

DRAFT

Environmental Assessment
for
Effective Changes to 10 CFR Part 50 and
Appendix E of 10 CFR Part 50;
Emergency Planning Requirements for Nuclear Power Plants

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Office of Standards Development
U.S. Nuclear Regulatory Commission

Enclosure "I"

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Environmental Assessment
for
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Appendix E of 10 CFR Part 50;
Emergency Planning Requirements for Nuclear Power Plants

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ABSTRACT

The staff of the U.S. Nuclear Regulatory Commission has prepared an Environmental Assessment for changes to the regulations governing emergency planning requirements. Based on this assessment the Director, Office of Standards Development determined that an Environmental Impact Statement would not be prepared for the rule changes and directed that a "Negative Declaration; Finding of No Significant Impact" be prepared and published in the Federal Register. The Environmental Assessment is presented and the FRN is attached as Appendix II. (Included in Appendix II is an analysis of comments received on an earlier draft version of this Assessment (45 FR 3913, January 21, 1980).) The effective rule changes are included as Appendix III for completeness.

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1. Introduction

The Commission recently published in the Federal Register proposed amendments to 10 CFR Part 50, Sections 50.33, 50.47 and 50.54 and Appendix E (44 FR 75167, December 19, 1979). Since these amendments to the regulations governing the licensing of production and utilization facilities are substantive and may have a significant impact on the human environment, the Commission has directed that an environmental assessment should be prepared to determine whether an environmental impact statement should be developed for the rule changes. A draft Environmental Assessment (DEA) was published in the Federal Register as part of the "Draft Negative Declaration; Finding of No Significant Impact" for the proposed amendments (45 FR 3913, January 21, 1980). Comment periods for both the proposed amendments and the Draft Environmental Assessment ended on February 18, 1980. Comments were received which resulted in modifications of the amendments and the Environmental Assessment. This document (NUREG-0685) contains the final text of the Environmental Assessment and has attached as Appendix II the Federal Register notice containing the "Negative Declaration; Finding of No Significant Impact" for the effective amendments and the analysis of the comments submitted on the DEA and as Appendix III the text of the effective amendments.

2. Need for the Amendments; Rejection of the No Action Alternative

Until now regulations concerning emergency planning required the applicant for a nuclear power plant operating license to be prepared to take protective measures within the site boundary in the event of an accident. The applicant was also required to develop plans which among other things incorporate agreements and arrangements for the taking of protective measures by State and local government authorities when the consequence of an accident might extend beyond

the site boundary. Offsite participation of State and local authorities was on a voluntary basis.

Several recent studies^{1, 2, 3, 4, 5} have criticized the state of preparedness for radiological emergencies in the vicinity of operating nuclear power plants. The events which occurred at Three Mile Island confirmed some of the criticisms contained in these reports. Due to the accident at Three Mile Island, the various reports, and its own assessment of the health and safety significance of emergency planning, the Commission saw a need to act to upgrade those portions of its regulations concerning emergency planning and preparedness. This decision to upgrade the regulations was a rejection of the alternatives of taking no action or of taking more drastic action which could have an immediate, detrimental impact on the nation's energy supply (i.e., immediate shut down).

In order to rectify shortcomings in emergency preparedness the Commission decided that it was necessary to develop rule changes to the emergency planning requirements in 10 CFR Part 50.

3. The Proposed Action

In its deliberations leading to issuance of the effective Amendments, the Commission determined that emergency planning should not only be upgraded but that

¹EPA/NRC Task Force Report - "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (NUREG-0396, December 1978)

²GAO Report - "Areas Around Nuclear Facilities Should be Better Prepared for Radiological Emergencies: (EMD-78-110, March 30, 1979)

³"Report of the Siting Policy Task Force" - (NUREG-0625, August 1979)

⁴Senate Bill S. 562 - involves concurrence and adequacy of State and Local Emergency Plans. (See Congressional Record - Senate, Vol. 125, No. 95, July 16, 1979, pages S9461-S9506.)

⁵Congressional Report - "Emergency Planning Around U.S. Nuclear Power Plants: Nuclear Regulatory Commission Oversight" (House Report 96-413, August 8, 1979).

adequate emergency planning should be made a condition of license issuance and of continuation of operation. The changes make issuance of an operating license for and the continuation of operation of a nuclear power plant dependent on an NRC finding of adequacy in State and local governmental emergency plans. The changes also introduce into the regulations the use of "Emergency Planning Zones" (EPZs) as the area within which local and State authorities must have plans which the NRC has found to be adequate.⁶ The effective rule changes also require certain changes related to onsite emergency preparedness which are essentially an upgrade of existing onsite plans. The effective rule includes special consideration of those plants already licensed for operation. The content of the effective rule is constrained by the need for prompt action and the determination that it is appropriate to allow a reasonable time for the preparation and implementation of adequate emergency plans. The effective rule identifies January 1, 1981,

as the reasonable time period to allow plants now in operation to come into compliance. An additional six months is allowed for installation of warning systems.

The licensability requirement is stated as a requirement for the NRC to determine that State and local emergency response plans are adequate or for a determination by the Commission that (1) the deficiencies in the plans are not

⁶Emergency Planning Zones (EPZs) are discussed in the EPA/NRC Task Force Report (see footnote 1). In most cases they will be a circle of radius about ten miles for the plume inhalation exposure pathway and about fifty miles for the ingestion exposure pathway. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

significant for the plant in question, (2) alternative compensating actions have been or will be taken promptly, or (3) that there are other compelling reasons for continued operation. If the Commission makes a determination that the state of emergency preparedness at a site is inadequate, it then must decide whether the plant in question should be shut down or allowed to continue to operate. The notice of proposed unfavorable finding will come with sufficient warning in either case to allow an applicant or licensee to seek relief under the criteria listed above.

