Deletion to be made from Form 171 attached

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IN THE MATTER OF:

THREE MILE ISLAND
SPECIAL INTERVIEWS

POOR ORIGINAL

INTERVIEW OF MICHAEL T. JAMGOCHIAN

Place - Rockville, Maryland

Date - Monday, September 1[illegible] 1979 Pages 1 - 78

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In the Matter of: :
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THREE MILE ISLAND :
SPECIAL INTERVIEWS :
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INTERVIEW OF MICHAEL T. JAMGOCHIAN

6450 Nicholson Lane
Rockville, Maryland

Monday, September 10, 1979
9:10 a.m.

BEFORE:

THOMAS COX
WILLIAM PARLER
PAT DIXON

C O N T E N T S

INTERVIEW OF:	EXAMINATION
Michael T. Jamgochian	2

E X H I B I T S

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P R O C E E D I N G S

Whereupon,

MICHAEL T. JAMGOCHIAN

was called as a witness and, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. PARLER:

Q Please state your full name for the record.

A Michael Thomas Jamgochian.

Q You have received a letter from Mr. Rogovin? The copy I have is dated August 30, 1979. Have you received such a letter?

A Yes, sir.

MR. PARLER: I will hand you a copy of the letter, which I will mark for identification as Exhibit 1042.

(Exhibit 1042 identified.)

BY MR. PARLER:

Q Is this a photocopy of the letter sent to you by the special inquiry group concerning your deposition here today under oath?

A Yes, sir.

Q Have you read this document in full?

A Yes.

Q Do you understand the information set forth in this letter, including the general nature of the NRC TMI

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special inquiry, your right to have an attorney present here today as your representative, and the fact that the information that you provide here may eventually become public?

A Yes.

Q Is counsel representing you personally today?

A Yes.

Q And the counsel is Mr. Pat Dixon, of the office of the general counsel, Nuclear Regulatory Commission; is that correct?

MR. DIXON: Yes, that's right.

BY MR. PARLER:

Q Mr. Jamgochian, you should be aware that the testimony that you give has the same force and effect as if you were testifying in a court of law. My questions and your responses are being taken down, and they will be later transcribed. You will be given the opportunity to look at that transcript and make changes that you deem necessary.

However, to the extent that your subsequent changes are significant, those changes may be viewed as affecting your credibility. So, please be as complete and accurate as you can in responding to my questions now. If you at any point during the deposition don't understand a question, please feel free to stop and indicate that. We will make the clarification at that time.

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MR. PARLER: I will say the same thing to you, Mr. Dixon. If you want to have a clarification you have something that you want to discuss, you can so indicate, and we can either do so on the record or off the record.

BY MR. PARLER:

Q Let me warn you of two basic ground rules. One is that you permit me to finish my questions before you give me your response, even if you know what the question is going to be, because the reporter cannot take down both of us speaking at the same time. And in that regard, sometimes it may take me a little while to get the question out, so just bear with me.

Secondly, respond audibly, please. Motions, such as nodding your head, cannot be taken down by the reporter.

Now, regarding your -- the resume of your background, you've provided me with a copy of a personal qualifications statement. You provided that copy last week, as I requested. This is a document consisting of five pages of the personal qualifications statement, togetner with an enclosure -- one consisting of three pages, and enclosure two consisting of two pages, and enclosure three consisting of four pages, and an enclosure four consisting of two pages, and an enclosure five consistino of two pages.

I will mark this statement for identification as Exhibit 1043. I only have one copy of it, the copy which you

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provided. I will show you that.

(Exhibit 1043 identified.)

BY MR. PARLER:

Q That is the background statement of your qualifications which you gave me; is that correct?

A That's correct.

Q That document accurately summarizes your educational and employment background; is that correct?

A Yes.

MR. PARLER: Okay. I will give you this one. Let's go off the record.

(Discussion off the record.)

MR. PARLER: All right. On the record.

BY MR. PARLER:

Q For purposes of the record, at this point would you summarize your educational background?

A I have a bachelor of science in mechanical engineering. That's it. From Southeastern Massachusetts University.

Q In what year?

A 1965.

Q What was your employment immediately prior to joining the Nuclear Regulatory Commission staff?

A I worked for the Atomic Energy Commission, and prior to that I worked for Department of Navy, supervisor,

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shipbuilding in Newsport News, Virginia.

Q When did you join the Atomic Energy Commission staff, approximately?

A 1973.

Q What were your assigned duties at that time?

A Well, I worked for the office of standards development in the development of regulatory guides and regulations.

Q In what area?

A It was more or less a generalized general type of area. It was not very specific. After being here for a year, I sort of got specific and stayed in the area of emergency preparedness.

Q Did that happen by plan, or was it just something that happened to turn out for you, that you ended up in this area?

A About 4-1/2 years ago, emergency planning started becoming the subject that the Commission was interested in. And there was a need for somebody to develop the regulatory guide 1.101. And I had a small amount of experience in emergency planning with the Navy. So, it was just -- I was the right person at the right time.

Q Would you elaborate a little bit on the amount of emergency planning experience that you had with the Navy? Again, this is just for the background on the record.

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A Yes. I helped develop the emergency plan for nuclear accidents down in Newsport News, Virginia, for the Navy Department, as well as the shipyard.

Q Your work in the emergency planning area for the Nuclear Regulatory Commission, you say, started about four years ago. So, your involvement in the emergency planning area has been exclusively since the Nuclear Regulatory Commission was created in January 1975?

A Yes. Possibly a little overlap before then.

Q All right. Now, the standards office, was it -- the way that it was organized under the Atomic Energy Commission essentially is the same as the way that it is organized now in the area that you are -- in the area that you work in?

A Yes. Essentially, there is one individual, me, handling emergency planning work.

Q And the steps that have to be taken to get a standard out, either in the form of a regulatory guide or your regulation, are essentially the same under the NRC's approach as it was under the Atomic Energy Commission's approach?

A There have been minor changes, like value impact assessments, things like that. But basically the same.

Q And in the office of standards development, I assume that, organizationally, your function is under the

division of citing health and safeguard standards; is that correct?

A That's correct.

Q And you're in what branch?

A Site designation standards branch.

Q And that branch is headed by whom?

A Pat Samella.

Q And she reports to whom?

A Craig Roberts.

Q And Mr. Roberts reports to a division director who is Mr. Karl Goller; is that correct?

A That's correct.

Q Would you describe for the record, generally, what the responsibility, as you understand it, of the Nuclear Regulatory Commission in the area of emergency planning, starting with the area that you are familiar with and that you are directly involved in?

A In other words, the office of standards development?

Q Yes.

A All right. We proved number one, interface with all the other organizations in NRC in the emergency planning area. We provide input to all of their developmental plans as well as develop all standards, regulations, regulatory guides for the use of the Nuclear Regulatory Commission in the emergency planning area.

Q Are they responsible for emergency planning within the Nuclear Regulatory Commission? I take it it is in more than the one organization. You've stated that the office of standards development provides the service that you just described. I would assume that that service is to more than one office.

In other words, more than one office in NRC has some responsibility in the emergency planning area. Is that correct?

A Most definitely.

Q Would you comment on that a little bit? For example, for the record, indicate the responsibility as you understand it, of, for example, the office of nuclear reactor regulation and the office of states program in the emergency planning area. I realize that what these offices' responsibilites are, in fact, should best come from them.

But, standards does interface with these offices and does provide them with a service. And what I would like for you to do is for the record, to state your understanding of what these responsibilities are.

A We do provide services to all the other organizations throughout NRC. NRR reviews licenses in the emergency planning area, reviews their emergency plan as submitted at the PSAR and FSAR stage.

State programs is an interface group. They handle the

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interface with state and local governments again in the emergency planning area.

I & E reviews the emergency plan of a licensee in the field, reviews their implementing procedures, assures that the interfaces with the hospitals, local governments are existent and adequate.

NMSS reviews the emergency plans for licensees in their area. What else? Research does researching in the emergency planning area. And again, we interface with all those organizations in one way or another.

Q I gather that from an applicant and eventually a licensee's standpoint, that the applicant and the licensee has to produce an emergency plan of its own, which presumably is reviewed and approved by the office of nuclear reactor regulation. Is my understanding correct?

A That's correct.

Q And then, my understanding is that there are also other emergency plans, perhaps at the state and local level. Is that correct?

A That's correct.

Q Who reviews the state emergency plans? Who within the Nuclear Regulatory Commission reviews the states' emergency plans?

A Well, the office of state programs, when requested by the state, has some sort of mechanism where they

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review in conjunction with other federal agencies, the state and local plans around the nuclear power plant.

Q Are these plans approved or are they concurred in or do you know?

A They are concurred in. We have no right to approve emergency plans, no legislative right, of a state and local government.

Q From your perspective and responsibility, are there any relationships between -- relationships in the form of a dependency, in order -- that the licensee's plan to work -- is there any dependency between that plan or a state plan? In other words, are the two plans to intermesh in order -- in the event of an emergency for the emergency planning objectives to be satisfied?

In other words, would it come out with an overall plan that would work?

A Well, in theory, yes. The plans must be able to mesh. They must be coordinated. In reality, my own opinion is that a state does not necessarily have to have a concurred in emergency plan in order for protective measures to be taken outside of a nuclear power plant.

A licensee has an emergency plan that deals with on-site emergencies, evacuation of on-site people, protective measures of on-site people. He's then required to be able to notify and to recommend that protective measures be taken

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off site. Well, you don't have to have an elaborate concurred in state and local emergency plan in order for off-site protective measures to be taken. It's a fact of history in this country that evacuations and sheltering have been taken for many thousands of people, where emergency plans never existed.

An example to point is four or five years ago in Los Angeles, I believe 100,000 people were evacuated below a dam. There was no evacuation plan. There was no emergency plan. But, those people were evacuated within four hours.

So, it's my personal opinion that as long as the state police can do their thing, which is evacuation and as long as they're notified, there should be no problem.

Q The standards that the Nuclear Regulatory Commission has in the emergency planning area, I would assume that they are set forth both in the regulations and in regulatory guides. Now, what are the basic standards and the guides for an applicant's emergency plan?

A Well, the basic regulations located in 10 CFR Part 50.34, that refers you to 10 CFR Part 50, Appendix E, which lays out what is needed in an emergency plan, the basic elements that should exist in an emergency plan of an applicant at the FSAR and PSAR stage.

From that regulation, we then wrote Regulatory Guide 1.101, which is emergency planning for nuclear power plants.

Regulatory Guide 2.6, which is emergency planning for research reactors. And Regulatory Guide 3.14, which is emergency planning for Part 70 people.

Q The basic regulation for emergency plans for nuclear power reactors is in the Appendix E to 10 CFR Part 50, and guidance for emergency planning for nuclear power plants is in Regulatory Guide 1.101. That's what you said, right?

A That's correct.

Q The Regulatory Guide 1. 101, emergency planning for nuclear power plants revision 1, March 1977, I will mark for identification as Exhibit 1044.

(Regulatory Guide 1.101 was marked Exhibit No. 1044 for identification.)

BY MR. PARLER:

Q Where's the guidance for the adequacy of state emergency plans? Is it in these same documents or elsewhere or what?

A No, sir. It's not in the same documents. Again, understand that our regulations and our regulatory guides are addressed to applicants and licensees. The guidance that we provide to a state and local government, as was written by the office of state programs, it's new a reg 75-111.

Q In the --

A Excuse me. Off the record for a minute.

(Discussion off the record.)

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BY MR. PARLER:

Q Back on the record. In the Appendix E to Part 50, in the footnote 1 to that appendix, there is reference to a guide to the preparation of emergency plans for production and utilization facilities. Now, in what form is that guide now expressed? Is that Regulatory Guide 1.101?

A No, sir. The -- I know what it is. The Regulatory Guide 1.101 is a much broader, much more specific document than that original guide. That original guide was written right after Appendix E was written. And it amplified very little on Appendix E.

Regulatory Guide 1.101 amplifies significant legal elements existing in Appendix E.

Q The new reg 75-111, which is the office of state programs has guidance to state emergency plans, is that referenced in the Appendix E to Part 50?

A No, sir.

Q That's something completely separate from the Appendix E and from the Regulatory Guide 1.101? Is that correct?

A That's correct. I believe -- yes, it is. It's referenced in Regulatory Guide 1.101 on page 1.101-2.

Q My understanding is that the new reg 75-111 provides -- is for the purpose of providing the same kind of guidance to state governments that the Regulatory Guide 1.101

provides to applicants. In other words, both documents provide guidance but to respective or to different parties. Is that correct? Both the guidance documents?

A Both the guidance documents. But 75-111 is that checklist of basic elements. You shall have an ambulance. You shall have communications. Where Regulatory Guide 101 goes more into detail.

Q All right. Did you have the responsibility for developing the Regulatory Guide 1.101 initially?

A Yes, sir. And in conjunction with NRR.

Q How did the need for this -- for that particular project, that is, for the development of Regulatory Guide 1.101 come about? In other words, how did that project get initiated some years ago, as far as you're aware?

Excuse me. Some people have represented that prior to March the 28th, 1979, emergency planning was not given priority attention, perhaps not the attention that certainly after March 28th, 1979, that it is receiving. Apparently, sometimes in the past, that is, prior to March 28th, 1979, someone in the regulatory agency believed there was a need for further guidance to applicants beyond the guidance in the Appendix E Part 50.

What I'm asking you is to develop that a little bit for the record.

A Okay. Because there was a need to write Regulatory

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Guide 101 does not mean that the commission thought that emergency planning was a great, important subject prior to March 1979. The standard review plan was written about five years ago, which laid out how an application -- how an emergency plan is going to be reviewed.

It was felt by NRR that that standard review plan should be published in the form of a regulatory guide. I was given the task to write that regulatory guide. Regulatory guide basically tracks and follows very closely, the standard review plan.

Q So, the Regulatory Guide 1.101 is the guide which amplifies the portion of the standard review plan that deals with emergency planning. Is that correct?

A That's correct.

MR. PARLER: Mr. Cox.

BY MR. COX:

Q Do you know what organization developed and articulated that standard review plan that you're now referring to?

MR. PARLER: In its entirety or just the part that deals with the emergency planning report?

BY MR. COX:

Q The emergency planning part.

A That it was the emergency planning and security branch under Wayne Houston. It's been combined with the

accident analysis branch.

Q I think you just mentioned that your initial work on this assignment was to essentially take this part of the standard review plan and --

A Write a regulatory --

Q -- and develop it further into a guide?

A That's correct.

Q You mentioned tracking, and could you restate that? You tracked it pretty closely?

MR. PARLER: Off the record.

(Discussion off the record.)

MR. PARLER: On the record.

BY MR. COX:

Q I'm just trying to get on the record whether you felt you developed that plan as it was first existent or around the end of 1975, or whether you essentially took what already had been developed and transferred it into a guide form, regulatory guide form.

A Regulatory Guide 101 was not my child. I did not author or I did not write the entire thing from scratch. The standard review plan laid out basic things that are looked at in reviewing an emergency plan?

I took those basic things and put them in the form of a regulatory guide with further amplification, if you would.

Q In your opinion, if the lead man in the standards

division on emergency planning, did you feel that that material you'd be given to work with was a significant elaboration over what already existed in Appendix E? Or what was in the standard review plan essentially, not much more than what was in Appendix E? Which?

A No. The standard review plan was significantly much more detailed than Appendix E. Appendix E is the bare bones minimum. Then, you had that guide that was published, that's footnoted in Appendix E. That is, on a scale of 1 to 10, maybe a 2 above that bare bones minimum.

Then, the standard review plan on a scale of 1 to 10 is maybe a 6. And the Regulatory Guide is maybe an 8.

Again, adding more and more flesh to the bones, giving more and more guidance to applicants as to what we really need their emergency plan.

Q When you just referred to the regulatory guide now, you meant the first issue of the regulatory guide that you prepared after the standard review plan. Correct? Which is not the one we have just entered as an exhibit here, but it's an earlier one, isn't it?

A No. You're getting confused. There's a guide that's referenced in Appendix E. I did not write that.

Q Yes. That's the one you mentioned was about a 2?

A That's about a 2, that's right. And then, you had the standard review plan. And then you had Regulatory

Guide 101.

Q Oh. I'm referring to -- but you just mentioned as Regulatory Guide 1.1. Wasn't that an earlier issue of 1.101 than the issue we have on the table in front of us today?

A Yes. What you do is you write a regulatory guide. You put it out for comment. After comments are received, you evaluate the comments. You incorporate and change the regulatory guide as you see appropriate. And then, the regulatory guide gets issued as a revision 1.

Q Okay. Then, there was an earlier version of Regulatory Guide 1.101 that was published for public comment?

A That's correct.

Q And that didn't have any revision 1 on it. It was just revision 0, I guess?

A That's correct. I don't think it had any revision on it. It just has for comment all over the pages.

Q And when was that issued?

A I really don't know. I would say a year and a half before that. Maybe January or December of '75, maybe.

Q And that was issued for public comment?

A That's correct.

BY MR. PARLER:

Q The guidance for emergency planning which is in the standard review plan, was that guidance largely the product of some office other than the Office of Standards Development, as far as you are aware?

A Yes, sir. I believe Mr. Wayne Houston wrote that.

Q And do you find that, in your experiencing in working on the implementing guidance in the Regulatory Guide 1.101, that the basic charter in the standard review plan is what is too narrow or too broad, or has that given you any concern? In other words, the basic charter.

A Well, the basic charter is Appendix E. Now, Appendix E is very general. In fact, it's basically a good document, but it's not specific enough in the emergency planning area, even though regulations are supposed to be not specific.

I'm in the process right now of rewriting Appendix E and basically honing up the words or making more specific the wording that's existent in Appendix E. Where we perceive that there's been a problem over the last few years, especially since TMI, I am making the words that much more specific. But the basic charter, Appendix E, is fine. All you have to do is implement it properly.

The standard review plan was very well written. And that's why I followed that in writing the regulatory guide.

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I considered it a good basic document for emergency planning.

Q In the area of emergency planning, what guidance does the standard review plan have that the basic charter in the Appendix E to Part 50 does not have, generally speaking?

A Well, again, it amplifies. Appendix E says you shall have a means of notification of off-site personnel. Well, the standard review plan then says, this is what NRR is going to look for in your emergency planning, Mr. Applicant. And it says we're going to look for redundant means of communication with off-site people, redundant backup power sources.

It again amplifies. It says what they mean by adequate notification capabilities. Likewise, Appendix E talks of arrangements will be made with off-site people. Well, the standard review plan and likewise Regulatory Guide 101 goes into detail as to what are adequate arrangements. You shall make arrangements with a hospital and a backup hospital. You will make arrangements with the local police, that kind of thing. It goes into much more detail.

Q So some time several years ago, after the standard review plan was issued, there was a need to put out additional guidance in the emergency planning area. That need ultimately led to the development and the publication of the Regulatory Guide 1.101. Now, the need for standards

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to work on such a guide presumably was communicated or requested by NRR to Standards.

What I'm trying to get to is the initiating event which got you involved in working on what now has become Regulatory Guide 1.101.

A That's correct. In that NRR requested the Office of Standards Development to develop the Regulatory Guide 1.101, I believe the basic reason is that the standard review plan does not have the wide publication and acceptability that a Regulatory Guide does have.

Q All right. That request to develop the Regulatory Guide was made several years ago, is that correct?

A That's correct.

Q Now, would you please, again, to the best of your recollection, summarize some of the high spots in the work that was involved in the development of that guide from the beginning? That is, from the time that you were given the assignment to develop the guide.

A Well, as far as highlights, I can go through the usual, or the way and manner that the guide was developed.

