minor revisions have been made in the environmental assessment reflecting comments received but its conclusions have not been altered. Based on this assessment, a final determination has been made by the Director, Office of Standards Development, that the proposed rule changes will not have a significant impact on the human environment and, therefore, that an environmental impact statement will not be prepared for these rule changes.

DATES: The rule changes for emergency planning (FR citation) will become effective October 27, 1980.

ADDRESSES: Copies of the Final Environmental Assessment, NUREG-0685, and the comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street, N. W, Washington, D. C. and at local Public Document Rooms. Single copies of the final Environmental Assessment (NUREG-0685) are available for purchase through the NRC GPO sales program for \$4.25 (USNRC, Attention Sales Manager, Washington, D.C., 20555).

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SUPPLEMENTAL INFORMATION:

Sixteen sets of comments on the "Draft Negative Declaration; Finding of No Significant Impact" and supporting draft Environmental Assessment (DEA) for the proposed rule changes on emergency planning (10 CFR Part 50 §§50.33, 50.47,

and 50.54 and Appendix E) were received. The groups that submitted comments are identified on the Table together with their principal comments. No comments were received from State or local governments, other Federal agencies, or public interest groups.

The main point of each set of comments was that an Environmental Impact Statement should be prepared for the rule changes and that the Environmental Assessment ". . . inadequately addresses the environmental impact of the Emergency Planning Proposed Rule and the economic and social impacts on U. S. industry of long-term or permanent premature shutdowns of nuclear plants" (AEP). The comments have been reconstructed into 14 general criticisms, which have been analyzed for their relevance to the validity of the conclusions in the "Draft Negative Declaration; Finding of No Significant Impact."

One matter warrants additional mention here. An assumption was made in preparation of the DEA that shutdowns of nuclear power plants as a result of actions taken under these rule changes would be infrequent and of short duration. This assumption is critical to the decision that an Environmental Impact Statement should not be prepared. The basis for this assumption was that, since State and local authorities have the responsibility, in common with the NRC, to protect public health and safety and are concerned with meeting the energy needs of their citizens, it is likely that they will cooperate to ensure the continued safe operation or timely commencement of safe operation of nuclear generation capability within their jurisdiction. The only significant adverse reaction by the State and local governments that must bear this burden has been that complications in funding of State programs and lead time for equipment acquisition might make it difficult to completely satisfy all of the

Matrix Display of Commenters and Major Comments

Major Comments	Commenters ¹														
	AIF	Yank. At.	Com. Ed.	Con. Ed.	AEP	EEI	LLM	NU	PASNY	B&E	D & L	Duke	SPP&T	DOE	LIRA&T
1. Alternatives inadequately addressed	X	X													X
2. Impacts of shutdowns underestimated (costs)	X	S		X				Endorses EEI	Endorses EEI	X			X	X	X
3. Health effects of fossil substitution underestimated	X			X				Endorses EEI	Endorses EEI					X	X
4. Challenge assumption of infrequent, short-duration shutdowns	X	X		X	X	X	X		X				X		X
5. Judgement on State cooperation unsubstantiated	X	X	X	X	X									X	X
6. Long-term impacts not addressed	X			X	X					X					X
7. Psychological and physical risks of false alarms not evaluated	X	X								X		X		X	X
8. Use of fuel-mix improper, variation in cost of replacement power			X		X					X		X		X	
9. Significant impacts due to linkage between approval and continued operation		X		X		X	X		X						
10. Proposed rule prior to FEMA		X									X				
11. Costs too low (15 minute warning system not included)		X						X			X	X	X	X	X
12. Decisions granting exemptions or resumption of operation should be classified as categorical exclusions under Commission's NEPA regulations			X												
13. No consideration of costs to utilities											X	X			
14. No consideration of plants under construction															X

¹ Key to Commenters

AIF - Atomic Industrial Forum
 Yank. At. - Yankee Atomic Electric Co.
 Com. Ed. - Commonwealth Edison²
 Con. Ed. - Consolidated Edison Company of New York, Inc.
 AEP - American Electric Power Service Corporation
 EEI - Edison Electric Institute
 LLM - Ledoef, Lamo, Leiby & MacRae (for five utilities)
 NU - Northeast Utilities

PASNY - Power Authority of the State of New York
 B&E - Baltimore Gas and Electric
 D & L - DeBevoise & Liberman (for three utilities)
 Duke - Duke Power Company
 SPP&T - Shaw, Picman, Potts & Trowbridge (for eight utilities)
 DOE - U. S. Department of Energy
 LIRA&T - Lowenstein, Newman, Reis, Axelrod & Toll (for two utilities)

² Two letters

planning and preparedness requirements by the date set forth in the proposed rule changes. As a direct result of this, the deadline for plans and implementation has been extended to April 1, 1981, and the deadline for having warning systems in place has been extended to July 1, 1981. These extensions should be sufficient in most cases.