The requirements for a favorable finding apply only to proposed emergency plans for governmental entities wholly or partially within the Emergency Planning Zones. State and local authorities have, in common with the NRC, the responsibility to protect public health and safety. To that end the Commission is seeking the active cooperation of State and local governments in the development and implementation of upgraded plans for the protection of the public health and safety.

4. Impact of the Proposed Action

The effective rule changes state that if the identified deficiencies persist, when the deficiencies in the plan are significant for the plant in question, when compensating actions have not or will not be taken, or when there are no other compelling reasons for license issuance or continued operation, a new plant will not be allowed to begin operating or an operating plant will be required to shut down. While this is not a requirement on State and local governments, the States are concerned with meeting the energy needs of their residents. In the opinion of the NRC staff, in order to meet this need as well as that of protecting public health and safety, 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. The NRC's Office of State Programs recently published a staff study entitled "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 1979.⁷ This study sampled emergency plans and preparedness in several States which had been developed under existing regulations, some of which had NRC concurrence. The study identified a range of costs per plant to State and local governments which the data indicate depends largely on the relative differences in population distribution and radiological transport characteristics of the plant locations. Some important considerations that were found to affect cost include: exercises, communications, radiation monitoring, warning systems, emergency planning zones and local technical directors.

Typical costs for State and local government programs to achieve adequacy in radiological emergency response plans for a ten mile Emergency Planning Zone are presented in Table 1. For a State, the initial costs of planning, exercises, training and resources (communication and radiation monitoring instrumentation) typically total about \$240,000, with associated annual updating costs of about \$44,000. For local governments, the initial costs typically total about \$120,000 (four jurisdictions) with annual updating costs of about \$30,000. Thus the typical total costs to State and local governments to obtain

⁷This document has been issued by the NRC's staff and is used here only as a source for technical data on costs.

TABLE 1

TYPICAL COSTS TO STATE AND LOCAL GOVERNMENTS TO DEVELOP EMERGENCY
RESPONSE PROGRAMS WITHIN A 10 MILE EMERGENCY PLANNING ZONE*
(State with one plant)

	<u>State</u>	<u>Local</u> (4 jurisdictions)	<u>Total</u>
Plan			
Initial	\$100,000	\$40,000 (\$10,000/yr)	\$140,000
Update	\$ 10,000/yr.	\$ 4,000/yr.	\$ 14,000
Preparedness			
Exercises	\$ 20,000/yr.	\$20,000/yr.	\$ 40,000/yr.
Training			
Initial	\$ 20,000	None	\$ 20,000
Update	\$ 4,000/yr.	None	\$ 4,000/yr.
Resources			
Initial	\$100,000	\$60,000 (communications)	\$160,000
Update	\$ 10,000/yr.	\$ 6,000/yr.	\$ 16,000/yr.
Total			
Initial	\$240,000	\$120,000	\$360,000
Update	\$ 44,000/yr.	\$ 30,000/yr.	\$ 74,000/yr.

*Information taken from NUREG-0533, "Beyond Defense-In-Depth," October 1979

an NRC finding of adequacy in their emergency response plans would be about \$360,000 initial cost, plus \$74,000 in annual updating costs. NUREG-0553 did not contain estimates of the costs of installing warning systems which would have a capability of notifying within fifteen minutes everyone within ten miles that a site emergency was in progress. Estimates provided by commenters on the Draft Environmental Assessment indicate an installed cost of around \$500,000 plus a nominal yearly maintenance cost. This will bring typical costs to about \$1,000,000 per plant. Costs incurred in regard to multiple unit plants will experience lower per unit costs. Costs per unit in areas with more distinct governmental authorities involved and/or higher populations will be higher.

The upgraded onsite requirements are centered around the following improvements:

1. More detailed plans and procedures with a well defined staff and formal emergency organization.
2. Improved communication capability with backup power sources.
3. Standard emergency classification and notification schemes coupled with annual public information bulletins.
4. Improved projection capability based on real time meteorological information and ability to notify offsite officials within 15 minutes of an accident.
5. Onsite technical support center with adequate emergency facilities and equipment.
6. Facilities for onsite treatment of contaminated injured; ability to control workers radiological exposure during accidents including exposure during life saving actions by workers; and facilities for personnel decontamination.

7. Improved emergency preparedness training and formal drills, exercises, and audits to insure adequacy of the program.

The impact of these onsite improvements will vary with the existing state of preparedness at a specific site and may readily be confused with offsite costs already discussed. Initial costs are expected to be, for initially, attaining an acceptable state of emergency preparedness onsite, about one quarter to one half of the costs projected for the same process offsite. This will amount to a range of between \$250,000 for a less complicated site to about \$750,000 for a complicated site in an area of high population density.

For sites in areas of high population density, additional costs may be associated with such items as dynamic evacuation analyses and shelter surveys, and communications and warning systems. Areas experiencing high population growth rates may also experience additional costs. A likely cost to achieve a NRC favorable finding in radiological emergency response plans for a typical nuclear power plant is therefore around \$1,250,000 and is unlikely to exceed \$2,000,000 for sites with the highest population densities.

These costs of implementation may be compared to other costs incurred in the construction of a typical 1000 MWe nuclear power plant or to the tax and fee burden usual for such an installation. The capital investment in plant and equipment is on the order of \$1 billion at the present time and the State and local tax and fee structure, although quite variable, amounts to an average of about two and one-half percent of that capital investment per year or about

⁸"Coal and Nuclear: A Comparison of the Cost of Generating Baseload Electricity by Region" - (NUREG-0480, December 1978).

\$25 million per year for a \$1 billion investment.⁸ A particular exception would be publicly owned utilities such as TVA which make payments to State and local governments in lieu of taxes and also have a much lower rate structure. When compared to these investment and tax burden figures, even for the case of publicly owned utilities, the costs of implementation of the requirement for ^{an} NRC ~~FAVORABLE FINDING~~ ^{the} in State and local emergency plans within the EPZ ~~do~~ ^{does} not seem unreasonable.