Q Why don't you do that to the best of your recollection, because that might be of some interest to those who read this record, not only for this guide, but I would assume that the way that this guide was developed is not atypical of the way that Regulatory Guides are

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developed. Would that be correct, or do you know?

A What do you mean by "atypical"?

Q Is there a fairly routine process that is followed in the development of Regulatory Guides?

A There is a routine process. But any publication, whether it be Regulatory Guides or regulations in the emergency planning area, tend to have a great deal more difficulty in getting out, because of the politics surrounding it. It is not simply an engineering feat, as many Regulatory Guides are.

We have formulas and calculations. Emergency planning is an area where it's -- there's a great deal of political motivation and political undertones in the development of any publication that's involved in it.

Q Why don't you elaborate on that a little bit? If there is something in that -- in the areas that you mentioned that is unique to emergency planning and the way that guides or regulations are developed, I think that the record should reflect that.

A Well, the only uniqueness is that emergency planning five years ago was a very minimum effort within the Commission. And it was -- the resources delegated to emergency planning has been minimal throughout the Commission, throughout each office. And those small numbers of people were very much opinionated as to how they

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thought the emergency planning area should go.

The Office of State Programs was very strong in their feelings that state and local governments should be more and more involved in the licensing process. The Office of I&E was very concerned with not necessarily the emergency planning area per se, but the maintaining of a state of emergency preparedness, which is a very valid concern. NRR was concerned with the emergency planning as they see it in the licensing process.

The plan, as I perceived it, their interest was really not the full gamut of emergency preparedness. It was mostly the plan that they were concerned with.

Q "They" being NRR, right?

A Yes, that's correct. But again, there's always been, in the five years that I have worked on it, a great deal of political undercurrent in emergency planning. It is a field where, as I said before, there is no engineerig formulas. It is basically a matter of opinion, what will work and what won't work. Many people feel that there should be very elaborate, very detailed emergency plans in place, in case of emergency. Other people feel that that's not necessarily the point, that when you have an emergency, evacuations are not a big thing; that sheltering is not big thing that will occur.

As far as continuing on the discussion of how

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Regulatory Guide 1.101 was developed, I met many, many hours with representatives from NRR, I&E, State Programs, in the initial development of Regulatory Guide 101. After it was written, we sent it out for office review. We received office review in concurrence with minor comments, as I recall.

It was then sent to the RRRC..

Q Excuse me. You're speaking of the Regulatory Requirements Review Committee?

A That's correct.

The RRRC reviewed it and concurred that the Regulatory Guide should be implemented to all operating reactors. It was then sent to the ACRS. They reviewed it. They had comments on it. The comments were incorporated.

The document was then published for public comment. We received comments. All comments were evaluated and incorporated when we felt they should be incorporated. The document was changed in a few minor ways and then published again in its present form, Revision 1, dated March, I believe, '77.

Q For summary, the highlights certainly are responsive to my question.

You referred to political either overtones or undertones. I gather from what you're saying, it is that you were making the point that, unlike certain technical

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areas, where there may be what the people call a deterministic approach to regulation, that the area of emergency planning involves other considerations, perhaps judgmental applications or responsibilities on things such as that. Is that what you meant by these words, "political undertones"?

A That's correct.

MR. PARLER: Tom?

BY MR. COX:

Q You mentioned that the original issuance of the Reg Guide 101 occurred after RRRC approval and ACRS review. And then it was issued for comment, and then the comments received from all sources, I guess, were incoroporated in the guide. And then it was finally issued, and now I think you're referring to the March '77 Revision 1 issue.

Prior to issuing Revision 1, but after all comments had been incorporated, did the guide, once again, get reviewed by RRRC and ACRS?

A I believe not, in that there was no real significant changes made to the document since the last time the RRRC and ACRS reviewed it. So it was felt that it could just continue with publication.

Q You mentioned you believe not. You mean you're not certain?

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A That's correct.

Q Or -- that is correct, you're not certain whether it was reviewed or not?

A When it was -- whether it was reviewed a second time, that's correct.

Q All right. Wouldn't you be in a position to know? Aren't you -- wouldn't you be the lead man to issue this guide?

A I am the lead man, that's true. It was three or four years ago.

Q Oh.

BY MR. PARLER:

Q As far as you can recall at the present time, I gather that your position is that you cannot recall that it was reviewed by the Regulatory Requirements Review Committee or the ACRS when the -- after certain revisions had been made to the document. Is my understanding of what you're saying correct?

A That's correct.

Q Thanks.

Now, this effort, your effort on this guide, I believe that you have said, started out some four or so years ago. So that would be somewhere in '75 or '76, is that right?

A Yes.

Q And went through the process, and eventually, in

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March 1977, there was an approved guide that was published as an effective guide. Is that correct?

A That's correct.

Q And that guide had been presented to the Regulatory Requirements Review Committee. Did you attend the meeting of that Committee, by the way, at which the Regulatory Guide 1.101 was presented?

A Yes, sir. I made the presentation.

Q And you have said that that Committee approved the guide for, I guess, application to operating reactors; is that correct?

A That's correct.

Q Did they -- did the Regulatory Requirements Review Committee deal at all with the question of how the guide would be implemented to, say, the old operating reactors or utilities that were just about ready to get their operating reactors license, or those utilities that had, say for example, just filed their application for operating licenses?

In other words, was the question of implementation addressed by the Regulatory Requirements Review Committee at all?

A Not to the detail that you've just mentioned. They have three categories, and it was given the category -- I think it's Category 3, where it will be implemented.

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Q So, the -- as you understand it, the Regulatory Requirements Review Committee approved the guide for implementation, but to the best of your understanding and recollection, presumably, the details for how the guide would be implemented and when it would be implemented was left up to somebody else?

A Yes, sir. That's left up to, I believe, the Office of Operating Reactors in NRR.

Q Now, this was some time what, in 1977, that you presented the Regulatory -- I'm sorry -- yes, the Regulatory Requirements Review Committee?

A No. 1977, that's when the final version was published. I would say we went before the RRRC beginning of '76, something in that area.

Q Approximately at that time, whenever the -- you appeared before the Regulatory Requirements Review Committee, let's say some time in early '76, they approved your product. They approved this implementation. You subsequently, I gather, presented the guide to the Advisory Committee on Reactor Safeguards; is that correct?

A That's correct.

Q There were some revisions made and the final guide appeared in March 1977?

A That's correct.

Q Now, was the guide, to the best of your

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recollection, implemented at that time for any operating reactor in March 1977, when the guide became effective with the Revision 1? Do you recall whether it was applied to any operating reactor?

A Well, I wouldn't recall because that's not the line of work I'm in. I don't deal with whether or not it is implemented. I have since found out that it was not backfitted to any operating reactor. It has only been complied with, I think, with four reactors that have come on the line since this document has been in effect.

Q Even though you have pointed out that the question of implementing the guide is beyond your area of responsibility, are you aware of any of the circumstances, decisions either to implement the guide or not to implement the guide?

A In meetings with people that were responsible for the implementation of that guide, as well as other guides through operating reactors, I have asked that question, why this document was not backfitted as recommended by the RRRC. The people I spoke to, one individual EAD in charge of operating reactors, never gave me a good answer. He said that was a good question with a long answer, but never provided me with that.

I spoke to another individual who is the division director and asked him why this document was never

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backfitted. And he informed me that resources were just not available to backfit all Regulatory Guides that the RRRC felt should be backfitted; that the resources were just nonexistent in NRR.

Q Talking about division director, say, of the -- of operating reactors some years ago, is that what you are --

A That's correct.

Q You're talking about an assistant director for operating reactors that was in that operating reactors division some years ago?

A That's correct.

Q After March 1977, were there other major activities on your part on the emergency planning area?

A Yes, quite a few. There was a petition fo rulemaking by Public Interest Research Group. I don't recall when that petition was submitted. That took about a year and a half to evaluate. They requested that our regulations be changed in a number of areas.

Do you want me to go into detail as to what that petition requested and what we -- why we denied it, or just continue on other areas that I've worked on?

Q Well, I think that a petition for a rulemaking in an area such as this, that if the -- a petition is not deemed to be frivolous, but has some substance to it, that it would be helpful for purposes of the record, again, to

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deal to the best of your recollection, with the more significant issues raised by the petition and how they were dealt with as far as your development and understanding is concerned. I think it would be worthwhile for you to deal with those matters, if you would, please, sir.

A Okay. To the best of my recollection -- again, please understand it's been three years ago, approximately -- the petition requested a number of things. One was the dissemination of the PSAR and FSAR emergency plan to each and every household and every business organization within so many miles of every nuclear power plant. I believe it was 20 miles.

They also petitioned that an evacuation drill be performed on a yearly basis, not only with the state and local governments and the licensee, but with the public participation, full public evacuation of a certain sector. I think it was 45 degrees out to so many miles. The specifics I just cannot recall.

Likewise, they petitioned that we change Appendix E to require that details of the emergency plan should be submitted with the emergency plan for the review and approval of NRR in the licensing process. Right now, Appendix E says the emergency plan, but not the details of the plan, should be submitted. These are called the implementation procedures.

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The petition, in whole, was denied. Number one, it's not realistic to send out a PSAR or FSAR emergency plan to each and every household. It would just confuse people. It would boggle their minds.

Number two, it's -- number one, illegal; number two, unrealistic, to require public participation in an evacuation drill. In fact, it's more dangerous to have the public participating in evacuation drill than the basics of nuclear power, in my opinion.

We sent out a copy of the petition for rulemaking to all the governors of all the states and asked their opinion. And their opinions were varied on some of the elements of the petition. Some thought that dissemination of basic kinds of information would be good to the public, which we pointed out would be a good idea. But they definitely were against the public participation in evacuation drills.

Number one, who would pay for any damages that were done during the evacuation drill? Who would be liable for any robberies? Who would be liable for any accidents? These are some of the questions the governors pointed out.

My own personal opinion as to public participation in evacuation, I think it was very wrong. We should not try to have the public participating in an evacuation drill. Evacuation, as I pointed out before, in my own opinion, is not a big deal. If you look at a case in point, Seabrook,

where you have Hampton Beach located very close to it. I used to live on Hampton Beach. Hampton Beach is evacuated every Sunday within about an hour when there's a thunderstorm, just about a full evacuation.

Manhattan is just about evacuated in two hours every day, from 5:00 to 7:00 o'clock. It's not a big deal.

The petition was denied in whole. We did point out that the concept of dissemination of basic kinds of information would be a good idea in, say, a utility sending it out as part of their bill on a yearly basis; and that we would put this kind -- or evaluate this concept when we rewrite Regulatory Guide 101.

Q So that the concept of putting out the basic information with the bill, that's something that's still under review, is that correct?

A Yes, sir.

Q You said that the petition for rulemaking, that as a part of the review process the governors, what, presumably of all of the states or certainly the states in which nuclear power plants are located or were in the process of being constructed, the governors were asked to comment; and that, I gather from what you have said, that there was considerable, if not almost universal, concern expressed about some of the proposals in the petition.

Is my understanding of what you said correct?

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A That's correct.

Q Now, the petition I gather that you've been talking about, is discussed in the staff paper that is identified as SECY, S-E-C-Y, 77-263, of May 25th, 1977. That's the petition that you've been talking about?

A That's correct.

MR. PARLER: As far as -- for identification purposes for this record, I'll mark this paper, which I would assume is a public document, in any event, for identification as Exhibit 1045.

(Exhibit No. 1045 identified.)

BY MR. PARLER:

Q In addition to the petition for rulemaking that you've just been talking about, which is one of the major activities in the emergency planning area that you were engaged in subsequent to March 1977, would you continue, please, with some of the others?

A I've dealt with -- I've been a member of the EPA-NRC Task Force which have just issued their report. It's NUREG-0396, and that dealt with guidance to state and local governments as to the magnitude of the accident that they should plan for. We deliberated for, I think, two years on that task force.

Likewise, I was involved with a rule change to Appendix E as a result of the Seabrook decision, which talked about

emergency planning outside of the LPZ. That rulemaking took approximately a year and a half.

I was also involved with the development of a rule change concerning the maintaining of emergency plans up to date and requiring research reactors to have emergency plans.

Q Was this rule change prior to -- the rule change regarding the maintenance of emergency plans up to date, was that something initiated prior to or after March 28th, 1979?

A Oh, way before, at least a year and a half, two years before.

Q Now, those are the major areas, because I want to ask you some questions about at least some of them?

A Yes, I believe that's it.

Off the record for a minute.

Q Right.

(Discussion off the record.)

BY MR. PARLER:

Q We were talking about major projects in the emergency planning area that you were involved in subsequent to the issuance of Regulatory Guide 1.101 in March '77 up to March 28, 1979. You mentioned three of them, the NRC-EPA Task Force on emergency planning, the results of which is reflected in NUREG-0396; the effort regarding the emergency planning outside of the low population zone, that was involved in the Seabrook proceeding; and also a rule change

for maintaining emergency plans.

Do you have any other major projects that you want to add to those three?

A Yes. Since TMI, Mr. Gossick organized an emergency -- another emergency planning task force, of which I was a member. That task force just recently sent their report to the Commission, which laid out a number of issues and problem areas in the emergency planning area, with various offices -- with various office action plans as to how to resolve and solve those problems and issues.

Also attached to that was a proposed rewrite of 50.33, 50.54, and all of Appendix E. The proposed rewrite was done by myself in cooperation with other offices or with counsel of other offices. And we've requested that the Commission give us guidance on those proposed rule changes.

I have since written a staff paper that should leave the Office of Standards Development for office review and concurrence by the end of this week.

Q Okay. The project that you just mentioned, that is, the project that is -- that was headed by Mr. Carter of NMSS, is that correct?

A That's correct.

Q You don't happen to recall the staff paper reference, do you, for the report to the Commission?

A No.

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Q All right.

A I can get that for you.

MR. PARLER: Off the record for just a second.

(Discussion off the record.)

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MR. PARLER: Back on the record.

BY MR. PARLER:

Q You've checked and I understand that the report of the emergency planning task force that you mentioned is SECY paper, that's SECY-79-499. Is that right?

A That's correct.

Q On the NRC/EPA study that you were involved in, that effort, is approximately when?

A Three years ago.

Q What prompted that study, do you recall?

A Yes, a number of state people were writing to NRC and EPA at the same time, asking questions as to what would -- what kind of accidents should they base their emergency planning on. In the replies that came back, NRC wrote one thing and EPA wrote another thing. And there was obvious conflict. The individual from the state that got both answers then sent a copy to the other organization. In other words, he sent NRC EPA's reply and sent EPA NRC's letter. And both agencies looked ridiculous.

So therefore, Mr. Gossick formed an EPA/NRC task force, which was supposed to lay out and tell the states what kind of accident they should plan for. Now, the report ended up not laying out the kind of accident but basically laid out the distances, the source term and the times that should be planned for on an emergency. And this is where you come up

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-- where we came up with the concept of an emergency planning zone, which is approximately 10 miles radius around each nuclear power plant.

Q So, this effort was initiated, as far as you're aware, by the NRC; is that right? By Mr. Gossick of NRC?

A That's correct.

Q And approximately when was the report of the NRC/EPA effort issued? That is, the NUREG-0396?

A I believe that was published for comment the end of last year after TMI. We extended that comment period. And we published it just recently, I believe, in final form.

Q Has --

A And a report has been sent to the Commission with a policy statement. The Commission has yet done nothing with that proposed policy statement, which basically enforces the EPA/NRC task force report.

Q That report that was sent to the Commission with the policy statement was forwarded on March 26, 1979, in the form of a staff paper, as far as you believe?

A Yes, I believe so. Two months, I think.

Q Would that be SECY-79-367, as far as you know?

A I don't know.

Q That we can check on. Was the NRC/EPA report consolidated with the Carter -- that is Thomas Carter task force on emergency planning, or was that effort, as far as

you're aware, handled as a separate and independent effort?

A Completely different. The Carter task force was a result of TMI. Correct. Ultimately from TMI. The EPA/NRC task force was something the states had been yelling about and they just needed guidance.

Q The General Accounting Office, as I recall, some time after March 28, 1979, issued a report, I believe, on the adequacy of emergency planning. Are you familiar with that report?

A Yes, sir. I reviewed it.

Q For purposes of the record, the report is entitled Areas Around Nuclear Facilities Should Be Better Prepared for Radiological Emergencies. The reference is EMD-78-11(March 30, 1979). You say you reviewed that GAO report?

A Yes, sir.

Q What were your major conclusions or views on that report, to the extent that you can recall them now? I would assume that that report dealt with basically the same kinds of issues that the EPA/NRC task force dealt with. Is my understanding correct?

A No, that report for one, endorsed the EPA/NRC task force report. The GAO report looked at emergency planning in a critical light and simply said it needs improvement.

Q Okay. Now in that context, what do you recall

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were the -- your major views or comments on the GAO report?

A The GAO report, I felt was not done with very much insight. It was as if somebody that knew nothing about emergency planning decided to look at it and to spend a couple of months looking at the area and came away with -- well, it needs improvement. It doesn't take a great deal of intelligence to come away with a comment, Well, something needs improvement.

They said that their recommendation was that more information should be given out to the public. They also recommended that the EPA/NRC 10 mile emergency planning zone be adopted. The other recommendations, I don't recall.

But, the insight -- there was a great deal of insight that was lacking in that report.

Q Back to the EPA/NRC task force and its report. Did somebody from NRC also represent the NRC on that task force?

A Yes.

Q Who was that?

A Brian Grimes was the co-chairman along with Harold Collins, who was from state programs, Jim Martin, who is from the accident analysis branch under Wayne Houston, was a member of the task force.

Q Who was the chairman of the task force or the other four chairmen?

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A Harold Collins and Brian Grimes were the co-chairmen.

Q I see. So, both of the co-chairmen came from NRC?

A No, Harold Collins came from state programs.

Q From the Nuclear Regulatory Commission and not from the Environmental Protection Administration?

A Yes, I'm sorry. Yes.

Q Do you have any other comments to make about the EPA/NRC study, what happened to it or anything else about the study? Some have elsewhere represented that that study was ignored by some or at least did not receive the attention which some believe that it deserved, and that instead a fresh effort was initiated in the emergency planning area in the form of still another task force.

You don't have to agree, of course, with these representations, but in that context do you have any comments at all that you would like to make, or --

A No. I believe that's absolutely false. I don't think that that statement is correct, that the EPA/NRC task force report has been ignored. Right now NRR is in the process of telling licensees that they shall arrange for emergency planning outside -- out to 10 miles. I have also written a rule change to incorporate the 10 miles or LPZ concept. It has not been ignored.

The Commission has not acted on that, but it takes a

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while for the Commission to act on anything.

Q But there is a paper that has been given to the Commission with this rule change; is that correct?

A That's true. There are some that were on the task force that felt that the Commission should jump and act immediately on anything that was produced. And that's unrealistic, but I believe or I feel strongly that that was not ignored.

Q There are some on the task force, you are referring to the EPA/NRC task force, is that correct?

A That's correct.

Q In rule change to the part 50, including 50.33 and the appendix C which you have testified is in a staff paper which has been sent to the Commission, are the changes that are in that paper the same or substantially the same as in this document which you provided to me earlier?

A The document I provided to you is a first cut and this was sent to the Commission as part of the Tom Carter emergency planning task force report. That is undergoing changes and I am writing the changes right now. But it is basically the same.

MR. PARLER: We'll mark this document, which is a draft, Mr. Jamgochian's proposed changes to emergency planning regulations, which has those words at the top, along with 10 CFR 50, section 50.33. Mark that for

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identification as Exhibit 1046.

(Commission Exhibit 1046 identified.)

BY MR. PARLER:

Q The final version of that, it's my understanding, is either now reflected in a staff paper or will be reflected in a staff paper just for the interest of clarity of the record?