It should also be noted that the Commission has chosen the alternative that requires Commission action to initiate a shutdown. Conditions are specified in the regulation that the Commission will use in each case to determine whether a shutdown is warranted. When considered together, the lack of any significant adverse comment from State and local governments, the necessity for Commission action before a plant will be shut down, and the conditions for whether a shutdown is warranted, all argue convincingly that the assumption that shutdowns will be infrequent and of short duration is sound. Thus, the assumption is retained in the final Environmental Assessment (NUREG-0685) and the impacts of extended shutdowns are not considered valid impacts of these rule changes.

The 14 reconstructed general comments and a discussion of each follow:

1. Three commenters (see Table) contend that alternatives to the proposed rule changes are inadequately addressed. They specifically mention alternative ways of achieving the same end such as proposing legislation.

In view of the existing safety record of the nuclear industry and the lack of effective preparation for the TMI accident, the Commission had the following three alternatives from which to choose:

A. The Commission could take no immediate action itself while encouraging other parties, i.e., the Congress, other Federal Agencies, the States, and the utilities themselves to take effective action. This "no action" alternative would be counter to the Commission's legislative mandate

to protect public health and safety. In fact, the TMI accident was a clear indication that this "urging without requiring" emergency preparedness had proved to be ineffective. This alternative clearly could not stand in the face of the Commission's responsibility in this area.

B. The Commission is a regulatory agency and has as one of its chief tools the authority to issue regulations that bind those parties that it regulates. If an effective method for achieving protection of public health and safety is available through promulgation of regulations with specific requirements and penalties and conditions governing those requirements and penalties, this should be the proper way for the Commission to proceed.

C. If the Commission judged that danger to public health and safety was significant and imminent because of continued operation of existing plants while effective regulations are developed, it had the authority to impose immediate shutdowns until a solution could be found. The safety record of nuclear power, including the TMI accident, does not support an industry-wide judgment of imminent, significant danger. However, potential does exist for significant harm to the public in the event of a severe accident and the events at TMI suggest that plans must be made to account for this potential problem. Notwithstanding this potential, given the likelihood of an accident requiring off-site emergency protective measures, immediate industry-wide shutdown and the attendant severe long-term impacts are not warranted.

Alternatives A and C are clearly unacceptable. The discussion of alternatives in the Final Environmental Assessment has not been changed from that in the Draft Environmental Assessment.

2. Seven commenters (see Table) assert that the impacts of shutdowns are underestimated and that shutdowns of multiple unit plants or several in the same State were not considered.

The DEA was prepared with the understanding that ever increasing fuel prices make it difficult to make stable predictions of the costs of replacement power. While individual values of replacement costs may be in error, the upper end of the range of costs of replacement power, which is compared in the Environmental Assessment to the costs of compliance, is only changed by about 36% when the heat rate is changed as suggested. The response to comment eleven indicates that the costs of compliance were also underestimated. The relative comparison of these two costs was used to demonstrate the strong economic incentive that exists for all parties to strive for effective emergency planning and preparedness. The staff agrees that the net plant heat rate assumed in the DEA is low and therefore changed the assumed heat rate from 9400 Btu/kWh to 11,000 Btu/kWh. Accordingly, the cost figures have been modified in the Final Environmental Assessment; but these modifications do not alter the conclusions of the Environmental Assessment.

The question of multiple-plant shutdowns because of a common reason, i.e., an unacceptable State plan or multiple units on a site where the local plan is unacceptable, is a more difficult problem. The State plans are only a part of the overall Federal Emergency Management Agency (FEMA) program to enhance the ability of State governments to handle emergencies. The economic incentive for the utilities to help the States in every way possible should result in the preparation of plans and equipment for a nuclear plant emergency that will be a sound, significant contribution to the overall capability of a State to handle many different kinds of

emergencies. The provision of conditions that permit issuance of an operating license or continuation of operation, the extension of the compliance date and deadline for warning systems to be in place, and the record of cooperation from the States up to the present time make it unlikely that any State's program will be so deficient that shutdown of all plants in the State will be required.