Another potential major impact is that associated with shutting down those plants for which NRC does not MAKE A FAVORABLE FINDING in the State and local governmental radiological emergency response plans. An estimate for these costs is presented in Appendix I for plants which are forecast to be in operation in 1981. The estimate is based on the cost of replacement power for one month, taking into consideration the fuel mix associated with the replacement power for the State in which each plant is located. For a typical 1000 MWe power plant, these costs range from \$2.6 million/month for replacement by all coal fired capacity (Prairie Island) to \$27.9 million/month for replacement by all oil fired capacity (San Onofre). It should be noted that effects of shut-downs could be magnified several times when multiple unit plants are involved or a single governmental authority has several plants within its jurisdiction.

While the variation in replacement power cost is significant, even those plants with low replacement power costs will exceed the projected costs for implementation of adequate emergency plans if a shutdown lasts beyond a month and that the utility management will have a strong incentive to expedite the emergency planning process with every available resource.

Also associated with replacement power generated by coal or oil burning power plants will be the health effects attributable to gaseous and particulate emissions from those power plants. While it is difficult to quantify these

health effects due to variability in fuel composition, the variation in efficiency and pollution control equipment of the older units usually pressed into service for replacement power, and the lack of accurate epidemiological and other data connecting these emissions with health effects, there are definite indications that these emissions could have a significantly greater impact on public health than the emissions of the nuclear power plants which they would be replacing.^{9,10} It should be said, however, that the health effects from the coal or oil units represent a very small incremental risk to the average individual in the public. Thus, even if extended periods of shutdown occurred, the impact would be small in an absolute sense. But the proposed rule allows a reasonable opportunity to achieve compliance and the health impacts of these rule changes should therefore be insignificant.

It should be noted that the time periods and deadlines quoted in the effective rule, i.e., 180 days after publication of the final rule or January 1, 1981, whichever comes sooner and the six month extension for warning systems, have been chosen to allow reasonable time to achieve compliance or justify exemption. As a result the Commission anticipates that shut downs will be few and of short duration.

5. Summary

The Commission has decided that a need exists for a change in the rules governing consideration of emergency planning in the licensing of nuclear power

⁹"Health Evaluation of Energy Generating Sources," AMA Council on Scientific Affairs, Journal of the American Medical Association, November 10, 1978, Vol. 240, No. 20, 2193.

¹⁰"Health Effects Attributable to Coal and Nuclear Fuel Cycle Alternatives" - (NUREG-0332, September 1977).

plants. The effective changes in 44 FR 75167 and described here meet the requirements for the upgrading of emergency planning with respect to siting and design features as determinants of license issuance or continuation. The impacts (costs) of compliance are within a reasonable range when compared to capital investment costs and the State and local tax and fee burdens associated with the construction and operation of nuclear power plants. It is expected that nuclear power plant shut downs under this rule will be infrequent and of short duration and that the impacts on the human environment of the proposed rule will be insignificant. It is therefore unnecessary to prepare an environmental impact statement for the proposed rule changes.

APPENDIX I
REPLACEMENT POWER COSTS OF SHUTTING DOWN OPERATING
NUCLEAR POWER PLANTS, 1981

If a nuclear plant is ordered shut down, the power which would have been generated by the plant will be generated by another plant, if capacity is available. A cost estimate was prepared and is shown in the accompanying Table for replacement power for one month. The list of operating plants for 1981 was taken from the forecast in NUREG-0380 Oct. 19, 1979, excluding Indian Point 1 and TMI #2. It was assumed that each utility would replace the power with coal and oil fired capacity in the ratio which the state where the plant is located currently uses these fuels for steam-electric plants. It was assumed that no replacement hydro-generating capacity would be available because it would already be fully used. In addition, the availability of hydro is highly weather dependent. Supplies of coal and oil, particularly oil, are highly uncertain looking ahead to 1981, thus these fuel mixes may be altered considerably. Likewise, coal supplies could be changed substantially by strikes and severe weather.

Coal and oil costs were based on January 1979 prices from DOE. Coal costs for 1981 were increased by 15%. Oil costs (residual) were doubled over January 1979 prices. This estimate is conservative since the present price (January 1980) has already exceeded twice the January 1979 price. Neither of these assumptions are likely to be near the prices actually prevailing in 1981. Oil prices in particular are highly uncertain. It does seem reasonable however, to assume that oil prices in January 1981 will be no lower than current levels. Also, if oil prices continue rising, past experience indicates that coal prices will follow.

The weighted cost of fuel for each plant was adjusted downward by 6 mills/kWh which is the approximate savings of nuclear fuel costs by not operating the nuclear plant. No adjustment for non-fuel operating and maintenance costs was made, although average O&M costs for nuclear plants are lower than those for fossil fuel plants, especially those which would be brought into operation to replace the nuclear capacity.

It was assumed that the nuclear plants operate at an annual average 65 percent capacity factor. This will likely be higher in the early months of 1981 as utilities will be experiencing their winter peak demand for electricity. The average capacity factor will likely be lower in the spring when nuclear plants are typically shut down for refueling. The above patterns will be repeated for the summer and fall.

Given these uncertainties, especially in fuel prices, the monthly replacement costs shown in the Table should be taken only as indicators. What is clearly shown is that oil dependent areas are quite vulnerable to substantial cost increases. These are California, the entire Northeast Power Coordinating Council plus New Jersey, Florida, and Arkansas.