A The staff paper is being typed today.

MR. PARLER: Being typed, okay. Go off the record for a second.

(Discussion off the record.)

MR. PARLER: Go back on the record.

BY MR. PARLER:

Q My understanding is that the rule changes in Exhibit 1046 are the rule changes that were included in the Carter task force report to the Commission in SECY-79-499. Is that correct?

A That's correct.

Q Moving to another of the emergency planning areas in which you have devoted some of your efforts, the expansion of emergency planning outside of the low population zone, initially, I recall came up in a consolidated proceeding involving the Seabrook facility and I guess the New England Coalition Against Nuclear Power. In any event, in a proceeding that involved a decision by the

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Nuclear Regulatory Commission's Atomic Licensing and Safety Appeal Board -- well, first of all, is my understanding of the origin of that issue correct?

A Yes.

Q Now, what are the significant parts of the background there after the appeal board rendered its decision? Presumably the Commission also rendered a decision and a rulemaking effort was initiated. Now, is that correct?

A That's correct.

Q All right. Now, starting with the initiation of the rulemaking effort, would you tell us for the record what your major involvement was in that effort?

A Well, basically, let me give you background as to what the appeals board wanted, what the staff wanted and what the licensee wanted.

Q I think that would be very helpful.

A The staff wanted to look outside of the LPZ in requiring emergency plans for the -- for Hampton Beach.

Q Incidentally, for the record, LPZ means low population zone, which is term used in the Commission's siting guides in 10 CFR 100. Excuse me for interrupting. Go ahead.

A The licensee felt that our regulations limited emergency planning considerations just out to the LPZ. The

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appeals board heard the case and agreed with the licensee that we cannot look outside of the LPZ for emergency planning considerations. The staff had, in the past, always felt that we had a right, and in fact did look outside of the LPZ.

So, when the appeals board said you can no longer do that, the Commission then said, We will go expeditiously to rulemaking as a matter of high priority, therefore, to change the rule so that we can continue our practice of looking outside of the LPZ for emergency planning considerations. That rulemaking took a year and a half.

Essentially, we added two sentences to 10 CFR 50, appendix E, which says if we want to, we will look outside. And if we look outside and feel the need is there, we will require the licensee to make emergency planning arrangements for that area of concern.

Q Has there anything that you encountered that you now recall specifically contributed to the year and a half or a time needed to carry out what the Commission wanted carried out as a -- what? Expeditious effort or --

A Well again, in the emergency planning area, you have a problem with the politics in that you have got to understand, the larger the distance for emergency planning, the more people required, the more of a plan and the more potential for empire-building. So, there are organizations

that would like as large an area as possible, in order to build a bigger empire. There are organizations here that feel that if it's a class nine accident, it should be considered in an emergency planning. There are other groups that do not feel class nine accidents should be considered in emergency plans.

Again, it deals with one, the politics of building empires; number two, the actual beliefs of what is adequate in emergency planning. So, within the two you have a non-responsive mode in that you just have a lot of argumentation and a lot of disputes between the various offices. And you come away with a great deal of frustration and a great deal of time wasted.

Q This that you have just been commenting on is, I gather, within the NRC offices within the NRC; is that correct?

A That's correct.

Q I gather that as far as you're aware, that there would not appear to be any readily available place within the organization that disputes the kind that you have been talking about, can be taken so that they would be readily resolved one way or the other and so that as a result of such resolution you would have the necessary policy guidance that you need to get on with your work and prepare the documents that are required to make the change in the

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regulation; is that right?

A There is no place in the organizations where interoffice disputes like that can be resolved. What I have tried to do in any of my work is meet with all the organizations, understand -- receive and understand all their viewpoints and write the staff paper and write the regulation as I see it as an individual and as I believe my office director would want the regulation to go.

Now, many times what we come away with is something that NRR doesn't like or state programs don't like or I&E doesn't like. If not one, all of them may not like it. But, I feel that we don't play that power struggle game and we try and stay in the middle of the road, if you would, when we're developing the regulations and the staff papers surrounding it. And if the various offices don't like what I write, they can put a dissenting opinion or a letter saying why they don't like what I've written. And we can attach it to the letter that goes to the Commission.

But, to try and get a concensus is just about impossible in the emergency plan area now.

Q But nevertheless, I would assume that there is some considerable time that has to be devoted during the evolutionary stages of a regulatory change to try to find out what the various office positions are. And after, as you have described, you write what you think the approach

should be, that there is, I suppose, a considerable amount of time that is taken in the concurrence process. Is that right?

A That's correct.

Q Are the offices that you look to for guidance, all the -- or just the offices that are under the Executive Director for Operations, or do you also receive comments and guidance from the Commission's offices such as the Office of Policy Evaluation and the Office of the General Counsel?

A Yes. We do get comments and input and we do have interface with OGC and OPE.

Q Do you have comments from OPE, that is, the Office of Policy Evaluation, at an early stage in the developmental process of the regulation that you are talking about?

A On that particular regulation for the Seabrook case, yes. I worked with the EPA and OGC in an early time.

Q The class nine accident which you referred to earlier, which could at least in the area that we're talking about, that is, emergency planning, have an effect on the role of various offices within the Commission that, again for clarification of the record, is an accident -- what? Beyond the design basis accident?

A Yes, sir.

Q In other words, a big accident which could result in consequences off of the site which would go beyond those

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consequences which one could reasonably expect for a design basis accident?

A Right, that is correct.

Q Has this two-sentence regulation in Seabrook regarding the expansion of the low population zone been published as an effective regulation yet?

A No, sir. It's been published as a proposed regulation. I don't intend to go forward with an effective regulation because I am rewriting all of appendix E to incorporate the emergency planning zone concept, which would put it out to 10 miles anyway.

Q Incidentally, what sort of comments did you get on the proposed rule to expand the low population zone? Not everyone, but for example, earlier in connection with the -- a petition for rulemaking, you mentioned that the governors of states took a particular position, as I understand it, against some of the fundamental concepts in that, which is a different petition for rulemaking.

Do you recall anything similar to that in connection with the proposed rulemaking that was initiated by the NRC to expand the emergency planning outside of the low population zone?

A We received approximately 300 comments on that rule change. Most -- many of the utility comments were typical utility comments that said, Oh, you're going too

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far. Many of the public interest concerns said we weren't going far enough. And many of the public comments didn't understand the rule.

Q You mean by public --

A Just the general type public comments.

Q How about from responsible officials of the state and local government?

A The overall thrust of all the comments received was that the rule change was very, very -- too general and not specific. It simply said we would look outside of the LPZ for emergency planning considerations. Many of the people that commented said, How far outside of the LPZ? Five miles, 10 miles, 30 miles?

We received a comment from a public official that said, Well, this rule change is great. Now the utility will have to plan for the evacuation of Colorado -- I think it was 74 miles away from the plant -- not Colorado, Denver, which was approximately 74, 75 miles from the plant. In other words, the rule was very non-specific, very much too general and it led to a great deal of poor interpretation.

Q Okay. How about another rule change that you mentioned regarding the maintenance of emergency plans? First of all, what did that rule entail, the maintenance of the plants themselves or the maintenance of the plans themselves or the maintenance of things such as equipment

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called for by the plans?

My recollection of the record in that regard is that maybe it might not be as clear as it should be, what this particular rule change covers. I am moving on to a new rule change now, the one that you mentioned earlier which you generally described as maintaining, I believe, emergency plans.

What does that entail?

A That rule change was identified by I&E about 2-1/2 years ago.

Q That's Inspection Enforcement?

A They pointed out that, number one, that research reactors, most of which that were licensed prior to 1971, are not required to have emergency plans. They felt that this was a poor situation to be in.

Number two, it was pointed out that an emergency plan as submitted with the FSAR is reviewed by licensing, NRR, and once NRR gives a blessing to the emergency plan it is usually simply put in a drawer and never again looked at. And from then on, the utility uses their implementing procedures. Now, the implementing procedures gives the details of what to do in the emergency, who to call, what to do. Well, these implementing procedures are never reviewed and approved by NRR. They are looked at by I&E on, maybe and annual basis.

Well, it's felt that if a licensee decided to change elements in the emergency plan such as, say, in the emergency plan they said they would have a decontamination facility on-site, well, three years after the plan has been approved, say, they change that decontamination facility into a storage facility? The inspector has nothing to cite him against because the plan was approved.

It's not required to be maintained up-to-date. Likewise, if in the plan they say, All right, here is our notification criteria for off-site officials, and during the life of the plant they change that notification criteria, they don't have to send it back to NRR and they don't have to get our approval and NRR is more or less left in the dark.

It was felt, then, that a rule change to accomplish these things, one, to make a research reactor have emergency plans reviewed and approved by NRR and two, to have emergency plans maintained up to date as well as their implementing procedures.

We initiated rulemaking proceedings about 2-1/2 years ago in this light. Now, one of the big problems with that job, in fact, it was just -- it will be published in the Federal Register this week, the proposed rule, is our inability, the system's inability to be responsive to the concerns of I&E. Here, I&E surfaced a problem. NRR agreed that there was a problem. And as a result of a lack of resources, one, as a

result of just the system procrastinating and procrastinating on, not really the meat of the rule change, you know, what does the rule change say, does it do the job? But really procrastinating on pros and cons, alternative analysis. The bureaucracy package that goes along with the rule change took 2-1/2 years.

Many times, it took six to eight months just to get out of the office of standards development because of procrastination of words, of the forms, the proper form we didn't use at one time because things started development 2-1/2 years ago. By the time it was ready to go to the Commission, the form for Commission papers had changed. I was ordered just before we went for the final package, to completely put it in a new form. That put us back five months.

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Q Put the staff paper in a new form?

A Put the staff paper back about four months. Well, this again is non-responsiveness to concerns of Inspection and NRR, primarily because of word engineering, if you would.

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Q I gather that what I understand you to be saying is that the Inspection & Enforcement division or office, some years ago, informed responsible offices, presumably NRR and Standards, that in the emergency planning area, that there were some things that made it very difficult for them to inspect and to take enforcement action in the emergency planning?

In other words, there was a real life issue identified. Nevertheless, for several reasons which you have mentioned, the system -- that is, the system within the Nuclear Regulatory Commission for reacting to such issues -- has not yet been able to come up with a change or changes to accommodate the concerns of Inspection and Enforcement. Is that a fair summary of what you're saying?

A That's correct. Again, let me emphasize, there's a number of problems. Number one is resources. Number two, two years ago emergency planning did not have the concern of everybody that it does have today. Number three, the ability of the system to bog down over procrastination in what we write, rather than concern as to the meat of the subject, the rule itself. We concerned ourselves with: Is this alternative worded right? Is this pro worded right?

Very infrequently was the rule change itself ever modified. The two-paragraph rule change was very rarely modified. It was the paper that went along with it. Is

it the right form? Do the words say what we really want to say? Let's procrastinate.

So elements bogged down the responsiveness that should be existent for the concerns of Inspection as well as NRR.

MR. PARLER: Tom?

BY MR. COX:

Q During this period when you were rewriting and revising, did each revision require coordination and concurrence or approval from the other offices, like NRR and I&E? I am assuming you're talking about the revisions originating in the Office of Standards Development. Did each one of those go through the loop outside, or was it just —

A It depends on the revision and it depends on where the paper is. If the revision was significant, if he changed it significantly, I would have to go back to the other offices. But many times the changes that were made in the Office of Standards Development were just minor word changes.

NRR and I&E are more concerned with the meat of the material. What does the rule change say, rather than, you know, is it going to do the job? Will the rule change do what I need it to do? That's how I&E and NRR looks at it, where Standards very rarely changed the rule, but changed the hell out of the package that went along with it, word

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engineered it to death.

Q So you feel there were long periods of time in between in which NRR and I&E weren't getting into the act? It was sort of here and being changed?

A Right.

BY MR. PARLER:

Q The word engineering that you were talking about, it takes place primarily in the Office of Standards Development or where?

A In this particular case, a great deal of it went on in the Office of Standards Development. It -- word engineering is a great part of bureaucracy, and it is by no means only here in the Office of Standards Development. But in this one particular rule change, the word engineering and the delay was mostly due to procrastination on behalf of this office.

Q Because of other priorities, perhaps a lack of resources, or what?

A All of the above.

Q All of the above.

I don't want to belabor this particular point, but my understanding of what you have said earlier is that, because of different interests of the different offices, that there may be differences of opinion and different objectives or differences of opinion because of differences in

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objectives, which may lead to a delay.

You also said, under those circumstances, that you were not aware of any place readily available within the organization to get such matters resolved, so that a project can be moved.

Now, here you're saying that, in addition to that, even if the offices that are interested in a change agree on the substance of the change, that they're — yes — there are other substantial problems that may be encountered: word engineering, procrastination, or what have you. And I gather that the latter is perhaps something that we have all encountered and, I suppose to some extent, accept in the workings of an organization.

On the latter point, is that your understanding of what is involved, or is there something else behind the word engineering or the procrastination?

A Well, I think your statement confused -- you know, depending on the rule change that we're discussing, the earlier rule change, the first rule change, the Seabrook rule change, it dealt with a great deal of politics.

Q Right.

A A great deal of what motivated people's ideas, how big the area should be, how small the area should be, and therefore, the bigger the empire, as far as the second rule change on maintaining emergency planning up to date --

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Q Yes.

A There everybody realized what we needed. It wasn't a big problem.

Q Right.

A It was a very minor problem and it did not deal with, if you would, empire building.

Q Right.

A So therefore, the differences of opinion, such as Class 9 versus design, that doesn't enter into that rule change.

Q Right.

A It was primarily an inability of the system to respond adequately and sufficiently to the concerns of Inspection & Enforcement, primarily because of lack of resources, procrastination or word engineering and lack of priority, if you would, for just the overall area of emergency planning.

Q I think that I was trying to contrast the two areas that -- and to try to make it clear for the record that on the Seabrook petition for rulemaking, that the reasons for the excessive time were those that you have just again summarized, and not any of the, I guess, different reasons that you mentioned earlier in connection with the -- another in a separate rulemaking effort.

All right. Is there anything else that you recall that

you would like to contribute to the record on the rule change for maintaining emergency planning?

A No.

Q That therefore, as I understand it, after about two and a half years, is about to culminate in a proposed rule; is that right?

A Believe it or not.

Q Now, another area that you mentioned is the -- that you were involved in subsequent to your effort on Regulatory Guide 1.101, is the Carter task force on emergency planning, which was initiated after the Three Mile Island accident on March the 28th, 1979. At whose initiative, as far as you are aware, was that task force started? Do you know?

A Mine.

Q Yours?

A Right after TMI, when all the offices were trying to scurry around and figure out what they were going to do as a result of TMI, it seemed to me that one office was -- State Programs was going their way and NRR was going their way and I&E was going their way.

I was at a meeting with Mr. Gossick and my supervisor, Carl Goller, and I suggested that a task force be established. It was then sort of nobody really agreed with that. I then wrote a letter to, I believe, Mr. Gossick

through Wayne Houston and suggested -- that's correct -- on May 8th, 1979, that again, a task force be or a task force or a working group be established to oversee and coordinate all of the activities going on in the emergency planning area.

MR. PARLER: This document that Mr. Jamgochian just mentioned is a memorandum from him to Wayne R. Houston, H-o-u-s-t-o-n, Chief of the Accident Analysis Branch, NRR, dated May 8th, 1979. Subject: Reconsideration of emergency planning regulations and guides in light of the TMI experience.

Mark that for identification as Exhibit 1047.

(Commission Exhibit No. 1047 identified.)

BY MR. PARLER:

Q As a result of the -- your recommendation to Mr. Houston, which is in the document marked for identification as Exhibit 1047, I gather that the Executive Director for Operations did convene or direct that there be a task force on emergency planning, that is, the task force that is headed by Mr. Tom Carter of the Office of Nuclear Materials, Safeguards and Safety, right?

A I doubt very much that Mr. Gossick formed the task force simply because I recommended it. I think the Commission realized that there was a great deal of things going on and there wasn't any centralized coordination

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group.

And I think Mr. Gossick realized that -- I don't even know if Mr. Gossick received that memo.

Q In any event, a task force was created to look at the emergency planning area, and you had made the same recommendations earlier, in your memorandum of May the 8th, 1979, to Mr. Houston: is that correct?

A That's correct.

MR. PARLER: I have a document from Lee V. Gossick, Executive Director for Operations, to various addressees, the first of which is Harold R. Denton, Subject: Task Force on emergency planning. The document is dated June the 20th, 1979.

I will mark this document for identification as Exhibit 1048.

(Commission Exhibit 1048 identified.)

BY MR. PARLER:

Q Now, I understand from your prior testimony that you are a member of the Carter task force on emergency planning and have participated in its deliberations. Right?

A That's correct.

Q You've also mentioned earlier that that task force has prepared a paper, SECY, S-E-C-Y, 79--499, which has gone to the Commission. What is the present status of the activities of the task force? Could you tell me that?

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A The task force is dead. They sent the letter -- they sent the task force report to the Commission outlining issues and how each office was going to resolve each issue or problem, amen. That's the end of the task force.

Q Are the papers, the SECY-79-499, still pending before the Commission? Is that correct?

A That's correct.

Q It is also my understanding, through representations, that the Office of Nuclear Reactor Operations, since March the 28th, 1979, has been engaging in certain activities to try to have existing licensees make changes in their emergency planning or their emergency plans. Are you aware of any such activities?

A Yes, sir.

Q Have you been involved personally in those activities?

A To what extent?

Q Are you a part of the NRR effort, or are they asking for your advice or views or --

A No, sir. I'm familiar with what they're doing. I've contacted the AD in charge of the activity, Mr. Jim Miller, and attended one of their sessions in Atlanta, where they read the news or read the new requirements to all of the licensees.

Q Are you generally familiar with what Mr. Miller

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is doing?

A Yes, sir.

Q What is your understanding of what he's trying to accomplish?

A Well, number one, they're finally going to implement and backfit Regulatory Guide 101. Number two, they are laying out acceptance criteria. Again, they are saying, we have Appendix E, we have Reg Guide 101. Now we're going to show you what we think is acceptable in order to meet Reg Guide 101 and Appendix E.

In other words, let's go back to the example before notification. The regulation says the licensee should have a scheme for notifying state and local governments and the public. Well, the regulation says -- the rule -- excuse me.

The Regulatory Guide goes into more detail as to notification. Now, Mr. Miller is going out with the word that in order for your plan to be accepted, here is acceptance criteria for that ability to notify the public. And I believe the latest version I saw was that each licensee, in conjunction with the state and local governments, will have to have an alarm system, a siren system that will be able to notify the public in case of an emergency within 15 minutes.

That's purely an example of what that acceptance

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criteria is heading for.

BY MR. COX:

Q To your knowledge, did the Office of Standards Development have a part in developing and specifying these criteria which Mr. Miller is now laying forth for licensees?

A No, sir.

Q None whatever?

A No e whatever.

Q Who, to your knowledge again, who developed this more specific interpretation of Reg Guide 101?

A People in NRR that are reasonably -- that are very well knowledgeable in the emergency planning area, people that work for Houston in -- who have evaluated emergency plans for a number of years, have now come to grips with developing that acceptance criteria.

The acceptance criteria, I've reviewed or scanned. I haven't reviewed it. It looks like pretty good information. I have no problems with what they're putting out.

Q Do you know whether or not the acceptance criteria that they're now putting out were concurred in or assisted in the development by the other offices which you have traditionally worked with in the past, such as I&E, State Programs, and I forget the others, but you have mentioned them, the ones that are normally involved in

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emergency planning?