The potential that an unsatisfactory local plan might result in the shutdown of all units on a specific site appears to be significantly greater. Depending on the size and number of the units involved, the incentive of the utility for aiding the local governments is also greater. The potential magnitude of the impact of shutdown in these cases is two to three times greater than for the single unit case, and this determination has been added to the Environmental Assessment. In any case, it would appear that whether these impacts, if severe enough, constitute "other compelling reasons" to permit continued operation will be determined in the individual reviews.

3. Four groups comment that health effects of fossil substitution are underestimated in the draft Environmental Assessment and that other effects are ignored.

The critical assumption in the draft and final Environmental Assessment is that shutdowns will be infrequent and of short duration. In such a case, the fossil generating capacity is simply that which is available for normal replacement power during refueling and maintenance outages and would probably be used in periods of peak demand until the utility phases it out of the generating system completely. (The impacts are thus ones that occur anyway, but at a different time. Short, infrequent shutdowns will only change the time period for suffering an impact that will

most likely be felt eventually anyway.) For such short-term replacement, no new plants will be built. The draft and final Environmental Assessment accepts these impacts as a consequence of infrequent and brief shutdowns. (A more accurate analysis might conclude that there is zero cumulative impact because the useful life of the replacement capability is unaltered.) The discussions in the Final Environmental Assessment are unaltered on this subject.

4. Nine commenters challenged the assumption that shutdowns would be infrequent and of short duration and questioned the lack of treatment of the availability of replacement capacity.

The assumption that shutdowns will be infrequent and of short duration is critical to the validity of the Environmental Assessment. At the time when the Draft Environmental Assessment was prepared, this assumption was based on the assertion that State and local governments (having in common with MRC the responsibility to protect public health and safety) will cooperate to provide fully for protection of the public. Since that time, the Commission, in cooperation with FEMA, has been working diligently to help State and local governments develop satisfactory emergency plans and programs. The response of the State and local governments has confirmed the validity of the earlier assumption. In addition, no State or local government provided any comment on the Draft Environmental Assessment, thus indicating at least tacit agreement with the basis for the assumption.

Since the basis for the assumption of infrequent shutdowns has not received substantive challenge from the parties directly involved, but there has instead been activity that tends to confirm the assumption, it will remain as a fundamental assumption of the final Environmental Assessment.

The availability of replacement capacity also hinges on this assumption. Part of the purpose of reserve capacity is replacement during plant outages. As long as shutdowns are infrequent and of short duration, they should fit into this normal pattern of utilization of replacement capacity. No additional discussions of this topic have been prepared for the final Environmental Assessment.

5. Seven commenters contend the judgment that ". . . it is likely that the States will cooperate to assure the continued safe operation or timely commencement of safe operation of nuclear generation capability within their jurisdiction" is unsubstantiated.

While this assumption was made in the absence of first-hand information, the experience of the Commission since December 1979, in attempting to work with State and local government officials, has confirmed the accuracy of this assumption.

6. Five commenters assert that impacts of long-term shutdowns are not addressed.

The assumption that shutdowns will be infrequent and of short duration defines the scope of this Environmental Assessment. As described above, long-term shutdowns are not the expected result of these rule changes. The goal of these rule changes is timely implementation of adequate emergency plans and programs. The draft and final Environmental Assessment address the impacts of this action based on the expected consequences and practical considerations of implementation of the provisions of the rule changes. No analysis of the effects of long-term shutdowns has been added to the final Environmental Assessment.

7. Six commenters contend that psychological and physical risks to the public of false alarms are not evaluated.

The Emergency Action Level Guidelines (NUREG-0610) recommend notification of the public when a "Site Emergency" has been declared. The expected frequency of an event of this type is predicted to be 1 in 100 to 1 in 5,000 per reactor per year. The high end of this range indicates that two such warnings might occur over the effective life (40 years) for every five units. The low end indicates one event over the life of 125 units. Far from causing excessive psychological and physical risks, this kind of behavior should lead to a more accurate public perception of the true incidence of risk from nuclear power facilities and a more practical and considered response to an emergency when one occurs. No change has been made in the final Environmental Assessment.

8. Five commenters assert that the use of the mix of fuels already in use in the State is a poor predictor of what would be the fuel replacement capacity for a specific plant shutdown.