SHORT TERM REPLACEMENT POWER COSTS FOR NUCLEAR UTILITIES

Reliability Council	Plant	MWe (DER)*	Ratio of Coal to Oil Use		Fuel Cost ³ \$/10 ⁶ Btu		Weighted ⁴ Ave. Fuel Cost Mills/kWh	Net Fuel Costs ⁵ Mills/kWh	Replacement Power Costs \$ 1x10 ⁶ Per Mo. ⁶
			Coal	Oil	Coal	Oil			
NPCC									
N.Y.	Fitzpatrick	821	1	4	134	218	46.8	40.8	15.9
N.Y.	Ginna	470	1	4	134	218	46.8	40.8	9.1
Conn.	Haddam Neck	575	-	oil	-	245	60.4	54.4	14.9
N.Y.	Indian Point 2	873	1	4	134	218	46.8	40.8	16.9
N.Y.	Indian Point 3	965	1	4	134	218	46.8	40.8	18.7
Maine	Maine Yankee	825	-	oil	-	182	44.8	38.8	15.1
Conn.	Millstone 1	660	-	oil	-	245	60.4	54.4	17.1
Conn.	Millstone 2	870	-	oil	-	245	60.4	54.4	22.5
N.Y.	Nine Mile Point 1	620	1	4	134	218	46.8	40.8	12.0
Mass.	Pilgrim 1	655	-	oil	-	201	49.4	43.4	13.5
Vt.	Vermont Yankee 1	514	-	oil	-	201	49.4	43.4	10.6
Mass.	Yankee-Rowe	175	-	oil	-	201	49.4	43.4	3.5
N.Y.	Shoreham	854	1	4	134	218	46.8	40.8	19.8
SERC									
Ala.	Browns Ferry 1	1065	coal	-	146	-	20.7	14.7	7.5
Ala.	Browns Ferry 2	1065	coal	-	146	-	20.7	14.7	7.5
Ala.	Browns Ferry 3	1065	coal	-	146	-	20.7	14.7	7.5
N.C.	Brunswick 1	821	coal	-	143	-	20.3	14.3	5.6
N.C.	Brunswick 2	821	coal	-	143	-	20.3	14.3	5.6
Fla.	Crystal River 3	825	1	3	132	336	66.7	60.7	23.8
Ala.	Farley 1	829	coal	-	146	-	20.7	14.7	5.9
Ga.	Hatch 1	786	coal	-	132	-	18.7	12.7	4.7
Ga.	Hatch 2	786	coal	-	132	-	18.7	12.7	4.7
Va.	North Anna 1	907	2	3	161	203	39.2	33.9	14.4
S.C.	Oconee 1	887	4	1	147	186	25.8	19.8	8.4
S.C.	Oconee 2	887	4	1	147	186	25.8	19.8	8.4
S.C.	Oconee 3	887	4	1	147	186	25.8	19.8	8.4
S.C.	Robinson 2	700	4	1	147	186	25.8	19.8	6.6
Fla.	St. Lucie 1	802	1	3	132	336	66.7	60.7	23.1
Va.	Surry 1	822	2	3	161	203	39.2	33.2	12.9
Va.	Surry 2	822	2	3	161	203	39.2	33.2	12.9
Fla.	Turkey Point 3	693	1	3	132	336	66.7	60.7	20.0
Fla.	Turkey Point 4	693	1	3	132	336	66.7	60.7	20.0
Ala.	Farley 2	829	coal	-	146	-	20.7	14.7	5.9

Enclosure "1"

[7590-01]

SHORT TERM REPLACEMENT POWER COSTS FOR NUCLEAR UTILITIES (Continued)

Reliability Council	Plant	MWe (DER)*	Ratio of Coal to Oil Use		Fuel Cost ³ ¢/10 ⁶ Btu		Weighted ⁴ Ave. Fuel Cost Mills/kWh	Net Fuel Costs ⁵ Mills/kWh	Replacement Power Costs \$ 1x10 ⁶ Per Mo. ⁶
			Coal	Oil	Coal	Oil			
N.C.-McGuire 1		1180	coal	-	143	-	20.3	14.3	7.8
Tenn.-Sequoyah 1		1140	coal	-	147	-	20.7	14.7	8.0
Va.-North Anna 2		907	2	3	161	203	39.2	33.2	14.3
S.C.-Summer 1		900	4	1	147	186	25.8	19.8	8.5
ECAR									
Penn.-Beaver Valley ²		852	coal	-	137	-	19.5	13.5	5.5
Mich.-Big Rock Point		72	4	1	130	258	27.4	21.4	.7
Mich.-Cook 1		1054	4	1	130	258	27.4	21.4	10.8
Mich.-Cook 2		1100	4	1	130	258	27.4	21.4	11.2
Ohio-Davis-Besse 1		906	coal	-	137	-	19.5	13.5	5.8
Mich.-Palisades		805	4	1	130	258	27.4	21.4	8.2
MAAC									
Md.-Calvert Cliffs 1		845	1	1	150	225	38.4	32.4	13.0
Md.-Calvert Cliffs 2		845	1	1	150	225	38.4	32.4	13.0
N.J.-Oyster Creek		650	1	3	163	255	52.9	46.9	14.4
Penn.-Peach Bottom 2		1065	5	1	118	247	24.1	18.1	9.2
Penn.-Peach Bottom 3		1065	5	1	118	247	24.1	18.1	9.2
N.J.-Salem 1		1090	1	3	163	255	52.9	46.9	24.3
Penn.-Three Mile Island 1		819	5	1	118	247	24.1	18.1	7.0
Penn.-Susquehanna 1		1052	5	1	118	247	24.1	18.1	9.1
N.J.-Salem 2		1115	1	5	163	255	52.9	46.9	24.8
MAIN									
Ill.-Dresden 1		200	8	1	124	335	24.8	18.8	7.1
Ill.-Dresden 2		794	8	1	124	335	24.8	18.8	7.1
Ill.-Dresden 3		794	8	1	124	335	24.8	18.8	7.1
Wisc.-Kewaunee		535	coal	-	111	-	15.7	9.7	2.4
Wisc.-Point Beach 1		497	coal	-	111	-	15.7	9.7	2.2
Wisc.-Point Beach 2		497	coal	-	111	-	15.7	9.7	2.2
Ill.-Quad Cities 1		789	8	1	124	335	24.8	18.8	7.0
Ill.-Quad Cities 2		789	8	1	124	335	24.8	18.8	7.0
Ill.-Zion 1		1040	8	1	124	335	24.8	18.8	9.3
Ill.-Zion 2		1040	8	1	124	335	24.8	18.8	9.3