A No, I don't believe they've been -- they've gone the usual route. I think three or four people sat down and from NRR, three or four knowledgeable people sat down, wrote them, and Mr. Miller grabbed them and ran with them.

Q With what level of approval has he grabbed them and run with them, Commission office, Mr. Gossick?

A I don't know as to what level of approval.

BY MR. PARLER:

Q To the best of your recollection and knowledge -- and I realize that what NRR is doing in the area of emergency planning now, that they are doing, that's their responsibility and not yours. But with that qualification, do you know or have you been informed as to the form in which these acceptance criteria are being advertised or are taken to the utilities and licensees? In other words, as a memorandum or letter or what?

In any event, the point that I'm trying to get to with the question is: These criteria, these acceptance criteria are not now reflected in any Regulatory Guide or regulation. Is that your understanding?

A That's correct. In fact, once I heard that Mr. Miller's people were establishing this acceptance criteria, I called Mr. Miller and told him that it would be very wise, for whatever he writes and distributes to

licensees, that he send me a copy, so that when I'm writing the regulations, we can perform the unbelievable task of being coordinated; that NRR, what they're putting out would be coordinated with what I'm putting out.

Mr. Miller readily agreed and has since forwarded me a copy of anything that they've been writing. And I've had communications with Mr. Miller's group. I'm -- I've got a good working relationship with all those people.

Q How does your understanding of what Mr. Miller's people are trying now to implement compare with the recommendations of the Carter task force to the Commission in the SECY paper 79-499? Are they both on the same track? Are they at odds with each other, or what?

A No. I believe NRR laid out in SECY 79-499 what they planned on doing in, number one, implementing Regulatory Guide 1.101; number two, laying out more specifically what's required of licensees.

Now, I don't believe they put a copy of the acceptance criteria in the Commission paper. But they did inform the Commission in that paper, I believe, that they were going to proceed expeditiously with this effort on behalf of implementing Regulatory Guide 101.

Q Your understanding is that NRR perceived the need for NRR to proceed on a faster track than apparently would be otherwise available?

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A Yes, sir.

Q And presumably, that is what led to the Miller effort, to James Miller's effort, although that would be speculation on your part or on anybody else's part other than the people that made the decisions with NRR, for Mr. Miller to proceed?

We do know that, even though there was a Carter task force on emergency planning, that NRR decided to proceed separately to take action, to have what, Regulatory Guide 101, backfitted to operating licensing -- operating licenses.

Other than the apparent need to have that backfitting done expeditiously, are you aware of any other reason for the NRR people to have proceeded on their own in this area?

A I think the NRR people perceived that some dynamic action had to be made in order to look good before the Commission. The Commission was tired of just a lot of procrastination and a lot of Commission papers coming before it, with very little action in this area. And I think NRR perceived this need. And it's good PR on behalf of NRR to run off and do all these good things. It looks good.

For the Tom Carter task force, there's a lot of paper. Here's a problem, we're going to solve it in six months, eight months, a year. Where Mr. Miller has been given the charter, just do it, get it done. Do something. Get, you

know, started with Regulatory Guide 101.

When Mr. Grimes mentioned that they were going to form a group to implement 101, I suggested that they hold off a little because Appendix E is changing. Regulatory Guide 101 will have to change Appendix E has changed, and that may be to jack up licensees at this time and then change the regulations three months later -- it would make us, as an agency, look bad.

I suggested to him, rather than having licensees shoot at a moving target, let's change Appendix E. Let's update Regulatory Guide 101, and then let's require the licensees to comply with what we have.

But Mr. Grimes and the other NRR management felt, no, something's got to be done now. And that's why the Miller effort was established.

Q Mr. Grimes was on the Carter task force?

A Yes, he was.

Q Was Mr. Miller on the Carter task force?

A No.

Q Was the discussion that you just summarized, as to what you -- the point that you made, was that subject discussed before the Carter task force? In other words, the desire on the one hand to wait and see how Appendix E and the Regulatory Guide would be changed, and on the other hand the apparent need on behalf of NRR to move more

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expeditiously?

Were those what would appear to be competing considerations discussed before the Carter task force?

A Yes. Brian Grimes laid out a Commission paper to the task force, which laid out for the Commission this effort from -- by Mr. Miller, and got the task force's concurrence on his actions before going to the Commission with it. I concurred with Mr. Grimes' action plan.

My only concern, as I mentioned, was that I pointed out in a memo to Brian with a copy to the task force that I think, rather than rushing off now, we ought to change our paper and then rush off and do it. But evidently, it was felt that the more expeditious road should be followed.

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Q So, the NRR action plan to which Mr. Grimes was apparently the spokesman on the Carter task force was presented to the Commission as far as you're aware in a separate staff paper?

A That's correct.

Q Some staff paper other than SECY-79-499. However, the NRR approach that was described in this separate staff paper, a paper which I do not have with me here today but which I recall seeing, the substance of that separate paper is also reflected in the SECY-79-499. Is that correct?

A Yes, I believe so.

Q Okay. Do you have any other comments that you think should be made for the record in the area that we're talking about?

A No, sir.

MR. PARLER: Let's go off the record for a minute.

(Discussion off the record.)

MR. PARLER: Back on the record.

During the time that we were off the record going through some of the other documents which are available in connection with the emergency planning question, there are a number of these documents which I have shown to Mr. Jamgochian, which I would like to mark for identification for the record.

The first is a memorandum from Roger J. Mattson to

R.B. Minogue, M-i-n-o-g-u-e, dated December 22, 1976. Subject: background information on Regulatory Guide 1.101. Emergency planning for nuclear power plants, revision one. I'll mark this document for identification as Exhibit 1049.

(Commission Exhibit 1049 identified.)

BY MR. PARLER:

Q And this document, as its title suggests, is indeed, a memorandum which provides background information on the Regulatory Guide 1.101 through revision one, is that correct?

A That's correct.

Q Now, you have provided me with another document which is a draft on your part, which discusses the issue of whether NRR concurrence in associated state and local response plans be a requirement for continued operation of any nuclear power plant with an existing license. This is a draft which has your name in the upper right-hand corner and it's dated 6/14. I assume the year is 1979?

A Yes.

Q And this is a draft which you prepared, right?

A That's correct.

MR. PARLER: I'll mark this draft for identification for the record as Exhibit 1050.

(Commission Exhibit 1050 identified.)

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BY MR. PARLER:

Q I believe earlier in your testimony, you did address yourself to the issue which is the subject of this draft, memorandum. Is that correct.

A That's correct.

Q And your general conclusion, without stating all the reasons therefor, is what?

A Well, it's — it is not — there's no conclusion in that paper in that it simply discusses in real life the NRR concurrence in state and local planning. Does it buy you any more safety than what exists now? Are the people any safer around a nuclear power plant because we've concurred in or not concurred in a state or local plan?

Q How do you come out on that particular matter?

A My own personal opinion is that as long as adequate arrangements have been made to take protective measures and as long as the local people and the licensee have their ducts in the line, that adequate protective measures can be taken.

MR. PARLER: There is another document dated — I'm sorry — from Donald F. Knuth. That's K-n-u-t-h, who at the time was the director of the office of Inspection & Enforcement, to multiple addressees, one of which is the Alternative Energy Coalition of Massachusetts. That's dated October 10, 1975.

I show this letter to Mr. Jamgochian. I would like to mark it for identification as Exhibit 1051.

(Commission Exhibit 1051 identified.)

BY MR. PARLER:

Q This letter, were you involved in the response at all?

A No, sir.

Q It would appear from your brief perusal of the letter in the short time that we've had here this morning, that it seems to raise essentially the same issue that occurred at about the same time in the petition for rulemaking that has been marked for identification as Exhibit 1045, the issue being whether there can be an effective emergency plan without the approval or the concurrence of not only the licensee's plan, but also the state's plan.

Is that generally your impression of this memorandum?

A No. Exhibit 1045 deals with the Public Interest Research Group petition for rulemaking, which dealt with public evacuation drills and dissemination of the PSAR and FSAR emergency plan.

Q This, I believe you said deals with the concurrence function. That is not part of the petition for rulemaking. So, this letter, if you would accept my representation that it does deal primarily with the need to

have the state emergency plan reviewed. That is an issue that you have considered previously in your emergency planning work. Is my understanding correct in that regard?

A I'm sorry. I didn't -- off the record.

(Discussion off the record.)

MR. PARLER: Go back on the record. For whatever purposes it may serve, we'll include the letter marked for identification as Exhibit 1051 in the record of the deposition. It should be understood, however, that the incoming letter which prompted the Knuth response marked as Exhibit 1051 is not available. So it is very difficult for Mr. Jamgochian to, under those circumstances, reflect on, analyze and respond to the question that I asked regarding the relevance of the Knuth letter to other matters which have been discussed here today.

BY MR. PARLER:

Q All right?

A All right.

MR. PARLER: Mr. Dixon, do you have any questions that you would like to ask? I have no further questions myself.

Tom, do you have any further questions?

MR. COX: No, I do not.

MR. PARLER: Do you, Mr. Dixon?

MR. DIXON: Off the record for a minute.

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(Discussion off the record.)

MR. DIXON: Yes, I just made the comment to ascertain whether a question was asked of you during the course of this deposition which you did not understand and then as a result, you may have answered the question in a manner that did not reflect your position on a particular point. Yes or no?

THE WITNESS: No, I don't believe that was asked.

MR. DIXON: Okay.

MR. PARLER: Mr. Jamgochian, do you have anything else? Mr. Dixon?

MR. DIXON: No. That's all.

MR. PARLER: Mr. Jamgochian, in conclusion, let me say that this is an ongoing investigation and although we have completed the questions we have for you today, we may need to bring you back for further depositions. We will, however, make every effort to avoid having to do so.

Off the record.

(Discussion off the record.)

MR. PARLER: When the transcript of this proceeding is made available to us from the reporter, a copy will be sent to you. I will send the copy to you. You will be given an opportunity within 10 days to make any corrections of substance to the transcript. Certainly, anything which may deal with matters of substance which

would change the meaning.

I suppose that that point was discussed earlier at the outset of the deposition in part of the statement I read to you. I'm just simply reiterating that at this time, that you will be given a copy of the transcript. Normally, it will be about a week or so before we get the transcript. I will get it promptly to you.

I wish to thank you for your time in being here with us and for your contributions to the Special Inquiry Group, sir. That's it.

THE WITNESS: Thank you.

(Whereupon, at 12:10 p.m., the taking of the deposition was concluded.)

EXHIBIT 1042

August 30, 1979

In Reply Refer to:
NTFTM 790830-02

Mr. Michael T. Jamgochian
Site Designation Standards Branch
Division of Siting, Health and Safeguards Standards
Office of Standards Development
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Jamgochian:

I am writing to confirm that your deposition under oath in connection with the accident at Three Mile Island is scheduled for September 10, 1979 at 9:00 a.m., in the Arlington Road offices of the TMI Special Inquiry Group. This will also confirm my request for you to bring with you a copy of your resume and any documents in your possession or control regarding TMI-2, the accident or precursor events which you have reason to believe may not be in official NRC files, including any diary or personal working file.

The deposition will be conducted by members of the NRC's Special Inquiry Group on Three Mile Island. This Group is being directed independently of the NRC by the law firm of Rogovin, Stern and Huge. It includes both NRC personnel who have been detailed to the Special Inquiry Staff, and outside staff and attorneys. Through a delegation of authority from the NRC under Section 161(c) of the Atomic Energy Act of 1954, as amended, the Special Inquiry Group has a broad mandate to inquire into the causes of the accident at Three Mile Island, to identify major problem areas and to make recommendations for change. At the conclusion of its investigation, the Group will issue a detailed public report setting forth its findings and recommendations.

Unless you have been served with a subpoena, your participation in the deposition is voluntary and there will be no effect on you if you decline to answer some or all of the questions asked you. However, the Special Inquiry has been given the power to subpoena witnesses to appear and testify under oath, or to appear and produce documents, or both, at any designated place. Any person deposed may have an attorney present or any other person he wishes accompany him at the deposition as his representative. The Office of the General Counsel of NRC has advised us that it is willing to send an NRC attorney to all depositions of NRC employees who will represent you as an individual rather than represent NRC. Since the NRC attorney may attend only at your affirmative request, you should notify Richard Mallory (634-3224) in the Office of the General Counsel as soon as practicable if you wish to have an NRC attorney present.

You should realize that while we will try to respect any requests for confidentiality in connection with the publication of our report, we can make no guarantees. Names of witnesses and the information they provide may eventually become public, inasmuch as the entire record of the Special Inquiry Group's investigation will be made available to the NRC for whatever uses it may deem appropriate. In time, this information may be made available to the public

OFFICE ▶						
SURNAME ▶						
DATE ▶						

voluntarily, or become available to the public through the Freedom of Information Act. Moreover, other departments and agencies of government may request access to this information pursuant to the Privacy Act of 1974. The information may also be made available in whole or in part to committees or subcommittees of the U.S. Congress.

If you have testified previously with respect to the Three Mile Island accident, it would be useful if you could review any transcripts of your previous statement(s) prior to the deposition.

Thank you for your cooperation.

Sincerely,

Mitchell Rogovin, Director
NRC/TMI Special Inquiry Group

DISTRIBUTION
TERA
WParler
PNorry
RDeYoung
GFrampton
MRogovin

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SURNAME ▶	WParler:kr:mc	PNorry	RDeYoung	GFrampton	MRogovin	
DATE ▶	8/29/79	8/30/79	8/30/79	8/ /79	8/ /79	

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

August 30, 1979

In Reply Refer to:
NTFTM 790830-01

MEMORANDUM FOR: Lee V. Gossick, Executive Director for Operations

FROM: Mitchell Rogovin, Director
NRC/TMI Special Inquiry Group

SUBJECT: DEPOSITION CONCERNING MATTERS OF INTEREST TO THE SPECIAL INQUIRY GROUP

The NRC/TMI Special Inquiry has a need for and will be prepared to take a deposition under oath from Michael T. Jamgochian at 9:00 a.m. on September 10, 1979, in the Arlington Road offices of the TMI Special Inquiry Group.

We request that you arrange to have Mr. Jamgochian appear at the interview room at the time indicated above. If there are any questions concerning the planned deposition, please contact William Parler (4[illegible]2-8950).

Mitchell Rogovin

Mitchell Rogovin, Director
NRC/TMI Special Inquiry Group

Enclosure:
Witness Notification

cc: R. Minogue
R. Mallory, OGC

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

August 30, 1979

MEMORANDUM FOR: William Parler

FROM: R. C. DeYoung, Deputy Staff Director

SUBJECT: DELEGATION OF AUTHORITY TO ADMINISTER OATHS

You are hereby delegated the Commission's Authority to administer the oath for the purpose of taking the deposition of Michael T. Jamgochian at 9:00 a.m., September 10, 1979, in the Arlington Road offices of the TMI Special Inquiry Group in connection with the Commission's investigation of the accident at Three Mile Island, Unit 2. This authority is provided to the Commission by Section 161c of the Atomic Energy Act of 1954, as amended, and has been delegated to me via the enclosed memorandum from the Secretary of the Commission. No further delegation of this authority is permitted.

August 30, 1979
Date

R. C. DeYoung
Deputy Staff Director
NRC/TMI Special Inquiry Group

Enclosure:
Delegation of Authority memo
fm Chilk dtd 8/6/79

Personal Qualifications Statement

Read instructions before completing form

1043

Form Approved
O.M.B. No. 50-R0387

1 Kind of position (job) you are filing for (or title and number of announcement)

2 Options for which you wish to be considered (if listed in the announcement)

3 Home phone — Area Code: 301 | Number: 774-2579

4 Work phone — Area Code: 301 | Number: 443-5981 | Extension:

5 Preferred title (mark one)
[X] Mr [ ] Mrs [ ] Miss [ ] Ms

6 Other last names ever used (e.g., Maiden)

7 Name (Last, First, Middle)
JAMGOCHIAN MICHAEL T

Street address or RFD no. (include apartment no., if any)
19617 ISLANDER ST

City: OLNEY | State: Md. | ZIP Code: 20832

8 Birthplace (City & State, or foreign country)
BROOKLYN NEW YORK

9 Birth date (Month, day, year)
3/15/43

10 [redacted]

11 If you have ever been employed by the Federal Government as a civilian, give your highest grade, classification series, and job title.
GS 14, NUCLEAR ENGINEER, 840

Dates of service in that grade (Month, day, and year)
From 7/15/76 To PRESENT

12 If you currently have an application on file with the Civil Service Commission for appointment to a Federal position, (a) list the name of the area office maintaining your application, (b) the position for which you filed, and (if appropriate) (c) the date of your notice of rating, (d) your identification number, and (e) your rating.

13 Lowest pay or grade you will accept

PAY		OR	GRADE
$	per		GS 1

14 When will you be available for work? (Month and year)
NOW

15 Are you available for temporary employment lasting:
(Acceptance or refusal of temporary employment will not affect your consideration for other appointments.)

	YES	NO
A Less than 1 month?		X
B 1 to 4 months?		X
C 5 to 12 months?		X

16 Are you interested in being considered for employment by

	YES	NO
A State and local government agencies?	X	
B Congressional and other public offices?	X	
C Public international organizations?	X	

17 Where will you accept a job:

	YES	NO
A In the Washington, D.C. Metropolitan area?	X	
B Outside the 50 United States?	X	
C Anyplace in the United States?	X	
D Only in (specify locality)		

18 Indicate your availability for overnight travel:

A Not available for overnight travel	
B 1 to 5 nights per month	X
C 6 to 10 nights per month	
D 11 or more nights per month	

19 Are you available for part-time positions (fewer than 40 hours per week) offering:

	YES	NO
A 20 or fewer hours per week?		X
B 21 to 31 hours per week?		X
C 32 to 39 hours per week?		X

20 Veteran Preference. Answer all parts. If a part does not apply to you, answer "NO."

	YES	NO
A Have you ever served on active duty in the United States military service? (Exclude tours of active duty for training in Reserves or National Guard)		X
B Have you ever been discharged from the armed services under other than honorable conditions? (You may omit any such discharge changed to honorable or general by a Discharge Review Board or similar authority.) If "YES", give details in item 35.		X
C Do you claim 5 point preference based on active duty in the armed forces? If "YES", you will be required to furnish records to support your claim at the time you are appointed.		X
D Do you claim 10 point preference? If "YES", check the type of preference claimed and complete and attach Standard Form 15, "Claim for 10 Point Veteran Preference", together with the proof requested in that form.		X

Type of Preference: [ ] Compensable Disability [ ] Non-compensable Disability [ ] Purple Heart Recipient [ ] Spouse [ ] Widow(er) [ ] Mother

E List dates, branch, and serial number of all active service (enter "N/A" if not applicable)

From	To	Branch of Service	Serial or Service Number

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Material: [ ] Submitted [ ] Returned
Entered register
Notations
Form reviewed
Form approved

Option	Grade	Earned Rating	Preference	Aug. Rating
			[ ] 5 Points (Tent.)	
			[ ] 10 Points Comp. Dis.	
			[ ] Other 10 Points	
			[ ] Disab.	
			[ ] Being Investigated	
Initials and date				

ANNOUNCEMENT NO.
STATEMENT NO.

THIS SPACE FOR USE OF APPOINTING OFFICER ONLY
Preference has been verified through proof that the separation was under honorable conditions, and other proof as required.
[ ] 5-Point [ ] 10-Point Compensable Disab. [ ] 10-Point Other
Signature and title
Agency | Date

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171-106

Standard Form 171 (rev. 12-77)
U.S. Civil Service Commission

21 Experience Begin with current or most recent work or volunteer experience and work back. Account for periods of unemployment exceeding three months and your residence address at that time on the last line of the experience blocks in order of occurrence.