A generic assessment must make some averaging assumptions or become hopelessly lost in detail. In this case, the commenters are correct that this is a "gross assumption." It is, however, sufficient to establish the range of costs for replacement power, which is the way the detailed information was used. No change has been made in the mix of fuels used to generically assess the range of costs of replacement power.

9. Five commenters observe that all of the significant impacts are due to linkage between adequacy of emergency plans and continued plant operation.

These commenters agree that the impacts of compliance are insignificant and that if there were no penalty associated with inadequate emergency preparedness then an Environmental Assessment or no Environmental Assessment

would be appropriate. The thrust of the rule is to protect the public through adequate emergency planning. The thrust of the shutdown provision is to protect the public in the event that adequate provision has not been and is not being made to provide adequate emergency planning and preparedness.

The decision of how the public should be protected has been made, i.e., either emergency planning and preparedness is adequate or a plant may be placed in a condition of safe shutdown. The State and local authorities have the responsibility to determine which option is in the best interest of their citizens. The linkage remains in the effective rule changes. No additional discussion has been provided in the final Environmental Assessment.

10. Two commenters observed that the proposed rule was issued prior to the expanded role of FEMA in emergency planning for nuclear power plants.

The NRC and FEMA are working closely to establish and carry out their respective roles in emergency planning for nuclear power plants. The effective rule has been changed to reflect this change in relationship between the two agencies. However, the substantive provisions of the rule have not changed, only the parties responsible for specific actions.

11. Seven commenters assert that the costs of implementation are too low and that there may not be enough time allowed to achieve adequacy in all areas of emergency planning and preparedness.

The draft Environmental Assessment based its estimates of cost of implementation on information contained in "Beyond Defense in Depth: Cost and Funding of State and Local Government Radiological Emergency Response Plans and Preparedness in Support of Commercial Nuclear Power Stations," NUREG-0553, October 1979. This report did not consider the costs of a

warning system that would effectively warn everyone within 10 miles within 15 minutes of the time when the decision to warn the public is made. The cost estimates in the draft Environmental Assessment thus do not include the costs of 15-minute notification. The estimates provided by the commenters have been used to revise the cost estimate in the final Environmental Assessment. It should be noted that all cost figures are approximate and are only intended to give an estimate of the normal magnitude of costs and fees associated with building and operating a nuclear power plant. Significant variations from these costs for individual cases should be expected.* These changes do not affect the earlier conclusions of the draft Environmental Assessment.

In response to comments that more time might be needed, the deadline for plans and implementation to be completed has been extended to April 1, 1981, and the deadline for installation of warning systems has been extended to July 1, 1981 to allow for procurement problems. Appropriate changes have been made in the Environmental Assessment but the earlier conclusions remain unaffected.

12. One commenter suggested that decisions on shutdowns, allowing continued operation despite inadequate plans, or the resumption of operation after a shutdown should be listed in 10 CFR Part 51 as a categorical exclusion.

The categorical exclusions in Part 51 are those Commission actions that have been judged as a class not to have any significant environmental impact and thus have been excluded from further consideration under those portions of the Commission's regulations that implement the National

*Northeast Utilities indicated costs as much as 2.5 times those quoted in the Environmental Assessment but also cited unusual complications such as large numbers of local governments that escalated their costs. Since this single estimate was not confirmed by other State or utility commenters, the values were considered beyond the usual range of costs.

Environmental Policy Act of 1969. The Commission will consider this as a comment on the ongoing rulemaking on 10 CFR Part 51 (45 FR 13739).

13. Two commenters noted that no consideration was given to the costs to the utilities of those portions of the rule changes that upgrade previous onsite requirements.

This oversight has been corrected. While these costs added a significant increment to the total cost of implementation, this total cost is still low compared to the reference costs of (1) replacement power, (2) tax and fee burden, and (3) capital investment. While several of the cost figures in the final Environmental Assessment have been revised upward, the comparison of these costs has remained unchanged and the conclusions of the Environmental Assessment are unchanged.

14. One commenter observed that there is no consideration given to plants under construction.

The cost estimates were forecast for all plants scheduled to be operating by the time the rule was to become effective. To go beyond this period would only complicate the estimates with future costs of greater uncertainty. The purpose here was to present an approximation of the relative significance of the cost impacts to determine whether a more detailed analysis is necessary. The relative magnitude of these costs is well established by the information at hand and these are clearly sufficient to support a decision without the preparation on environmental impact statement.

Dated at Bethesda, Maryland, this 6th day of August 1980.

For the Nuclear Regulatory Commission.

Robert B. Minogue
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