[7590-01]

Enclosure "1"

SHORT TERM REPLACEMENT POWER COSTS FOR NUCLEAR UTILITIES (Continued)

Reliability Council	Plant	MWe (DER)*	Ratio of Coal to Oil Use		Fuel Cost ³ ¢/10 ⁶ Btu		Weighted ⁴ Ave. Fuel Cost Mills/kWh	Net Fuel Costs ⁵ Mills/kWh	Replacement Power Costs \$ 1x10 ⁶ Per Mo. ⁶
			Coal	Oil	Coal	Oil			
MARCA									
	Neb.-Cooper Station	778	coal	-	100	-	14.1	8.1	3.0
	Iowa-Duane Arnold	538	coal	-	109	-	15.4	9.4	2.5
	Neb.-Fort Calhoun	457	coal	-	100	-	14.1	8.1	1.6
	Wisc. LaCrosse	50	coal	-	111	-	15.7	9.7	.2
	Minn.-Monticello	545	coal	-	80	-	11.3	5.3	1.4
	Minn.-Prairie Island 1	530	coal	-	80	-	11.3	5.3	1.4
	Minn.-Prairie Island 2	530	coal	-	80	-	11.3	5.3	1.4
SWPP									
	Ark.-Arkansas 1	850	1	5	112	202	44.1	38.1	15.2
	Ark.-Arkansas 2	912	1	5	112	202	44.1	38.1	16.2
WSSC									
	Colo.-Fort St. Vrain	330	coal	-	69	-	9.8	3.8	.5
	Calif.-Humbolt Bay	65	-	oil	-	263	64.7	58.7	1.7
	Calif.-Rancho Seco	918	-	oil	-	263	64.7	58.7	25.6
	Calif.-San Onofre 1	436	-	oil	-	263	64.7	58.7	12.2
	Ore.-Trojan ¹	1130	-	oil	-	263	64.7	58.7	31.5
	Calif.-Diablo Canyon 1	1084	-	oil	-	263	64.7	58.7	30.4
	Calif.-San Onofre 2	1140	-	oil	-	263	64.7	58.7	31.8

¹Assumed 100% oil because intertied with all oil utilities

²Used Ohio fuel and prices as plant is in ECAR

³From U.S. DOE/EIA-0075/1-(79), Monthly Report, Cost and Quality of Fuels for Electric Utility Plants, Data for January 1979, Tables 2 and 5

⁴Prices escalated to January 1981, coal increased by 15%, fuel doubled from January 1979, net plant heat rate 11,000 Btu/kWh

⁵Fossil fuel prices less nuclear fuel price of 6 mills/kWh

⁶65% plant capacity factor

*Design Electrical Rating

Enclosure "1"

[7590-01]

APPENDIX II

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 which 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 sixteen 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 frequent and long-term shutdowns would 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.

The environmental assessment has received minor revision 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 that, therefore, an environmental impact statement will not be prepared for these rule changes.

DATES: The rule changes for emergency planning (FR citation) will become effective (thirty days after the publication in the Federal Register of this Finding of No Significant Impact)_____.

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 may be obtained on request from _____ at a nominal cost to cover printing.

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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 which 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 fourteen 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

Matrix Display of Commenters and Major Comments

Major Comments	Commenters ¹														
	AIF	Yank. At.	Com. Ed.	Con. Ed.	AEP	EET	LLM	HU	PASNY	BGE	O & L	Duke	SPP&T	DOE	LNR&T
1. Alternatives inadequately addressed	X	X													X
2. Impacts of shutdowns underestimated (costs)	X			X			Endorses EET		Endorses EET	X			X	X	X
3. Health effects of fossil substitution underestimated	X			X			Endorses EET		Endorses EET					X	
4. Challenge assumption of infrequent, short-duration shutdowns	X	X		X	X	X	X		X				X	X	X
5. Judgement on State cooperation unsubstantial	X			X	X									X	X
6. Long-term impacts not addressed	X				X					X					X
7. Psychological and physical risks of false alarms not evaluated	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													
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

¹Key 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
 EET - Edison Electric Institute
 LLM - LeBoeuf, Lamb, Leiby & MacRae (for five utilities)
 HU - Northeast Utilities

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

²Two letters

that complications in funding of State programs and lead time for equipment acquisition might make it difficult to completely satisfy all of the planning and preparedness requirements by the date set forth in the proposed rule changes. As a direct result of this, the deadline for having warning systems in place has been extended for months. 6 This extension 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 that the Commission will use in each case to determine whether an exemption is warranted. When arrayed together, the lack of any significant adverse comment from State and local governments, the necessity for Commission action before a plant will be shutdown, and the conditions for granting an exemption 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 fourteen reconstructed general comments and a discussion of each follows:

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 three avenues along which it could proceed.

A. The Commission could take no immediate action itself while encouraging the 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. Indeed, 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 exemptions to 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. Potential does exist for significant harm to the public in the event of a severe accident exists and the events at TMI suggest that plans must be made to account for this potential problem. 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. Six 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 failure, i.e., 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 will 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 exemptions, the 6-month extension of the 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 decisions on adequacy of emergency plans and preparedness.