May inquiry be made of your present employer regarding your character, qualifications, and record of employment? (A "NO" will not affect your consideration for employment opportunities except for Administrative Law Judge positions.) [X] YES [ ] NO

A

Name and address of employer's organization (include ZIP Code, if known): U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON DC 20555

Dates employed (give month and year): From 2/1/75 To PRESENT

Average number of hours per week: 40

Salary or earnings: Beginning $22,543 per YEAR; Ending $ per YEAR

Place of employment: City ROCKVILLE; State Md

Exact title of your position: NUCLEAR ENGINEER

Name of immediate supervisor: MS PAT COMELLA

Area Code / Telephone Number: 301 / 4435981

Number and kind of employees you supervised: None

Kind of business or organization (manufacturing, accounting, social services, etc.): REGULATION

If Federal service, civilian or military: series, grade or rank, and date of last promotion: GS 14, 840, 7/15/76

Your reason for wanting to leave:

Description of work (Describe your specific duties, responsibilities and accomplishments in this job.): CAREER IMPROVEMENT

SEE ENCLOSURE 1 FOR AN OUTLINE OF MY CURRENT POSITION RESPONSIBILITIES & PUBLICATIONS & PLEASE SEE ENCLOSURE 1A for MY DESCRIPTION

For agency use (skill codes, etc.):

B

Name and address of employer's organization (include ZIP Code, if known): U.S. Atomic Energy Comm. WASHINGTON DC.

Dates employed (give month and year): From 2/1/74 To 2/1/75

Average number of hours per week: 40

Salary or earnings: Beginning $21,000 per year; Ending $22,543 per year

Place of employment: City ROCKVILLE; State Md

Exact title of your position: NUCLEAR ENGINEER

Name of immediate supervisor: MR. VINCE PANCIERA

Area Code / Telephone Number: 301 / 492 8079

Number and kind of employees you supervised: None

Kind of business or organization (manufacturing, accounting, social services, etc.): REGULATION

If Federal service, civilian or military: series, grade or rank, and date of last promotion: GS 13, 840

Your reason for leaving: PROMOTIONAL OPPORTUNITIES

Description of work (Describe your specific duties, responsibilities and accomplishments in this job.):

SEE ENCLOSURE 2

For agency use (skill codes, etc.):

C

Name and address of employer's organization (include ZIP Code, if known): SUPERVISOR OF SHIPBUILDING CONVERSION AND REPAIR, U.S.N. NEWPORT NEWS, VA. 23607

Dates employed (give month and year): From 1/73 To 2/74

Average number of hours per week: 40

Salary or earnings: Beginning $18,900 per year; Ending $19,900 per year

Place of employment: City NEWPORT NEWS; State VA.

Exact title of your position: PROJECT ENGINEER

Name of immediate supervisor: MR JOHN BOLLING

Area Code / Telephone Number: 804 / 2474174

Number and kind of employees you supervised: None

Kind of business or organization (manufacturing, accounting, social services, etc.) OVERLOOKING SHIPBUILDING CONTRACTOR

If Federal service, civilian or military: series, grade or rank, and date of last promotion: GS 12

Your reason for leaving: PROMOTIONAL OPPORTUNITIES

Description of work (Describe your specific duties, responsibilities and accomplishments in this job.):

I WAS RESPONSIBLE for A VARIETY OF DUTIES IN CONNECTION WITH THE COORDINATION, MANAGEMENT & ADMINISTRATION OF SPECIFIC TECHNICAL PROGRAM AREAS for the SSN 688 CLASS SUBMARINE. I CONDUCTED REVIEWS OF CONTRACT REQUIREMENTS, CONTRACT GUIDANCE, PLANS & SPECIFICATIONS FOR THE MISSION, OPERATIONAL REQUIREMENTS, DESIGN CONCEPT AND THE ENGINEERING PRODUCTION & PROCEDURAL REQUIREMENTS FOR THE CONSTRUCTION OF THE SSN 688, 688I, 691, 693 2695.

For agency use (skill codes, etc.):

If you need additional experience blocks, use Standard Form 171-A or blank sheets of paper

SEE INSTRUCTION SHEET

CONTINUATION SHEET FOR STANDARD FORM 171

"PERSONAL QUALIFICATIONS STATEMENT"

Office of Management and Budget
Approval No. 50-R183

INSTRUCTIONS—Fill out this form only when necessary for completion of Item 20, "EXPERIENCE," on Standard Form 171, Personal Qualifications Statement. Type or write clearly in dark ink.

1. Name (Last) (First) (Middle) (Maiden, if any) ☒ Mr. ☐ Miss ☐ Mrs.
IANNUCCHIAN MICHAEL I

2. Birth date (Month, day, year)
3/15/43

3. Kind of position applied for, or name of examination

4. Date of this continuation sheet

D

Dates of employment (month, year) From 2/70 To 1/74

Exact title of position NUCLEAR ENGINEER

If Federal service, civilian or military grade GS 12

Salary or earnings Starting $ 15,130 per year Final $ 18,903 per year

Avg. hrs. per week 40

Place of employment City: NEWPORT NEWS State: VA

Number and kind of employees supervised None

Kind of business or organization (manufacturing, accounting, insurance, etc.) OVERLOOKING SHIPBUILDING CONTRACTOR

Name of immediate supervisor S. HARMAN

Area Code and phone No. if known 804 247 4371

Name of employer (firm, organization, etc.) and address (including ZIP Code, if known) SUPERVISOR of SHIPBUILDING, CONVERSION & REPAIR USN, NEWPORT NEWS VA 23607

Reason for leaving PROMOTIONAL OPPORTUNITIES

Description of duties and accomplishments in your work I HAD FULL AUTHORITY TO ACT FOR the U.S. NAVY AT MEETINGS (APPROX 3 PER WEEK) WITH SENIOR ENGINEERING REPRESENTATIVES FROM GENERAL ELECTRIC, WESTINGHOUSE, REC, NAVSHIPS & SHIPBUILDERS. I REVIEWED, COORDINATED & APPROVED TESTING PROCEDURES (STRUCTURAL, PIPING, ELECTRICAL & MACHINERY INSTALLATION) FOR DLGN 36 CLASS & SSN 637 CLASS. MY POSITION MANY TIMES ENCOMPASSED BOTH ENGINEERING & BUSINESS ASPECTS OF SHIP PROCUREMENT (SEE ENCL 3)

For agency use (skill codes, etc.)

E

Dates of employment (month, year) From 2/67 To 2/70

Exact title of position NUCLEAR ENGINEER

If Federal service, civilian or military grade GS 7 9 & 11

Salary or earnings Starting $ 10,941 per year Final $ 13,103 per year

Avg. hrs. per week 40

Place of employment City: PORTSMOUTH State: N.H.

Number and kind of employees supervised TRADESMEN (APPROX 20)

Kind of business or organization (manufacturing, accounting, insurance, etc.) SHIPBUILDING

Name of immediate supervisor ANDY VALLONE

Area Code and phone No. if known 439 1000 X1342

Name of employer (firm, organization, etc.) and address (including ZIP Code, if known) PORTSMOUTH NAVAL SHIPYARD PORTSMOUTH N.H.

Reason for leaving NAVAL SHIPYARD CLOSURE ORDER

Description of duties and accomplishments in your work SEE ENCLOSURES 4 & 5

For agency use (skill codes, etc.)

F

Dates of employment (month, year) From 7/65 To 2/67

Exact title of position STRUCTURAL MARINE ENGINEER

If Federal service, civilian or military grade GS 5

Salary or earnings Starting $ 5,990 per year Final $ 10,945 per year

Avg. hrs. per week 40

Place of employment City: PORTSMOUTH State: N.H.

Number and kind of employees supervised None

Kind of business or organization (manufacturing, accounting, insurance, etc.) SHIPBUILDING

Name of immediate supervisor JACK McARDLE

Area Code and phone No. if known 439 1000 EX1342

Name of employer (firm, organization, etc.) and address (including ZIP Code, if known) PORTSMOUTH NAVAL SHIPYARD PORTSMOUTH N.H.

Reason for leaving PROMOTIONAL OPPORTUNITIES

Description of duties and accomplishments in your work I PROVIDED ENGINEERING EXPERTISE IN STRUCTURES & RADIATION SHIELDING ASSOCIATED WITH WORK ON THE REACTOR PLANT AND IN SUPPORT OF HULL SURVEILLANCE PROGRAMS ON NUCLEAR SHIPS UNDERGOING OVERHAUL.

For agency use (skill codes, etc.)

Attach Supplemental Sheets or Forms Here

22. A. Special qualifications and skills (skills with machines, patents or inventions, your most important publications (do not submit copies unless requested), your public speaking and publications experience, membership in professional or scientific societies, etc.)

I ENJOY & EXCEL IN PUBLIC SPEAKING

B. Kind of license or certificate (pilot, registered nurse, lawyer, radio operator, CPA, etc.)

None

C. Latest license or certificate — Year: | State or other licensing authority:

D. Approximate number of words per minute — Typing: | Shorthand:

23. A. Did you graduate from high school or will you graduate within the next nine months, or do you have a GED high school equivalency certificate?

Yes	Month and year	No	Highest grade completed
X	6/61		

B. Name and location (city and State) of last high school attended

BROOKLYN TECHNICAL HIGH SCHOOL
BROOKLYN NEW YORK

C. Name and location (city, State, and ZIP Code, if known) of college or university (If you expect to graduate within nine months, give MONTH and YEAR you expect to receive your degree.)

Dates Attended From	Dates Attended To	Years Completed Day	Years Completed Night	No. of Credits Completed Semester Hours	No. of Credits Completed Quarter Hours	Type of Degree (B.A., etc.)	Year of Degree
1961	1965	4		130		BSME	1965

SOUTHEASTERN MASS. UNIV

D. Chief undergraduate college subjects

	No. of Credits Completed Semester Hours	No. of Credits Completed Quarter Hours
~~MECHANICAL~~		
ELECTRICAL APPROX	20	
MECHANICAL APPROX	50	

E. Chief graduate college subjects — None

No. of Credits Completed Semester Hours	No. of Credits Completed Quarter Hours

F. Major field of study at highest level of college work

MACHINE DESIGN

G. Other schools or training (for example, trade, vocational, Armed Forces or business). Give for each the name and location (city, State, and ZIP Code, if known) of school, dates attended, subjects studied, number of classroom hours of instruction per week, certificate, and any other pertinent data.

1. CONTRACT LAW - UNIV. OHIO
2. DECISION ANALYSIS - MIT
3. PREPARING FOR NUCLEAR EMERGENCIES - HARVARD
4. STATE GOVERNMENT HANDLING OF NUCLEAR EMERGENCIES - MIT
5. RADIATION SAFETY - AEC/HEW
6. REACTOR SYSTEMS - PORTSMOUTH NAVAL SHIPYARD

24. Honors, awards, and fellowships received

None

25. Languages other than English. List the languages (other than English) in which you are proficient and indicate your level of proficiency by putting a check mark (✓) in the appropriate column. Candidates for positions requiring conversational ability in a language other than English may be given an interview conducted solely in that language. Describe in item 35 how you gained your language skills and the amount of experience you have had (e.g., completed 72 hours of classroom training, spoke language at home for 18 years, self-taught, etc.)

Name of Language(s)	PROFICIENCY: Can Prepare and Deliver Lectures — Fluently	Can Prepare and Deliver Lectures — With Difficulty	Can Converse — Fluently	Can Converse — Passably	Have Facility to Translate Articles, Technical Materials, etc. — Into English	Have Facility to Translate Articles, Technical Materials, etc. — From English	Can Read Articles, Technical Materials, etc., for Own Use — Easily	Can Read Articles, Technical Materials, etc., for Own Use — With Difficulty
None								

26. References. List three persons who are NOT related to you and who have definite knowledge of your qualifications and fitness for the position for which you are applying. Do not repeat names of supervisors listed under item 21, Experience.

Full Name	Present Business or Home Address (Number, Street, City, State and ZIP Code)	Business or Occupation
MR. R. GRILL	U.S. NRC, OFFICE OF STD. DEVELOPMENTS, WASH. DC 20555	ENVIRONMENTAL SCIENTIST (GS 15)
MR. C. NICHOLS	"	NUCLEAR CHEMIST (GS 15)
MR. J. BRODERICK	123 CANDLE LITE DR. MCMURRY, PA. 15317	COMPUTER SPECIALISTS

Answer items 27 through 34 by placing an "X" in the proper column	YES	NO
27. Are you a citizen of the United States? If "NO" give country of which you are a citizen	X	
NOTE: A conviction or a firing does not necessarily mean you cannot be appointed. The nature of the conviction or firing and how long ago it occurred is important. Give all the facts so that a decision can be made.		
28. Within the last five years have you been fired from any job for any reason?		X
29. Within the last five years have you quit a job after being notified that you would be fired? If your answer to 28 or 29 above is "YES" give details in item 35. Show the name and address *(including ZIP Code)* of employer, approximate date, and reasons in each case. This information should agree with your answers in item 21, Experience.		X
30. A. Have you ever been convicted, forfeited collateral, or are you now under charges for any felony or any firearms or explosives offense against the law? *(A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by a term of imprisonment of two years or less.)*		X
B. During the past seven years have you been convicted, imprisoned, on probation or parole or forfeited collateral, or are you now under charges for any offense against the law not included in A, above?		X
NOTE: When answering A. and B. above, you may omit: (1) traffic fines for which you paid a fine of $50.00 or less; (2) any offense committed before your 18th birthday which was finally adjudicated in a juvenile court or under a youth offender law; (3) any conviction the record of which has been expunged under Federal or State law; and (4) any conviction set aside under the Federal Youth Corrections Act or similar State authority.		X
31. While in the military service were you ever convicted by a general court-martial? If your answer to 30A, 30B, or 31 is "YES", give details in item 35. Show for each offense: (1) date; (2) charge; (3) place; (4) court; and (5) action taken.		X
32. Does the United States Government employ in a civilian capacity or as a member of the Armed Forces any relative of yours *(by blood or marriage)? (See items 32 and 33 in the attached instruction sheet.)*	X	
33. Do you live with, or within the past 12 months have you lived with, any of these relatives who are employed in a civilian capacity? If your answer to 32 is "YES", give in item 35 for such relatives: (1) name; (2) present address *(including ZIP Code)*; (3) relationship; (4) department, agency, or branch of the armed forces. If your answer to 33 is "YES", also give the kind of appointment held by the relative(s) you live with or have lived with within the past 12 months.	X	
34. Do you receive, or do you have pending, application for retirement or retainer pay, pension, or other compensation based upon military, Federal civilian, or District of Columbia Government service? If your answer to 34 is "YES" give details in item 35.		X

Your Statement cannot be processed until you have answered all questions, including items 27 through 34 above. Be sure you have placed an "X" to the left of EVERY marker (◀) above, either in the "YES" or "NO" column.

35. Item Number	Space for detailed answers. Indicate item number to which the answers apply.

If more space is required, use full sheets of paper approximately the same size as this page. Write on each sheet your name, birth date, and announcement or position title. Attach all sheets to this Statement at the top of page 3.

ATTENTION -- THIS STATEMENT MUST BE SIGNED

Read the following paragraphs carefully before signing this Statement.

A false answer to any question in this Statement may be grounds for not employing you, or for dismissing you after you begin work, and may be punishable by fine or imprisonment (U.S. Code, Title 18, Section 1001). All the information you give will be considered in reviewing your Statement.

AUTHORITY FOR RELEASE OF INFORMATION

I have completed this Statement with the knowledge and understanding that any or all items contained herein may be subject to investigation prescribed by law or Presidential directive and I consent to the release of information concerning my capacity and fitness by employers, educational institutions, law enforcement agencies, and other individuals and agencies, to duly accredited investigators, Personnel Staffing Specialists, and other authorized employees of the Federal Government for that purpose.

CERTIFICATION	SIGNATURE *(sign in ink)*	DATE
I certify that all of the statements made by me are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.		

☆ U.S.GOV'T PRINTING OFFICE 1978 259-601

POSITION RESPONSIBILITIES

1. Responsible for developing and publishing a rule change to 10 CFR Part 50, Appendix E, which addresses emergency planning considerations outside the LPZ.

2. Responsible for developing a regulatory guide outlining a planning basis accident for licensee emergency preparedness.

3. Responsible for evaluating the changing and improving of 10 CFR Part 50 Appendix E.

4. Worked on a joint EPA/NRC task force which developed NUREG 0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light-Water Nuclear Power Plants".

5. Responsible for developing the NRC position concerning the Public Interest Research Group Petition for Rulemaking Concerning Emergency Preparedness - Interim Commission information paper forwarded 1/30/76.

6. Responsible for developing the 10 CFR Part 50 rule change (Emergency plan update and research reactor emergency plans).

7. Responsible for developing staff position relative to a portion of a New Jersey petition for rulemaking concerning Emergency Planning.

8. Responsible for developing Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants".

9. Responsible for developing Regulatory Guide 2.6, "Emergency Planning for Research Reactors".

10. Responsible for Regulatory Guide 1.91, "Explosions Postulated to Occur Near Nuclear Power Plants".

11. Responsible for developing criteria for a contract with Sandia in order to develop a document on Emergency Planning Scenarios.

12. NRC work group representative responsible for developing criteria for a training course which will be given to State radiation control directors.

13. NRC alternate member to an ANS work group responsible for developing three standards which will be used in Emergency Preparedness: (1) Emergency Control Centers; (2) Adequate Medical Facilities; (3) Adequate Drills and Exercises.

14. Responsible for review and coordination of all Federal interagency agreements involving Emergency Preparedness.

15. Member of the Interoffice Emergency Planning Task Force.

ENCL. 1

Nuclear Engineer, GS-14
Office of Standards Development
Site Designation Standards Branch

FUNCTIONAL STATEMENT:

As a person experienced in the engineering aspects of nuclear reactors, serves as a specialist in the Site Designation Standards Branch, Office of Standards Development. Responsible for the development of reactor standards, codes, and criteria relating to nuclear emergency preparedness as they relate to the construction, testing, operation, and refueling aspects of nuclear facilities and for advising other NRC offices in this highly technical area.

REGULAR DUTIES:

Serves as a technical member of the Office of Standards Development in developing standards, codes, and criteria in the area of emergency preparedness as they relate to the construction, testing, operation, and refueling aspects of nuclear facilities.

Prepares those emergency preparedness standards, codes, and criteria associated with the programs or portions thereof to which he is assigned. Serves as the regulatory contact for NRC nuclear safety research and development programs in these areas.

Provides technical assistance to other NRC offices and Divisions, regarding the application of reactor standards, codes, and criteria to specific reactor cases relating to nuclear emergency preparedness. Confers with technical representatives of industrial organizations regarding adequacy and application of emergency preparedness standards, codes, and criteria.

Participates as a representative of the Office of Standards Development on NRC and national committees relating to nuclear emergency preparedness standards, codes, and criteria.

Reviews and evaluates proposals submitted by national laboratories and other organizations providing technical assistance to the Office of Standards Development of guides, standards, codes, and criteria relating to the nuclear emergency preparedness area.

BASIC SKILL:

Knowledge of the basic principles, theories, and practices in the field of nuclear engineering especially as they relate to the field of nuclear emergency preparedness. Competence must be adequate to enable evaluation and direction of a wide variety of complex concepts and programs.