3. Three 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, no more coal will be mined or transported over the cumulative life of the fossil plant. While 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. Ten 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 rested on the assertion that State and local governments (having in common with NRC 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 which 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. Five 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. Four 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. If the trust of this rule were to shut down significant portions of the nuclear industry for extended periods of time, an Environmental Impact Statement would be necessary and a much wider range of impacts would have to receive detailed consideration. 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 proposed rule changes. No analysis of the effects of long-term shutdowns has been added to the final Environmental Assessment.

7. Five 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 one hundred and twenty-five 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 approval 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 must 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. One commenter 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. Minor changes have been made in the final Environmental Assessment, but the conclusions are unaffected.

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 will 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 a feel for the normal magnitude of

costs and fees associated with building and operating a nuclear power plant. These changes do not affect the earlier conclusions of the draft Environmental Assessment.

In response to comments that more time might be needed, the time for installation of warning systems has been extended for six months 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 the granting of exemptions or on 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 which have been judged as a class not to have any environmental impact and thus have been excluded from further considerations under those portions of the Commission's regulations which implement the National Environmental Policy Act of 1969. The Commission will consider adding this class of actions to the list of categorical exclusions.

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

This oversight has been corrected. While these costs add 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 observes that there is no consideration given to plants under construction.

The cost estimates were forecast for all plants scheduled to operating by the time the rule was to become effective. To go beyond this period would only increase error and require complete projection of all cost analyses. 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.

NUREG-_____ Staff evaluation of all public comments
received - To be provided at a later date.

ANALYSIS OF ACRS COMMENTS
(May 6, 1980)

On April 22, 1980, the ACRS Subcommittee on Site Evaluation met with the staff and reviewed the proposed rule changes. On May 1, 1980, the full ACRS met and discussed the proposed rule changes along with the staff's proposed changes in the final rule. The ACRS comments resulting from these meetings are attached as Enclosure G. The following is a listing of the ACRS comments along with a staff analysis.

ACRS Comment:

1. The Proposed Rule includes two alternative approaches for implementing the proposed changes. On the basis of clarifications provided by the NRC staff, the ACRS would endorse Alternative A. In case of problems with State and local government emergency response plans, this Alternative would require action by the NRC to shut down a plant, instead of automatically requiring shutdown under the regulations.

State Analysis:

The staff concurs with this comment and therefore has reflected the comment in the staff's proposed final rule changes.

ACRS Comment:

2. The NRC Staff notes in the Proposed Rule that "while emergency planning is important for public health and safety, the increment of risk involve(d) in permitting operation (of existing reactors) for a limited time in the absence of concurred-in plans may not be undue in every case." The Committee

agrees with this conclusion but questions whether it is compatible with the ascertain that the Commission views "emergency planning as equivalent to, rather than as secondary to, siting and design in public protection..." Safe day-to-day operation would be impossible without adequate siting and design and proper operation of a safely designed and sited reactor would probably not represent an unacceptable risk for several months and probably years.

A preferred statement would recognize that siting, design, and emergency planning, as well as responsible operation, are separate but interrelated considerations that constitute the overall safety package. It is not clear that the NRC policy of evaluating emergency planning to the same level as engineered safety features is wise or necessary. The role of emergency planning should be defined as supplemental to the decisions to allow operation of a plant.

Staff Analysis:

The staff concurs with this comment. The staff's proposed final rule changes contain the following words "adequate onsite & offsite emergency preparedness as well as proper siting & engineered design features are needed for the protection of the public health & safety."

ACRS Comment:

3. In the Foreword to NUREG-0654 (See Reference 2) emphasis is placed on there being minimum acceptance criteria for emergency preparedness and planning. There are also implications in this report and in the Proposed Rule that these criteria will be made mandatory for licensees and for the acceptability of emergency plans developed by State and local

agencies. Insistence on strict compliance with detailed criteria could prevent proper coordination of nuclear power plant emergency planning with other emergency preparedness activities of State and local agencies, and could also delay the modification of specifications for key factors, such as evacuation times and distances, as better information is developed through ongoing emergency planning.

In addition, the Committee has noted an absence of technical justification for many of the requirements associated with the Proposed Rule and the criteria by which compliance will be judged. If, in the final analysis, a decision is made to retain these criteria in the Rule, then, as a minimum, efforts should be made to test them on a range of nuclear and major non-nuclear accidents that have occurred in the past. Such tests would be particularly useful in showing how successful the specified actions would have been in alleviating the effects of the given events.

Staff Analysis:

The staff feels and the industry agreed at the May 1 ACRS meeting that placing the objectives from 0654 -- not the detailed acceptance criteria in the regulations -- is helpful and proper and significantly reduces ambiguity. The staff plans to use the detailed criteria as a reg guide is used as an acceptable way of meeting the objective.

ACRS Comment:

4. The Proposed Rule specifies that "the capability will be provided to essentially complete alerting of the public within the plume exposure pathway EPZ within 15 minutes of the notification by the licensee of local and State officials." The ACRS agrees that providing such capability is desirable but

believes that emergency plans should reflect the fact that there is less urgency for immediate notification of people living at greater distances from the site and that, in the majority of cases, the promptness of notification should have the important input of human evaluation and assessment. This might be accomplished through application of a graded scale of timing tied into distance, coupled with on-the-spot evaluations of local weather and other conditions. Supporting this approach are the results of recent research which indicate that prompt evacuation of people residing beyond five miles of a site may not be beneficial on a risk assessment basis except under the most unusual circumstances. Furthermore, there is need to consider the possible risks associated with notification of the public prior to the police and other officials being ready and available to direct and control the responses of people residing near a power plant.

Staff Analysis

The staff concurs with the overall thrust of this comment but notes that the regulation requires having a capability to notify the public, there is no requirement in the regulation how or when the State and local authorities must initiate this capability. Nonetheless, the supplemental information of the Federal Register Notice has been modified in order to expand and clarify the rationale for the 15 minute notification capability requirement and to make clear that stayed actuation of the system could be an acceptable option.

ACRS Comment:

5. The Proposed Rule and accompanying proposed criteria request that applicants provide detailed information on evacuation, including "an analysis of the time required to evacuate various sectors and distances within the

plume exposure pathway EPZ for transient and permanent populations." In no case, however, does the Proposed Rule provide information as to what times would be considered acceptable, even though, in the case of evacuation, the risks resulting from transportation accidents are often related to the hastiness of the action. As written, the Rule also appears to allow no alternative to evacuation. This implies that the applicant is not likely to be permitted to provide a better alternative, such as having the population remain indoors while the plume passes. This is a situation that reduces itself to the now familiar issue of specifying "how to" rather than providing the desired goal and allowing the licensee or State government to seek the best solution. In some locations, evacuation from the plume Emergency Planning Zone is obviously impractical. If evacuation is to be the favored emergency planning alternative, this choice and the requirements for it should be well-substantiated.

Staff Analysis:

The staff does not believe that it would be appropriate to place in the regulation "acceptable" times for evacuation. The reasoning for requiring an evacuation analysis is to provide the licensee, State and local authorities and NRC with important information as to the impediments and problem areas before an evacuation is necessary rather than these problems surfacing during an evacuation and to better define the option available to decision makers during an emergency.

In all areas of the staff's proposed regulation the word "evacuation" is accompanied with "other protective measures" therefore the staff feels that the regulation has been modified to resolve the ACRS comment.

ACRS Comment:

6. The Proposed Rule calls for "the yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information such as the possibility of nuclear accidents, the potential human health effects of such accidents and their causes, methods of notification, and the protective actions planned if an accident occurs...." Although the last two of these items appear reasonable, the ACRS suggests that the dissemination of information of the types described in the first two items cannot be expected to provide any improvements in emergency preparedness. The Committee therefore recommends that these two items be deleted.

Staff Analysis:

The staff concurs -- the staff's proposed final regulation now reads "Provisions shall be described for the yearly dissemination to the public, including the transient population, within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for (a) public notification, and the protective actions planned if an accident occurs, and basic information as to the nature and effects of radiation, as well as a listing of local broadcast stations that will be used for dissemination of information during an emergency.

ACRS Comment:

7. The Proposed Rule specifies that exercises to test the adequacy of an emergency plan should be conducted at a frequency of once every three or five years. Because of the rapid turnover in staff personnel at all levels in all the organizations involved, the ACRS recommends that such exercises be

conducted at three-year intervals. The Committee also urges that the exercises be utilized for purposes of instruction as well as for evaluations of compliance.

Although the Proposed Rule calls for licensees to provide an independent review of their emergency preparedness program every twelve months, no mention is made of participation by State and local authorities. This omission should be corrected.

Staff Analysis:

The staff's proposed final regulation has been modified to make clear that each site must conduct an annual exercise with at least local governmental officials.

The exercise with each site and the Federal, State and local governmental authorities has been specified as being required every 5 years. This will result in a frequent involvement of Federal resources.

For the second paragraph in this comment -- the proposed final regulation does require that the State and local governments and the licensee review on an annual basis the Emergency Action Levels. Their emergency plans are also reviewed during the annual exercises.

ACRS Comment:

8. One alternative in the Proposed Rule requires that corrective measures to prevent damage to onsite and offsite property be identified. The ACRS believes that protection of property is less important and less feasible than protection of health and safety and, in fact, may divert effort from

the latter aspect. The Committee recommends therefore that this requirement be omitted from the Rule.

Staff Analysis:

The staff concurs - this is reflected in the staff's proposed final regulation.

ACRS Comment:

9. As written, the Proposed Rule will require in-depth discussion and subsequent concurrence in the emergency preparedness program by the applicant and the NRC, as well as by state and local governmental authorities. The ACRS is concerned that this could constitute a third-party veto of the operation of a nuclear power plant based on considerations that may be unrelated to health and safety. The ACRS believes that such a requirement should not be included in the Rule without some safeguards against such action by a third party. Furthermore, a de facto veto power on operation appears to exist with each local government entity within ten miles of a nuclear power plant if it chooses not to permit establishment of the warning facilities required to meet the criteria. If the Proposed Rule poses such a possibility, it introduces complex societal issues. The ACRS recommends that the wording of the Rule be altered to permit the NRC sufficient flexibility to cope with this situation and not mandate such power to local governmental entities in the absence of a Federal law addressing the matter.

Staff Analysis:

The staff recognizes this potential for a third party defacto veto power. The Commission is also aware of this.

ACRS Comment:

10. The ACRS would also like to comment on the role of the Federal Emergency Management Agency (FEMA) as related to the Proposed Rule. Although the NRC Staff stated that FEMA would simply notify them of their decision relative to the adequacy of a State and local emergency plan, a nonconcurrence on the part of FEMA might also represent a "veto" action on a given application. There are also questions as to the adequacy of the resources or the staffing of FEMA to assume these new responsibilities. In addition, the ACRS sees a need for clarification of its future role relative to FEMA and to reviews of emergency preparedness planning for nuclear facilities.

Staff Analysis:

Under the proposed final rule NRC would retain this authority to make final licensing decisions after receiving the FEMA recommendation, the staff would expect, however to place significant weight on the FEMA finding.

The NRC has proposed legislative changes (ltr Ahearne to Simpson dated April 30, 1980) which would give the offsite decision entirely to FEMA. The ACRS role would decrease for offsite planning if the legislation is passed.