The basic skill requirements are in excess of those obtained by formal education at the university level (B.S. Degree), being supplemented by an understanding of design, construction, operation, and refueling of

ENCL 1A

Engineer, GS-14
f Standards Development
ignation Standards Branch

of other types of reactors in

echnical problems in order to
reactor standards, codes, and
ne Commission's regulations,
lity to represent the Office
creditable manner in dealing
nicipal agencies, and NRC con-
sociated with nuclear emergency

echnical assistance projects
ities are being accomplished

d line management of his own
Safeguards, Office of Nuclear
ory Research and the Office of
ng significant changes in
iness. Frequent contacts with
ncies, industry, and research
lated to reactor safety stan-
r emergency preparedness.

ce of Standards Development,

th full authority to act
nments.

nd technical reports, issu-
a developed by the NRC, by
are utilized as appropriate.

ommendations regarding the
in the emergency preparedness

s judgements, in most cases, are initial
view, but eventually will be subjected t
eviews.

the Office of Standards Development in t
lustrial representatives relating to stan
e emergency preparedness area.

y-to-day technical and administrative pro
his projects.

ENCL 1A

nuclear power reactors as well as knowledge of other types of reactors in the nuclear emergency preparedness area.

Knowledge and demonstrated ability to grasp technical problems in order to coordinate the formulation of clear, concise reactor standards, codes, and criteria. Requires extensive knowledge of the Commission's regulations, principles, and procedures. Demonstrated ability to represent the Office of Standards Development in an effective and creditable manner in dealing with other Federal agencies and State and municipal agencies, and NRC contractors with respect to complex problems associated with nuclear emergency preparedness.

Ability to define, establish and coordinate technical assistance projects and to assure that technical assistance activities are being accomplished within their approved scope.

CONTACTS:

Frequent contacts with technical personnel and line management of his own office, Office of Nuclear Material Safety and Safeguards, Office of Nuclear Reactor Regulation, Office of Nuclear Regulatory Research and the Office of Inspection and Enforcement on matters effecting significant changes in programs related to nuclear emergency preparedness. Frequent contacts with technical personnel from other Government agencies, industry, and research laboratories to discuss technical programs related to reactor safety standards, criteria, and guides and related nuclear emergency preparedness.

DECISIONS:

Supervision Received:

Chief, Site Designation Standards Branch, Office of Standards Development, GS-15.

Supervision is general on technical matters with full authority to act within the framework of broad functional assignments.

Administrative guides are overall NRC policy and technical reports, issuances, and publications. Standards or criteria developed by the NRC, by other Federal agencies, or by State agencies, are utilized as appropriate.

Independent Action:

Responsible for making important technical recommendations regarding the formulation of standards, codes, and criteria in the emergency preparedness

ENCL 1A

Nuclear Engineer, GS-14
Office of Standards Development
Site Designation Standards Branch

area. His judgements, in most cases, are initially subjected only to a general review, but eventually will be subjected to extensive NRC and industry reviews.

Represents the Office of Standards Development in technical meetings with NRC and industrial representatives relating to standards, codes, and criteria in the emergency preparedness area.

Resolves day-to-day technical and administrative problems concerning all aspects of his projects.

Michael T. Jamgochian

I am thoroughly experienced in the engineering aspects of nuclear reactors and serve as a specialist in the Design Standards Branch, Directorate of Regulatory Standards, U.S. Atomic Energy Commission. I am responsible for the development of reactor standards, codes, and criteria relating to Quality Assurance during nuclear reactor construction testing and refueling.

As part of my regular duties, I serve as a technical expert in developing reactor standards, codes, and criteria with the basic skill and knowledge in the construction, testing, and refueling aspects of nuclear power plants.

I prepare those reactor standards, codes, and criteria associated with the program or portions thereof to which I am assigned and serve as a regulatory contact for AEC nuclear safety research and development programs in these areas.

I provide technical assistance to other AEC Directorates, Divisions, and Offices regarding the application of reactor standards, codes, and criteria to specific reactor problems. I confer with technical representatives of industrial organizations regarding adequacy and application of reactor standards, codes, and criteria relative to quality control for reactor safety.

I participate as a representative of the Directorate of Regulatory Standards on AEC and national committees relating to the development of reactor standards, codes and criteria.

I have a sound knowledge of the basic principles, theories, and practices in the field of nuclear engineering, especially as they relate to the field of reactor plant construction, testing, and refueling. My competence is adequate to enable my evaluation and direction of a wide variety of concepts and programs. My basic skills are in excess of those obtained by formal education at the university level, being supplemented by considerable experience in design, construction, and refueling of nuclear power reactors.

I have a demonstrated ability to grasp technical problems in order to coordinate the formulation of clear, concise reactor standards, codes, and criteria. My knowledge of the Atomic Energy Commission's regulations, principles, and procedures is essential.

I have the ability to meet and deal effectively with technical representatives of the AEC, AEC contractors, industrial, and other government agencies; and have frequent contacts with technical personnel and line management of my own office, Directorate of Licensing, Directorate of Regulatory Operations, and Reactor Development and Technology. I also have contacts with technical personnel from other Government agencies, industry, and research laboratories to evaluate, direct and/or influence technical programs related to reactor safety standards, criteria and guides.

I have full authority to act within the framework of broad functional assignments with little or no supervision on technical matters. My own Administrative guides are AEC Manual and AEC policy, which I use as my source of knowledge. Within this capacity, I represent the Directorate of Regulatory Standards in technical meetings with AEC and indistrial representatives relating to reactor standards, codes and criteria in my assigned work areas.

My current assignments have included projects in the following areas;

a. Natural Phenomenon effects on Nuclear Power Plants
b. Reporting Requirements for Nuclear Power Plants
c. Nuclear Power Plant systems to be protected against tornadoes.
d. Emergency Plans for Nuclear Power Plants
e. Evaluation of explosions near Nuclear Power Plants
f. Requirements for Control Room Manning at Nuclear Power Plants
g. An indepth analysis of sabotage on Nuclear Power Plants
h. Research analysis for Liquid Metal Fast Breader Reactor

I. INTRODUCTION

This position is that of Nuclear Engineer in the Nuclear and Process Control Program Group, Programs Branch, Engineering Division, Planning Department. Its purpose is to fulfill technical responsibility for all functions under the cognizance of this program.

II. MAJOR DUTIES AND RESPONSIBILITIES

A. I approve proposed Contractor instructions and procedures for all nuclear and associated systems involved in the building and/or overhaul of a Naval Nuclear Ship. This approval is necessary to insure that the Contractor's many procedures and instructions comply with the vast number of existing guidelines and requirements implemented upon the Contractor by NAVSHIPS.

In order to assure that the Contractor complies with these requirements, I must be thoroughly knowledgeable and versed in the many restrictions, procedures and concepts outlined in the various Reactor Plant Manuals (NAVSHIPS 389-0049 and NAVSHIPS 389-0167) and the Refueling by Module Replacement Manual (NAVSHIPS 389-0232), the manual for the Control of Testing and Plant Conditions (NAVSHIPS 0989-028-5000) and the manual for the Control of Refueling (NAVSHIPS 0989-018-1000).

However, making a procedure apply to a given ship problem requires a high degree of engineering capability, shipbuilding experience and knowledge. The following are the incumbent's specific areas of delegated technical responsibilities:

(1) Metallurgical Processes encompassing the fields of both process and physical metalluegy for all piping, mechanical and electrical systems and components as related to: welding, casting, forging, heat treatment and brazing of metals including the repair of faulty castings such as impregnation; non-destructive testing of metals including radiography, magnetic particle, liquid penetrant, ultrasonic and gas leak examinations; and destructive testing of metals including reduced section tension, guided bend, impact tests and metallographic examination. To a lesser degree familiarity with non-nuclear processes to support the technical responsibilities of the nuclear and process control program is required.

(2) I represent the Supervisor of Shipbuilding in technical conferences in connection with and as a full member of the Joint Decontamination Group (JDG), Joint Refueling Group (JRG) and the Joint Test Group (JTG) for the overhauls, refuelings and new construction of Naval Nuclear Ships.

The above groups are established to facilitate approval of the many documents for the administration, performance and acceptance for the refueling/testing and/or decontamination of Naval Nuclear Reactors. The above groups are comprised of members who represent the following organizations: A chief Test and Refueling/Decontamination Engineer from Newport News Shipbuilding and Dry Dock Company, NAVSHIPS Code 08 (Atomic Energy Commission), a nuclear engineer from the Reactor Plant Contractor (Westinghouse or General Electric) and the Engineering Officer from the ship being overhauled/constructed. In matters concerning the JRG, JTG and/or JDG the incumbent shall report directly to the Supervisor of Shipbuilding and has full authority to act and sign for the Supervisor of Shipbuilding. The incumbent while representing the Supervisor shall provide an independent review and surveillance for reactor plant testing and refueling operations for the United States Navy and shall review, concur and approve in appropriate test/refueling documents. These documents will be followed verbatum by the Contractor's Shift Test Engineers and Shift Refueling Engineers in order to perform the actual testing and refueling operations on Reactor Plant Systems. I am also considered as the technical expert or specialists for the Supervisor of Shipbuilding in the testing and/or refueling field and may therefore be required to function as the advisory authority relative to refueling/testing.

The review, coordination and the approval for this activity of the decontamination, refueling and testing documents necessary for making reactor procedures applicable for a specific ship is the incumbent's responsibility. Work will encompass at least three ships with the same type of core or two ships with different core types. As such I am responsible for the planning and the scheduling of work, and for resolving significant problems having broad impact. Because of my unique position in Nuclear New Construction, decontamination, repair and overhaul, he must be knowledgeable of and be capable of anticipating and resolving major problems of a unique nature in the entire Reactor Plant System and Components.

(3) Technically supervises, directs, reviews and prepares correspondence on the design, testing and operation of nuclear cognizant items relative to the preparation of facilities and ships for decontamination and refueling of both Contractor and GFM cognizant facilities. These facilities are composed of complex Marine, Hull and Electrical Systems as exist aboard ships and are complex because of the presence of numerous interrelated factors that must be considered with complementary/conflicting engineering requirements and the naval/prototype engineering technique involved. The facilities and systems are subject to continuous improvement processes which result in frequent modification and changes.

(4) Coordinates the review, approves or rejects the Contractor's Nuclear Decontamination, Refueling and Overhaul production work instructions, Reactor Plant Overhaul Instruction (RPOI), Refueling Instruction (RI) and Decontamination Instruction (DI), as applicable, for all nuclear and associated systems. These instructions are the Contractor's vehicles for the repair, overhaul and alteration/renewal of systems aboard ships in the nuclear area.

(5) Technically supervises, reviews and prepares correspondence on the Contractor's storage requirements for unirradiated reactor cores and individual fuel components. This is a critical aspect of a refueling and overhaul yard, since the Supervisor of Shipbuilding is the local custodian for reactor cores and individual fuel components. Therefore, approved storage areas must be available, the required safety procedures must be approved and in effect, and the local procedures used to implement the reactor fuel storage requirements of applicable NAVSHIPS Instruction must be approved and in effect.

(6) Have the technical expertise and engineering background to enable me to write, review and coordinate instructions of original thought such as (a) a Radiation Health Protection Program, that must be followed by all Supervisor of Shipbuilding Personnel, (b) an instruction outlining the functions, duties and responsibilities of the Supervisor of Shipbuilding Representation to the Joint Decontamination, Joint Refueling Group and the Joint Test Group, and (c) a Nuclear Reactor and Radiological Accident Bill that will establish the guidelines followed by the Newport News Shipbuilding and Dry Dock Company and the Supervisor of Shipbuilding in the case of a major nuclear accident. An indepth knowledge and a thorough understanding of the manual for the Radiological Control for shipyards (NAVSHIPS 389-0288), the manual for Control of Testing and Plant Conditions (NAVSHIPS 0989-028-5000) and the manual for the Control of Refueling (NAVSHIPS 0989-018-1000) is most definately required.

(7) Establish, write, coordinate and conduct a nuclear testing and refueling indoctrination program for prospective representatives of the Joint Test and Joint Refueling Groups for the Supervisor of Shipbuilding. I am responsible to lecture and train on all facits of the refueling, testing, Radcon, Chemistry, Reactor Plant Safety and other related nuclear tasks that will be conducted during the overhaul and new construction of a Naval Nuclear Reactor. The prospective recipients of the above indoctrination program will include Senior Naval Officers and therefore the training program must be conducted with the utmost of professional ingenuity and technical expertise.

III. POSITION CONTROLS

A. This position is under the administrative supervision of the Head of the Nuclear and Process Control Program. I have considerable latitude in discharging the responsibilities of the program instructions and assignments, provided in only the most general terms of overall policy and objectives.

B. I am held responsible for completed staff work and work is reviewed only to insure conformance to overall policy and completion of overall objectives. I consult with the Program Head only on the most controversial matters of policy and delegated staff work. I have complete technical approval authority on delegated engineering matters in MY specialty, which fall within the purview of authority granted.

Enclosure (3)

Michael T. Jamgochian

ENCLOSURE (4)

DESCRIPTION OF WORK:

I. I was assigned to assist the Refueling Program Manager in exercising his overall responsibility for a Refueling Program, involving the technical direction, review and coordination of all Shipyard effort for that program.

a. During the planning phase of the refueling program, I;

(1) Performed planning tasks to delineate or scope major projects and define their interrelationships in a refueling program. I prepared documents, such as, instructions sequences, drawings and procedures which form the basis for the overall Shipyard planning and coordination. For example, I prepared sequences of major events, or established administrative control procedures for log data and reports, or prepared lists establishing cognizance, target dates and scope of all planning actions required for that refueling program, in order to insure complete and timely action.

(2) Performed engineering work on one or more major projects or tasks of the refueling program for which I was expected to master all aspects and act as expert advisor to the Refueling Program Manager. For example, I was assigned to prepare operation plans, training plans, service requirements, station bills and technical instruction for receiving, receipt inspecting, storing, transporting, preparing and installing new reactor fuel. As another example, I was assigned to prepare requirements for facilities and services in support of the refueling, including arrangement drawings, operational specifications and construction requirements for clean room, lifting and handling equipment, fluid and electrical services, and emergency services, bills and procedures. For these projects I was required to insure proper correlation with other aspects of the refueling work and would often require extensive coordination with engineers and other personnel in other Shipyard departments and divisions and with activities external to the Shipyard. I would be required to resolve conflicting or controversial requirements by means of compromises and agreements with these activities.

b. During the performance of the refueling program, I:

(1) Directed operations in progress in order to insure that technical, safety and administrative requirements of the refueling are being met. I provided authoritative on-the-spot interpretation of existing directives. I was responsible for the overall operation of refueling

work on the shift to which I was assigned including the resolution of any potential interferences between refueling operations and any other work in-progress on the ship. This on-the-job technical direction involved extensive coordination of all trades and services as well as representatives of the Shipyard external activities, such as Ship's Force, NAVSHIPS and Reactor Plant Contractor Representatives. I frequently resolved critical problems of performance with several limitations imposed by schedular requirements, safety and cost.

The safe and efficient performance of refueling work depended largely on my training and experience. To prepare for this assignment I participated in extensive Shipyard training for the specific refueling, including operational practice using the refueling equipment and procedures.

During performance of the refueling I made technical decisions concerning deficiencies occurring during the refueling. I prepared reports describing the cause and responsibility for these discrepancies and recommending a course of action for resolution with due regard to the effect on the refueling program schedule and scope. Generally, the problems assigned for investigation and resolution fall within the area of my assignment as technical expert in paragraph a.(2) above and is an extension of that responsibility.

I was also assigned to resolve problems occuring in other areas where I would have first-hand information due to presence on the job or other factors. I was expected to resolve conflicting, controversial or inadequate data relating to the problem and arrive at an authoritative technical recommendation within very short deadline periods, usually from a few hours to a day, in order to insure continuity of the refueling program.

c. Recent projects performed are as follows:

(1) I was responsible for the advanced planning in conjunction with readying the refueling facilities and requirements for refueling of S2W, S2C and S5W nuclear reactors.

(2) I was an assistant refueling director on the core cartridge replacement refueling of the USS SEAWOLF, SSN575.

(3) I was a refueling director on the core cartridge replacement refueling of the USS NAUTILUS SSN571. In this capacity I performed advance planning, prepared planning papers and maintained technical control of the production work by supervising a complement of 12 to 15 trade people during a shift. To attain this position I attended formal classroom training to become qualified, plus visits to the prime contractor for advance planning and familiarization.

Encl (4)

Michael T. Jamgochian

(4) I was an assistant refueling director in the module refueling of the S5W plant on the USS SAM HOUSTON SSBN609.

(5) I was a refueling director in the module refueling of the S5W plant on the USS ANDREW JACKSON SSBN619.

(6) I was assigned as the on shift tech code representative for the initial fueling (core loading) of the USS GRAYLING SSN646.

(7) I participated in the planning phase of work for the backfit refueling of the SSBN635.

(8) During my last two years at Portsmouth Naval Shipyard I participated as an instructor in the following training programs:

New Engineers Indoctrination Course

Nuclear Refueling Training Course

Quality Control Training Course

New Trades Personnel Training Course

Encl (4)

Michael T. Jamgochian

ENCLOSURE 5

DESCRIPTION OF WORK:

A. I was responsible for planning, coordination, correct and complete sequencing and technical adequacy of Shipyard work for receipt, handling, installation and preparations for operation of new reactor cores and associated subassemblies.

I prepared procedures, specifications and instructions. These documents were compiled and adapted from many component instruction books and drawings. All of these prepared documents met the requirements of the Bureau of Ships and the Atomic Energy Commission. I formulated and prepared detailed instructions for special work requirements, such as cleanliness criteria and selected overall work sequences from many alternative possibilities to determine the most economical, safe and technically adequate procedures. In the production phase of the work, I followed-up my instructions to insure compliance and to provide timely guidance and technical advice on all matters relating to this work. In addition, I reviewed and concurred in engineering evaluation provided to the Shipyard by contractor activities in the field of reactor core operations.

B. I was responsible to the Section Head for the technical direction of Shipyard work relating to procedures, facilities and equipment for the handling of spent reactor core modules and core components during repair and refueling of nuclear powered submarines. The purpose of this function was to adapt and intergrate into the Shipyard work all pertinent nuclear science and technology developed in outside activities applicable to development of refueling procedures and capabilities and to provide for authoritative technical direction of Shipyard work in this area. As this work had little or no precedent and many facets were critical or controversial, I used initiative and judgement in the selection of methods and techniques. I was expected to be familiar with all pertinent nuclear engineering and practices in my cognizant work and therefore was kept abreast of current outside developements.

(1) When the Shipyard was required to perform work in support of design of the spent reactor core module handling equipment, I participated with the Bureau of Ships and reactor plant vendors in studies of the complex engineering problems relating to the refueling of the nuclear reactor. From these studies I established requirements and developed procedures and projects for testing the operational characteristics of the refueling scheme. In the course of such investigations, I developed many unique and intricate mechanical devices associated with and necessary for completion of the project.

(2) In the special field of refueling a nuclear reactor plant either by full core cartridge refueling or module replacement, I originated procedures, drawings, facility requirements, manning requirements, personnel qualifications and any other requirement necessary for the accomplishment of the work. Where necessary I obtained Bureau of Ships or reactor plant designer's approval or concurrence. In order to obtain understanding and cooperation in preparation for this work, I frequently discussed phases of the work with design engineers and with production personnel such as leadingmen, quartermen and masters or foremen, schedulers and progressemen and Ship Superintendents within the Shipyard, reactor plant designers' and contractors' engineering representatives and Bureau of Ships personnel outside the Shipyard. I was also required to obtain action or provide advice through discussions of phases of work with Shipyard Public Works supervisors and engineering personnel and Supply Department supervisors.

C. I reviewed and approved for technical adequacy and for conformance with nuclear power specification, cognizant and supporting work performed by engineering organizations engaged in design of systems, facilities and equipment required for support of work and for actual installations on nuclear powered submarines.