Required NRC (PMY) Resources for Emergency Preparedness Functions

Function	Power Reactors		Non-Power Reactors		Other (Fuels & Materials)		Comments			
	FY'80	FY'81	FY'82	FY'80	FY'81	FY'82				
A. Planning										
1. Develop Guidance/Rules for Licensee Plans	3(+2)*	2(+1/2)	2	0(+1)	1	0	3	4	2	
2. Develop Guidance for State and Local Plans	1(+1/2)	1(+1/2)	1	-	-	-	0	1	1	Identified reactor sources should be capable of supporting both reactor areas.
3. Develop and Maintain NRC Response Plans	2	2	2	0	0	0	1	1	1	
4. Assist FEMA to Develop State and Local Plans	4	4	4	-	-	-	-	-	-	NRC support will be through the Regional Advisory Committees. During '81, the effort will shift from power reactors to the other two areas, utilizing the same resources.
B. Licensing										
1. Review and Approve Licensee Plans and Integration of Onsite and Offsite Plans	21(+10)	7(+4)	9(+2)	0	3(+3)	3(+3)	1	10	10	
2. Coordinate with FEMA Reviews and Review FEMA Findings	2	2	2	0	1	1	0	1	1	

PTM
10/26/81

Function	Power Reactors			Non-Power Reactors			Other (Fuels & Materials)			Comments
	FY'80	FY'81	FY'82	FY'80	FY'81	FY'82	FY'80	FY'81	FY'82	
	C. Implementation and Testing									
1. Inspect Licensee Plan Implementation	3	22(+8)	15	1	3	3	1	6	10	
2. Prepare for and Evaluate Exercises	0(+2)	**	15	0	0	0	1	2	5	
3. Support FEMA in Providing Field Assistance and Training to State and Local Authorities	0	1	1	-	-	-	-	-	-	Indicated resources should be capable of supporting all three areas.
D. Response to Emergencies										
1. Prompt Field Response and Exercises ***										
2. Operate and Maintain NRC Operations Center	10	17	17	-	-	-	-	-	-	Indicated resources will support all three areas.
Subtotal										
Subtotal	46(+14-1/2)	58(+13)	68(+2)	1(+1)	8(+3)	7(+3)	7	25	30	Includes HQ and Regional Office Centers and HQ-24 hour duty officers.
Total ****	FY'80: 54(+15-1/2)	81: 91(+16)	82: 105(+5)							

*Numbers in parenthesis indicates contractor assistance in addition to NRC resources.

**Items C.1 and C.2 will be combined in FY'81 as evaluation teams do the first round of implementation inspection at all operating power reactors.

***Not specifically defined but it is estimated that approximately 15 man-years of effort will be expended annually in responding to incidents which dictate the manning or activation of the Operations Center in Headquarters or the Regions or in exercising the NRC response capability.

****Total does not include clerical or management resources; FY'80 total consists of 49 PMY NRR, 1E, NMSS, SD and SP (Regional) which will be expended by personnel on board and 5 MY to be expended by 10 new NRR hires over a 6 month period.

NRC UPGRADES REQUIREMENTS
FOR EMERGENCY RESPONSE PLANS

The Nuclear Regulatory Commission is amending its regulations to upgrade its requirements for emergency planning around nuclear power reactor sites and other nuclear facilities.

The "upgraded" rule contains three major changes from past practices:

1) In order for a licensee to continue operations or for an applicant to receive an operating license, the NRC must make a finding -- based on a review of an applicant or licensee's emergency plans, including State and local government emergency response plans -- that the state of onsite and offsite emergency preparedness provides reasonable assurance that appropriate protective measures can and will be taken in a radiological emergency.

2) Emergency planning considerations are extended to "emergency planning zones" -- generally out to about 10 miles for the inhalation pathway and to 50 miles for the ingestion pathway.

3) Detailed emergency planning implementing procedures for licensees and applicant's for operating license will have to be submitted for NRC review.

The NRC's findings will be based on a review of the Federal Emergency Management Agency's (FEMA) findings and determinations as to whether State and local plans are adequate and capable of being implemented and on the NRC assessment as to whether an applicant or licensee's plans are adequate and capable of being implemented.

Within 60 days of the effective date of the rule, an nuclear power reactor licensee will have to submit the radiological emergency plans of State and local governments that are wholly or partially within the inhalation pathway emergency planning zone as well as all State government plans for the ingestion pathway emergency planning zone.

For operating power reactors, the licensee, State and local emergency plans -- with the exception of a 15-minute warning requirement -- must be implemented by January 1, 1981. If, after that time, the NRC finds that the State of emergency preparedness does not provide reasonable assurance that appropriate protective measures can and will be taken in the event of a radiological emergency -- and the deficiencies are not corrected within four months of that determination -- the Commission will determine if the reactor should be shut down. The reactor will not have to be shut down after the four month period if the licensee can demonstrate to the Commission's satisfaction that the deficiencies are not significant for the plant in question, that

alternative compensating actions have been or will be taken promptly, or that there are other compelling reasons for continued operation.

Owners of research or test reactors with an authorized power level of 500 kilowatts or more will have to submit emergency plans complying with the new rule within one year of its effective date. Owners of such facilities with a power level of less than 500 kilowatts will have two years.

In addition, the rule sets forth 16 performance objectives which must be met by onsite and offsite emergency response plans. It also provides that the emergency preparedness program be tested, at least once each year, by persons who have no direct responsibility for its implementation. Federal emergency response agencies are to be involved once every five years.

The new rule, which becomes effective (75 days after Federal Register publication), reflects comments on the proposed amendments which were issued in December last year. The comments, and the staff's evaluation of them, have been compiled in a report identified as NUREG-0689. Four Regional Workshops also were held to obtain additional comments. The comments received from the workshops are contained in another report NUREG/CP-0011. Both reports are available for purchase through the National Technical Information Service, Springfield, Virginia, 22161.