(1) I was kept abreast of such matters as arrangements, functions and equipment requirements for shipboard laboratories of nuclear powered submarines. I provided advice, requirements, review and concurrence for those plans prepared by other engineering organizations.

(2) I coordinated Shipyard assigned work in the development of reactor core handling facilities, systems or equipment. By means of memoranda and other written instructions and by discussions and conferences with involved personnel, I provided guidance, resolved problems and planned work pertaining to reactor core handling equipment.

Exhibit 105.1
received
10/15/75
Cures
new file: VY/Emergency
Planning

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

October 10, 1975

Alternative Energy Coalition
of Massachusetts
Mr. Francis Koster
Room 200, Hills North
University of Massachusetts
Amherst, Massachusetts 01002

Alternative Energy Coalition
of Massachusetts
Mr. Samual Lovejoy
Box 66
Turners Fall, Massachusetts
01376

Alternative Energy Coalition
of Massachusetts
Mr. Fred Zapinski
Box 269, Chestnut Hill Road
Montague, Massachusetts 01351

Gentlemen:

On July 23, 1975, you requested that the NRC suspend the operating license of Vermont Yankee Nuclear Power Station and investigate the adequacy of Yankee Nuclear Power Station's emergency evacuation plan. Suspension of the license was requested because the Vermont Yankee Nuclear Power Station allegedly was failing to comply with the NRC regulation, 10 CFR Part 50, Appendix E, in that the emergency evacuation plan filed by Vermont Yankee Nuclear Power Corporation is not maintained in an up-to-date fashion, nor is it fully tested annually. The request included a copy of your testimony on this subject before the Massachusetts Commission on Nuclear Safety.

NRC regulation 10 CFR Part 50, Section 50.34(b)(6)(v) requires that each applicant for a license to operate a nuclear power station submit, in the Final Safety Analysis Report, plans for coping with emergencies which include the items specified in Appendix E of that part. Vermont Yankee Nuclear Power Corporation submitted their plans and the NRC determined the plans were in conformance with the regulations. The acceptance by the NRC is documented in its Safety Evaluation Report for Vermont Yankee issued in June 1971.

From information contained in your request, specifically in your testimony before the Massachusetts Commission on Nuclear Safety, it appears your concerns regarding maintenance and testing of evacuation plans focus primarily on the adequacy of State and local government emergency preparedness. Since serious accidents which have been postulated for nuclear power plants could affect both on-site and off-site persons, coordination between licensees and State and local government agencies in planning and maintaining a satisfactory state of emergency preparedness in their respective areas of responsibility and authority is considered an important matter. For this reason, 10 CFR 50, Section IV.D of Appendix E requires

that applicants develop agreements with, and procedures for notifying, State and local agencies for the early warning of the public and for public evacuation or other protective measures should these become necessary or desirable in the event of a radiological emergency. This regulation requires, essentially, that licensees develop a supportive interface between the nuclear facility operating organization and those State and local government agencies who may find it necessary to respond to an emergency situation.

Vermont Yankee Nuclear Power Station's emergency plan contains provisions which satisfy the criteria of Appendix E, including procedures for notifying and agreements with State and local agencies and provisions for maintaining the emergency plan up-to-date. An inspection on emergency preparedness at the Vermont Yankee facility in September 1974 verified that implementing procedures are adequately maintained in an up-to-date condition and that a supportive interface does exist between the nuclear facility and State and local government agencies. Although a number of problems were identified during the September 1974 inspection, only one involved noncompliance with regulatory requirements. The licensee has made commitments to correct all problems in a timely manner; future inspections will determine if the commitments have been completed.

Your request also stated that Vermont Yankee's emergency plan is not fully tested annually. Specifically your testimony before the Massachusetts Commission on Nuclear Safety emphasized that drills which have been conducted by the licensee did not test citizen movement capability and did not test the interstate communication link.

Your concerns regarding interstate communications and evacuation of nearby populations are, again, related to offsite emergency preparedness, which is under the purview of State and local governments. These are the organizations who have and exercise the legitimate police powers involved with evacuations of areas in the public domain which may be affected by natural or man-made disasters or emergencies. Similarly, these are the organizations which are expected to establish and maintain interstate communications links. In this connection, however, it is relevant to point out that the Vermont Yankee Emergency Plan provides for direct notification to appropriate officials in the States of Vermont, New Hamphsire, and Massachusetts in the event of a general emergency.

NRC recognizes the need for tests and drills in Section IV.I of Appendix E, which requires that applicants make provisions for testing, by periodic drills, of radiation emergency plans and provisions for

participation in the drills by other persons whose assistance may be needed in the event of a radiation emergency. Vermont Yankee Nuclear Power Station meets the requirements of Appendix E by performing emergency plan drills at least once each year. This has been verified by NRC inspections. NRC regulations do not require the licensee to test citizen movement capability although they do require participation in the drills by persons whose assistance may be needed in an emergency.

On the basis of our review, we have concluded that Vermont Yankee Nuclear Power Station has met regulatory requirements relating to emergency planning, and there appear to be no facts sufficient to justify taking the action requested in whole or in part. The request by the Alternative Energy Coalition of Massachusetts for the suspension of the operating license of Vermont Yankee Nuclear Power Station is denied.

You also requested an investigation of the adequacy of Yankee Nuclear Power Station's emergency plan. That facility obtained an interim operating license in July 1960, prior to the 1971 effective date for Appendix E of Part 50. Their emergency plan, therefore, was not reviewed against the criteria of Appendix E. However, in May of this year, the NRC requested the submittal of Yankee Rowe's emergency plan for the purpose of a review against current criteria. This request was complied with in June 1975 and that plan is currently under review.

The records of the NRC inspection program show three inspections last year in the area of emergency planning for the Yankee Nuclear Power Station. These inspections identified certain areas where additional attention was required by the licensee; however, there were no items of noncompliance with regulations or license conditions. The licensee has agreed to correct these problems and future inspections will determine if the corrections have been completed.

On the basis of our review and the findings from the routine, ongoing inspection program, we have determined that the Yankee Nuclear Power Station has satisfied the regulatory requirements related to emergency planning. Since there appears to be no basis for conducting a special investigation into the adequacy of Yankee Nuclear Power Station's emergency plan, your request for an investigation is denied.

Sincerely,

Donald F. Knuth

Donald F. Knuth, Director
Office of Inspection and
Enforcement

cc: see next page

cc: Yankee Atomic Electric Company
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Mr. Wallace Stickney
Environmental Protection Agency
JFK Federal Building
Boston, Massachusetts 02203

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 205[illegible]

Exh. b. T 1049

[illegible] 1976

MEMORANDUM FOR: R. B. Minogue, Director
Office of Standards Development

FROM: Roger J. Mattson, Director
Division of Siting, Health and
Safeguards Standards

SUBJECT: BACKGROUND INFORMATION ON REGULATORY GUIDE 1.101, "EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS," REVISION 1

This guide describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to the content of emergency plans for nuclear power plants, primarily in the FSAR stage. The guide was published for 60-day public comment on November 20, 1975. Numerous comments were received from the public. Enclosure 1 outlines the final resolution of each comment after the staff evaluation.

Major Office Comments

Copies of the guide, with changes resulting from public comments, were reviewed by RES, I&E, NRR, OSP, NMSS and ELD. Comments were received from all offices and were appropriately resolved.

The ACRS Environmental Subcommittee, in open session on August 24, 1976, reviewed this regulatory guide. Numerous comments were submitted to the staff for its evaluation and final resolution. The staff met with Dr. Moeller and resolved all comments resulting in an ACRS approval letter to Mr. Lee V. Gossick dated September 13, 1976. A copy of the meeting minutes, subcommittee comments and approval letter is available in the Public Document Room. Likewise, it was agreed that the ACRS approval is made with the understanding that additional guidance in the overall area of Emergency Preparedness is under development and will be forthcoming.

Implementation Schedule

The implementation schedule shows the guide to be effective immediately, as it reflects current staff practice.

RRRC Review

The guide was reviewed as a working paper by RRRC on August 15, 1975, and recommended for approval. It was not resubmitted to RRRC in its present form as Revision 1 because the overall changes were of a clarifying nature and were not substantive changes of position.

Roger J. Mattson, Director
Division of Siting, Health and
Safeguards Standards
Office of Standards Development

Enclosures:
1. Public Comments with Staff Resolutions
2. Draft of Revision 1 to Regulatory Guide 1.101

bcc: Margaret Sparks

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Jamogochian

SD Task # SS-515-4

OFFICE ▶	SD:SDSB	SD:SDSB	SD:A/D-SHS	SD:D-SHSS		
SURNAME ▶	MTJamgochian	EEHeld	ICRoberts	RJMattson		
DATE ▶	11/4/76	11/5/76	11/ /76	11/ /76		

Renewed

DRAFT
MJamgochian/lt/6/14/2:15 p.m.

Exhibit 1050

ISSUES

Issue 1. Should NRC concurrence in the associated State and local emergency response plan be a requirement for continued operation of any nuclear power plant with an existing operating license? If so, when should this general requirement become effective?

Discussion of Alternatives

~~This~~ issue should be guided by the fact that the underlying rationale for emergency planning requirements should be the consideration that they arise as a matter of prudence. Emergency planning should be considered as ~~the~~ one final element of the Commission's policy of defense-in-depth. It has as its objective the management and reduction of residual risk to the public health and safety to a level which prudent judgment finds readily achievable and reasonable. ~~It should recognize the possibility~~ that emergency situations can arise in the operation of nuclear power plants for which it is prudent to have established, in advance, some plans for amelioration of what otherwise might be unnecessarily excessive radiological exposures to the public. ~~But it should also recognize that seriously consequential accidents are not, as a practical matter, really expected to occur.~~ The question of any absolute need to protect the public by requiring plans to take such measures should be moot, and it should not be construed that the existence of planning requirements derives from any lack of faith in the safety of nuclear power plants which are licensed to operate. The Commission's licensing decision process, apart from emergency planning and preparedness matters, is structured to assure the full utilization of standards and criteria in the evaluation of

proposed nuclear power plants to the end that substantial conservatisms exist in design and operating safety margins, and that there be no undue risk to the public health and safety in their operation.

In line with this is the fact that a State has an NRC "concurred-in" emergency plan does not in itself provide any more "...reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect the public health and safety..." than now exists as a result of our current licensing and inspection process. The concurrence function, in fact, only indicates that a State has adequately addressed in its emergency plans the "essential elements" in NUREG 75/111. This was brought up in the hearing on May 14, 1979, before the Subcommittee on Environment, Energy and Natural Resources, when Chairman Moffett asked what it really meant to have an NRC concurrence. Does it indicate that a plan is a good one? Or are we just creating an "illusion of protection"? That was a phrase used by Mr. Moffett several times--an "illusion of protection." Mr. Moffett noted that three counties surrounding Indian Point did not have emergency plans for dealing with a nuclear accident despite an NRC concurred-in State plan. He asked how a State plan can be considered adequate if it does not include local government involvement. He noted that the GAO will be investigating what it means to have an NRC concurred-in plan and just how adequate such a plan might be for responding to an actual emergency.

Likewise, the staff has looked at the history of past evacuation and note that evacuation of people is a common occurrence (about one per week) in our society. These evacuations, many times, occurred without plans or drills, some of which are noted below:

On January 19, 1973, 3,000 out of an overall population of 3,300 people were evacuated from Morgan City, Louisiana, in 4 hours. On June 2, 1972, 8,700 out of an overall population of 9,000 people were evacuated from Rapid City, North Dakota, in 1 hour and in 1971, 80,000 out of an overall population of 81,000 people were evacuated from an area in Los Angeles in 6 hours. The first two of these evacuations were conducted with the use of existent evacuation plans. The Los Angeles evacuation was performed due to an impending collapse of a dam and without the benefit of an evacuation plan.*

Nonetheless, since Three Mile Island our current way of doing business has raised a number of questions about the legal requirements for and the adequacy of NRC's, licensees', and State and local governmental emergency response plans.

We currently require that applicants plan for radiological emergencies within their plant site and have in place procedures for notifying and agreements reached with local, State, and Federal officials and agencies for the early warning of the public and for public evacuation or other protective measures should such warning, evacuation, or other protective measures become necessary or desirable, including identification of the principal officials, by title and agencies.

We now consider that expanding our current requirements by providing a detailed analysis of offsite emergency response capabilities in the licensing and inspection process would in reality provide the "reasonable assurance that appropriate measure can and will be taken in the event of an emergency to protect health and safety of the public.

*Source: EPA-520/6-74-002: Evacuation Risks - An Evaluation

Exhibit 1047

Parler 417

MAY 8 1979

MEMORANDUM FOR: Wayne R. Houston, Chief, Accident Analysis Branch, NRR

FROM: Michael T. Jamgochian, Site Designation Standards Branch, SD

SUBJECT: RECONSIDERATION OF EMERGENCY PLANNING REGULATIONS AND GUIDES IN LIGHT OF TMI EXPERIENCE

In response to Lee Gossick's request at our meeting of April 24, 1979, I am transmitting a list of issues that should be considered when evaluating NRC's Emergency Planning regulations and guides in the light of TMI.

I believe that the entire subject of emergency preparedness needs to be thoroughly reviewed to determine precisely what changes to the regulations and regulatory guides are needed. I recommend that a Working Group be established to conduct the review and to evaluate required changes focussed on the emergency planning regulations and regulatory guides.

In conducting this review and evaluation the Working Group would examine current authority and practices as well as regulations and guides with a view toward recommending new legislation. Because emergency planning is fragmented among several NRC Offices, I recommend that the Working Group be inter-office in nature with SD, NRR, SP, IE, NMSS and RES participating. After such a Working Group has conducted its review and evaluation, SD would proceed with appropriate rule changes and regulatory guide revisions. Among the issues which I think the Working Group should address are the following:

I. Leadership during an emergency:

- Chairman or collegial body making decisions for Commission during emergency
- NRC or licensee control during emergency
- NRC relationship to other Federal agencies having emergency responsibilities

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OFFICE ➤						
SURNAME ➤						
DATE ➤						

NRC FORM 318 (9-76) NRCM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

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SD Rdg
SD Alpha
SDSB Rdg
SDSB Subj

W. Houston - 2 -

II. Notification

- Reassessment of present notification requirements to both NRC and State/local authorities, including:

  a. Placement of offsite detectors with readouts in the local CD office and State Rad. Health Dept.

  b. Establishment of meteorology data and readout capability in the local CD office, State Rad. Health Dept. and the offsite control center.

III. Communications:

Adequacy of present systems to function adequately in an emergency, including evaluation of such options as:

a. Requiring establishment of an emergency regional response capability (e.g. all states within 10 miles of the plant) prior to licensing.

b. Requiring that an applicant make appropriate arrangements for emergency planning with State and local officials out to a 10 mile radius.

IV. Emergency Capability - Continued reliance on State/local authorities, including:

a. Mechanisms to evaluate and assure that estimated evacuation times established by State and local governments can in fact be accomplished under a variety of accident conditions.

b. NRC concurrence in State emergency plans prior to issuing a license.

V. Emergency Capability - Reliance on licensee capabilities, such as:

- Requirements that licensees make arrangements (with colleges, other utilities, consultants) to assure adequate staffing during a prolonged emergency.

Emergency Capability - Improvement of NRC response capability.

SD Task no. SD n/a

7908110-43

OFFICE	SD:SDSB	SD:SDSB	Michael T. Jamgochian Site Designation Standards Branch Office of Standards Development			
SURNAME	MJamgochian:em	PComella				
DATE	5/8/79	5/8/79				

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Exhibit 1048

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

JUN 20 1979

MEMORANDUM FOR: Harold R. Denton, Director, NRR
William J. Dircks, Director, NMSS
Saul Levine, Director, RES
Robert B. Minogue, Director, SD
Robert G. Ryan, Director, SP
Howard K. Shapar, ELD
Victor Stello, Director, IE

FROM: Lee V. Gossick, Executive Director for Operations

SUBJECT: TASK FORCE ON EMERGENCY PLANNING

The membership of the Task Force on Emergency Planning has been expanded to accommodate requests of Office Directors' representatives. The current Task Force membership is as follows:

Tom Carter, NMSS - Chairman
Justin Long, NMSS - Secretary
Brian Grimes, NRR
Wayne Houston, NRR
Jay Durst, RES
Pat Comella, SD
Mike Jamgochian, SD
Dudley Thompson, IE
Harold Collins, SP
Marshall Sanders, SP
Roy Voegeli, ELD

The Task Force is drawing upon the expertise of various staff members in describing NRC's current emergency planning process. This effort is organized as a subtask under the direction of Jay Durst, RES:

Charlie South, NMSS - Subtask Leader
Ray Priebe, NRR
John Sears, NRR
Jim Sniezek, IE
Hal Gaut, SP
Jim Dukes, SP
Fred Fisher, NMSS
George Kligfield, NMSS
Frank Lomax, NMSS

Due in most part to the support of your offices, the Task Force appears to be on schedule. Tom Carter and I both appreciate the efforts of the individual contributors and your cooperation in making these people available to support this Task Force effort.

(Signed)

Lee V. Gossick
Executive Director for Operations

cc: Chairman Hendrie
Commissioner Gilinsky
Commissioner Kennedy
Commissioner Bradford
Commissioner Ahearne
SECY
OPE
OGC
MPA
Task Force Members
Subtask Group Members

M. T. Jankowski's proposed changes to Emergency Planning Regulations

Exhibit 1046

10 CFR Part 50, §50.33

Section 50.33, §50.33(g), is amended by deleting the word "[Reserved]" and by replacing it with three sentences that read as follows:

§50.33 Contents of applications; general information.

* * * * * *

(g) The State and local government emergency response plans of all governmental entities wholly or partially within the Emergency Planning Zones (EPZ) that have been reviewed and concurred in by NRC shall be submitted prior to the issuance of an operating license. Generally, the EPZ for plume exposure pathway for light water nuclear power plants shall consist of an area approximately 10 miles in radius, and an area approximately 50 miles in radius for the EPZ ingestion pathway. In determining the size and configuration of the EPZs surrounding a particular nuclear power plant, consideration shall be given to such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

10 CFR Part 50, §50.54
(continued)

(t) If during the life of a licensed facility the Commission determines that the licensee has failed to maintain an adequate state of emergency preparedness through periodic evaluation of licensee drills, exercises, and procedures, the licensee shall review his program and provide, within ___ days, a report to the appropriate NRC Regional Office on all corrective action completed.

A license may be revoked, suspended, or modified for failure of the licensee to maintain an adequate emergency preparedness capability.

used in the detailed implementation of emergency plans [need-not] shall be [described] submitted in the [preliminary-or] final safety analysis report, but should not include details that can reasonably be expected to change from time to time, e.g., names, telephone numbers, specific items of equipment and supplies.

II. The Preliminary Safety Analysis Report

The Preliminary Safety Analysis Report shall contain sufficient information to assure the compatibility of proposed emergency plans with facility design features, site layouts, and site location with respect to such considerations as access routes, surrounding population distributions, and land use for the Emergency Planning Zones[2].

As a minimum, the following items shall be described:

A. The onsite and offsite organizations for coping with emergencies, and the means for notification, in the event of an emergency, of persons assigned to the emergency organizations;

B. Contacts and arrangements made and documented, [or-to-be-made,] with local, State, and Federal governmental agencies with responsibility for coping with emergencies, including identification of the principal agencies.

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[2]Generally, the EPZ for plume exposure pathway for light water nuclear power plants shall consist of an area approximately 10 miles in radius, and an area approximately 50 miles in radius for the EPZ for ingestion pathway. In determining the size and configuration of the EPZs for a particular nuclear power plant, consideration shall be given to such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

III. The Final Safety Analysis Report

The Final Safety Analysis Report shall contain plans and procedures for coping with emergencies. The plans and procedures shall be an expression of the overall concept of operation, which describes the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. It should incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information should be sufficient to ensure coordination among the supporting groups and between them and the licensee. The details of these plans and [~~the details of~~] their implementation procedures need [~~not~~] to be submitted. However, the submitted implementation procedures should not include details that can reasonably be expected to change from time to time, e.g., names, telephone numbers, specific items of equipment and supplies. The plans submitted must include a description of the elements set out in Section IV to an extent sufficient to demonstrate that the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property for the Emergency Planning Zone (EPZ)[2].

(3) written identification, by position or function, of other employees of the licensee with special qualifications for coping with emergency conditions which may arise. Other persons with special qualifications such as consultants who are not employees of the licensee and who may be called upon for assistance for short- and/or long-term emergencies shall also be identified. The special qualifications of these persons shall be described;

B. ASSESSMENT ACTIONS

Means for determining the magnitude and continued assessment of the release of radioactive materials, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies and the [Atomic Energy] Commission and other Federal agencies, and the emergency action levels that are to be used as criteria for determining when protective measures should be considered within and outside the site boundary to protect public health and safety and prevent damage to property. These emergency actions levels that are to be used as criteria for notification and action shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring;

C. ACTIVATION OF EMERGENCY ORGANIZATION

Describe the entire spectrum of emergency conditions which involve the alerting or activation of progressively larger segments of the total emergency organization. Describe the communication steps taken to alert or activate emergency personnel under each class of emergency. Emergency action levels

E. EMERGENCY FACILITIES AND EQUIPMENT

Provisions shall be made for emergency facilities, including:

(1) Equipment at the site for personnel monitoring;

(2) Facilities and supplies at the site for decontamination of personnel;

(3) Facilities and medical supplies at the site for appropriate emergency first aid treatment;

(4) Arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies;

(5) Arrangements for transportation of injured or contaminated individuals to treatment facilities outside the site boundary;

(6) Arrangements for treatment of individuals injured in support of licensed activities at treatment facilities outside the site boundary;

(7) One onsite and one offsite Emergency Control Center;

(8) At least one onsite and one offsite communications systems including redundant power sources.

F. TRAINING

A program shall be provided [Provisions] for (1) the training and testing, by periodic drills, of radiation emergency plans to assure that employees of the licensee are familiar with their specific emergency response duties, and [provisions] (2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency. This shall include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel:

H. RECOVERY

Criteria to be used to determine when, following an accident, reentry of the facility is appropriate or when operation should be continued.

V. Implementing Procedures

Within 180 days prior to scheduled issuance of an Operating License and as necessary to maintain them up to date thereafter, controlled copies of emergency plan implementing procedures shall be submitted to the appropriate NRC Regional Office.

Exhibit 1045

SECY-77-263

May 25, 1977

For: The Commissioners

From: Robert B. Minogue, Director, Office of Standards Development

Thru: Executive Director for Operations

Subject: PUBLIC INTEREST RESEARCH GROUP, ET AL. PETITION FOR RULEMAKING TO REQUIRE APPLICANTS AND LICENSEES FOR NUCLEAR POWER PLANTS TO INSTRUCT CITIZENS IN PUBLIC EVACUATION PROCEDURES AND TO CONDUCT ACTUAL PUBLIC EVACUATION DRILLS

Purpose: To obtain Commission approval of NRC response to the Public Interest Research Group (PIRG) petition for rulemaking.

Category: This paper concerns a petition for rulemaking in a major policy area.

Issue: Whether NRC should grant the petition by requiring applicants and licensees on an annual basis to: (1) disseminate emergency preparedness plans to the public within a 40-mile radius of the facility, (2) disseminate information explaining these plans through educational sources and the public media, including printed and electronic media, (3) conduct actual public evacuation drills in 7-degree sectors within that radius, and (4) require the submittal of the facility's detailed emergency plans and implementation procedures for NRC review.

Decision Criteria:

1. Whether the promulgation of the proposed rule would provide increased protection of the health and safety of the public;

2. Whether the existing emergency preparedness program adequately provides for the protection of the health and safety of the public.

Alternatives:

1. Deny the petition and issue notice of the denial (thereby not changing current policy with regard to emergency planning).

2. Grant the petition in part and issue a notice of proposed rulemaking.

Contact:
M.T. Jamgochian
443-5317

3. Grant the entire petition and issue a notice of proposed rulemaking.

Background:

On August 6, 1975, Mr. L. J. Sirico, Jr., and Mr. M. H. Rogol filed a petition for rulemaking with the NRC (Docket No. PRM-50-14) on behalf of the Public Interest Research Group and 30 other specified citizen groups.

The petitioners requested that the Commission amend 10 CFR Part 50 to require nuclear facility licensees and license applicants to disseminate emergency preparedness plans as well as information explaining these plans and to actually test public evacuation plans in realistic drills. Finally, the petitioners requested that the Commission amend Part 50, Appendix E, Section III, to require that Final Safety Analysis Reports include details of emergency plans and implementation procedures.

A Notice of Filing of Petition for Rulemaking was published in the Federal Register on September 23, 1975, requesting all interested persons who desired to submit written comments or suggestions concerning the petition for rulemaking to do so on or before November 24, 1975. Approximately 85 comments were received.

No State governments commented on the Notice. Recognizing that State governments have a vital role as well as extensive experience in handling and planning for emergencies, the staff sent a letter to the Governor of each State on April 26, 1976, requesting their comments.

A summary of all comments received is attached as Enclosure "B".

Discussion:

The petitioners contend that public education is essential to making evacuation plans effective, that public discussion of evacuation plans and full-scale public drills are necessary to assure the soundness of emergency plans, and that the Commission has a special duty to minimize the damage wrought by a nuclear incident. NRC was requested to amend its regulations by adopting the elements described in the petition for rulemaking. Each element of the petition is listed below with a discussion of current NRC requirements, followed by a staff analysis and conclusion:

A. The petitioners request that licensees and applicants distribute instructions explaining what emergency safety steps, including directions for public evacuation, the citizen should take in case of a nuclear incident to each household, place of business, public institution, and other establishment within at least a 40 mile radius of the facility. (See Enclosure "E" for detailed pro and con analysis.)

Presently, NRC's regulations require nuclear facility licensees and license applicants to provide a copy of their emergency preparedness plan with the Final Safety Analysis Report (FSAR). A copy of the FSAR is kept in the NRC Public Document Room as well as in a location near the site of the nuclear power plant. Both copies are available for public inspection.

Based on the staff's experience working with States over the course of years, as well as our assessment of the comments received from the States, we believe that it is essential that the state emergency coordinator have substantial flexibility to deal with the complexity of planning for emergencies and to modify such plans from time to time as needs arise. A program for initial dissemination of such plans should be coupled with an adequate followup program to assure that modifications are provided to all persons possessing the initial plan, in order to avoid the simultaneous existence of differing versions of the same plan. Such widespread dissemination of all revisions to the plan to every household, and other establishments, within 40 miles of a facility would be very difficult.

In addition, the specific action to be taken in any instance must be evaluated and based upon the best information available at that time, and such actions must be centrally coordinated to assure that they are not mutually counterproductive. For example, the egress patterns selected by the emergency coordinator could become congested if occupants that are not in the downwind sector evacuate and merge with the downwind sector evacuees. Wide dissemination of detailed complex plans could result in increased unnecessary casualties caused by misinterpretation of complex and variable conditions in terms of the nature of the release and effect of meteorological conditions.

The staff also considers that the motivation to learn and to remember what has been learned--and then be able to use the knowledge in the form of appropriate action in coping with highly improbable events--is considerably low. On the other hand, information and procedures, if authoritative and relatively simple, when given under threatening conditions or at the onset of a disaster are assimilated rapidly and produce high levels of compliance. In rapidly-developing emergencies, reliance is commonly placed on the distribution of minimal information which is required to produce effective public response.

However, it appears that a number of States feel that a more limited distribution of general information to persons living close to the facility may be desirable.

For these reasons, the staff does not consider it is advisable to provide for mandatory widespread dissemination of emergency plans. Such information should, of course, be reasonably available to those members of the public who desire to know. This is current Commission policy. On the basis of the above analysis, the staff concludes that this element of the petition for rulemaking should be denied because it would provide no improvement in protecting the health and safety of the public.

B. The petitioners request that licensees and applicants disseminate information explaining emergency plans through educational sources and the public media, including both printed and electronic media (see Enclosure "F" for detailed pro and con analysis). Currently, NRC guidance (in Regulatory Guide 1.101, Emergency Planning for Nuclear Power Plants) provides for licensees and applicants "...to make available on request to occupants in the low population zone information concerning how the emergency plans provide for notification to them and how they can expect to be advised what to do..." in the unlikely event of an emergency.

The staff also considers that all emergency actions will depend upon the nature of the nuclear accident and the resulting threat, the prevailing weather and environmental conditions, and the location of the individual relative to the power plant. In some circumstances it would be best for the individual to remain in his home rather than to leave. Information explaining the emergency plan would be so general as to be subject to misinterpretation and would be of little help; or, if written to cover the wide range of possibilities, would be too complex for the public to understand or follow in an emergency. A simple instruction directing public evacuation by pre-set routes in the event of any threatening nuclear accident could be in error in particular circumstances.

On the basis of the above analysis, the staff concludes that this element of the petition for rulemaking should be denied because it would provide no improvement in protecting the health and safety of the public.

C. The petitioners also requested that NRC require licensees to test public evacuation plans in annual realistic drills (see Enclosure "G" for detailed pro and con analysis). Currently, NRC regulations do not require licensees to test public evacuation plans in realistic drills, but licensee emergency plans are tested on an annual basis. Members of the licensee's emergency organization are required to participate in these drills, and provisions exist for participation in the drills by other persons whose assistance may be needed in the event of a radiation emergency.

In evaluating this element of the petition the staff notes that EPA analyzed the inherent dangers involved with public evacuation and has provided the following information. There are 2.4×10^{-8} deaths per person-mile and 9×10^{-7} injuries per person-mile for transportation by automobile. If an evacuation (actual or drill) required an evacuee to drive 20 miles, the risks would be approximately 5×10^{-7} of death and 2×10^{-5} of injury per evacuation. Thus there are potential costs in terms of deaths and injuries to the public associated with evacuation drills.

To put these costs in perspective the staff compared them with risks estimated in the Reactor Safety Study. This Study (WASH-1400) estimated that the risk to an individual located about 10 miles from the reactor site as a result of a reactor accident is about 5×10^{-11} per reactor-year of early death and 2×10^{-9} per reactor-year of latent cancer death. Although the equivalent probabilities would be higher for individuals at the site boundary, there are few people so located and the stated numerical values are more representative for potential evacuees. Therefore, if one considers a 40-year period and assumes an evacuation drill each year, the mortality risk from the evacuations is about 200 times greater than mortality risk from the potential reactor accident.

Realizing that the above data is a potential disadvantage of performing realistic public evacuation drills, let us now attempt to look at the potential merits of such drills. In analyzing the merits of this element of the petition one should note if realistic evacuation drills were performed in the past and if they were beneficial. Also, if they were

not done in the past have public evacuations been successfully conducted without such drills. To the staff's knowledge, no public evacuation drills have ever been performed prior to an actual evacuation. Therefore, the relative benefits cannot be analyzed. The staff did examine instances of past public evacuations that were relatively successful but which were performed without prior drills.

On January 19, 1973, 3,000 out of an overall population of 3,300 people were evacuated from Morgan City, Louisiana in 4 hours. On June 2, 1972, 8,700 out of an overall population of 9,000 people were evacuated from Rapid City, South Dakota in 1 hour and in 1971, 80,000 out of an overall population of 81,000 people were evacuated from an area in Los Angeles in 6 hours. The first two of these evacuations were conducted with the use of existent evacuation plans. The Los Angeles evacuation was performed due to an impending collapse of a dam and without the benefit of an evacuation plan.

Responsible State authorities and/or governors were asked to evaluate this portion of the petition on the basis of their own experience and judgment. For the most part, their responses expressed concerns similar to those of the Iowa governor's office, quoted below:

> "... Actual evacuation drills would tend to stereotype or pattern a response which is undesirable because of the multitude of variables in an actual radiation incident. Of equal concern, the statutory authority for the State to enforce an evacuation is questionable, and the legal liabilities for injury contracted during a drill would have to be pre-affixed. The evacuation requirements ... would involve extensive State and local resources and staff planning time. The conduct of the evacuation drill would also place a financial burden on State and local governments."

Several states expressed concern as to the question of whether they have the legal right to compel citizen participation in a practice drill. Likewise, it should be noted that evacuations are a relatively common occurrence resulting from accidents, floods, weather, etc. Evacuation data has indicated, substantiated by a few Governor's replys, that evacuations have been and will probably continue to be performed with no major problems anticipated.

All of the above, on balance, leads the staff to conclude that this element of the petition should be denied because (1) granting of the petition could jeopardize the health and safety of the public and (2) past experience has proved that evacuations can be successfully conducted without prior drills of the population.

D. The petitioners also requested that NRC require licensees to submit for review the details of their Emergency Plans and the implementation procedures (see Enclosure "H" for detailed Pro and Con analysis). The staff has not found it necessary to have detailed implementation information submitted for review along with the emergency plans provided in the FSAR. These details are kept onsite where various aspects, such as specific phone numbers and personnel assignments etc., can be promptly modified to reflect various minor day to day changes. This detail can be provided to the staff (or in a hearing, if relevant) if there should be some serious question as to whether the applicant can actually carry out the plans set forth in the FSAR.

The implementation procedures maintained onsite are reviewed customarily by the Office of Inspection & Enforcement to determine whether they are consistent with the plans set forth in the FSAR. Prior to issuing an operating license and annually thereafter for the life of the plant, the NRC inspection program looks into the adequacy of the details of the Emergency Plan and the implementing procedures. Assurance is provided through these inspections that the commitments made in the Emergency Plan are in fact met, and reasonable assurance is obtained that appropriate measures can and will be taken in the event of an emergency. The inspection program includes verification that implementing procedures have been developed, and representative procedures are reviewed by NRC personnel, at this time. Furthermore, the NRC inspection program verifies by observation and review of records that the implementing procedures are tested and evaluated for adequacy when actually used. The staff considers that Regulatory Guide 1.101, Annex A adequately defines the scope and extent of detail needed to determine whether there is reasonable assurance that the facility can be operated without endangering public health and safety.

On the basis of the staff's analysis (as presented above and in Enclosures "E", "F", "G" and "H") of the merits of the individual elements in the petition, the staff recommends that the entire petition be denied.

In summary this recommendation is based on: (1) ongoing NRC activities in the area of emergency preparedness (as outlined in Enclosure "I") ensure that the basic thrust of the petition (improved emergency preparedness) is being accomplished and (2) promulgation of the proposed rule change would provide no improvement in protecting the health and safety of the public and in fact could prove counterproductive in the event of a real evacuation.

Recommendation: That the Commission:

(a) Approve Alternative 1. Deny the petition, issue a notice of denial;

(b) Approve the transmittal of the reply to the petitioners (Enclosure "C");

(c) Approve the publication in the Federal Register of the notice of denial of the petition (Enclosure "D"); and

(d) Note that:

1. The Notice of Denial (Enclosure "D") will be published in the Federal Register.

2. Following publication of the Notice in the Federal Register, a letter (Enclosure "C") will be forwarded to the Public Interest Research Group stating that their petition for rulemaking has been disapproved.

3. The Joint Committee on Atomic Energy will be informed.

4. The Committee on Interior and Insular Affairs will be informed.

5. The Committee on Environment and Public Works will be informed.

6. A public announcement will not be issued when the notice is filed with the Office of the Federal Register.

The Commissioners

Coordination: The Office of Nuclear Reactor Regulation, Inspection and Enforcement, Nuclear Regulatory Research, Nuclear Material Safety and Safeguards, and State Programs concur in the staff's recommendation in this paper. The Office of the Executive Legal Director has no legal objection. The Office of Public Affairs concurs that a public announcement is not required. The Office of the General Counsel concurred with the staff's recommendation, see Enclosure J. The Office of Policy Evaluation had no comments.

Scheduling: For affirmation at an Open Meeting.

Anticipated Scheduling: Week of June 20.

Roger J. Mattson for
Robert B. Minogue, Director
Office of Standards Development

Enclosures:
"A" - Petition for Rulemaking PRM-50-14
"B" - Summary of Comments
"C" - Proposed transmittal to petitioners
"D" - Proposed Federal Register Notice
"E" - "F", "G" and "H" - Evaluation of individual elements within the petition for rulemaking.
"I" - Summary of Ongoing NRC Efforts in the Emergency Preparedness Area
"J" - Comment letter from the Office of General Council

Commissioners' comments or consent should be provided directly to the Office of the Secretary by cob Thursday, June 9, 1977.

Commission staff office comments, if any, should be submitted to the Commissioners NLT June 3, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION
Commissioners
Commission Staff Offices
Exec Dir for Operations
Secretariat

ENCLOSURE A

DOCKET NUMBER
PETITION RULE PRM-50-14

PIRG

August 6, 1975

Secretary
Nuclear Regulatory Commission
Attn: Chief, Public Proceedings Branch
Washington, D.C. 20036

Pursuant to sections 2.800-807 of the Commission's rules and regulations, we are submitting the enclosed rulemaking petition entitled "In the matter of amending Part 50 of the Commission's regulations pertaining to emergency planning to protect the public from nuclear hazards."

Kindly address any correspondence concerning this matter to us.

Sincerely,

Louis J. Sirico, Jr.

Martin H. Rogol

DOCKETED USNRC AUG 7 1975 Office of the Secretary Docketing & Service

Acknowledged by card 8-7-75, cmo

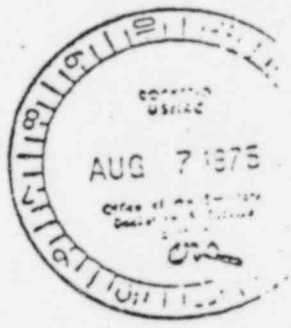
Encl A

DOCKET NUMBER
PETITION RULE PRM-

Before the

NUCLEAR REGULATORY COMMISSION

Washington, D.C.



In the matter of amending Part 50 of the Commission's regulations pertaining to emergency planning -- to protect the public from nuclear hazards

No.

PETITION FOR RULEMAKING

Pursuant to sections 2.800-807 of the Commission's rules and regulations, the Public Interest Research Group (PIRG), the Massachusetts Public Interest Research Group (MassPIRG), the California Public Interest Research Group (CalPIRG), the Northern California Public Interest Research Group (NorCalPIRG), the Maine Public Interest Research Group (MainePIRG), the Vermont Public Interest Research Group (VPIRG), the New Jersey Public Interest Research Group (NJPIRG), the Minnesota Public Interest Research Group (MPIRG), the Iowa Student Public Interest Research Group (ISPIRG), the Missouri Public Interest Research Group (MoPIRG), the New York Public Interest Research Group (NYPIRG), the Public Interest Research Group in Michigan (PIRGIM), the North Carolina Public Interest Research Group (NCPIRG), the Oregon Student Public Interest Research Group (OSPIRG), the California Citizen Action Group (CalCAG), the Connecticut Citizen Action Group (CCAG), United Nuclear Opponents of Wisconsin (UNO), the San Diego Energy Coalition, Citizens United Against Radioactive

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Environment of Florida (CURE), Friends of the Everglades, Peoples Lobby of California, the North Anna Environmental Coalition of Virginia, Citizens United for Responsible Energy of Iowa (CURE), the Environmental Coalition on Nuclear Power of Pennsylvania, the Rhode Island Committee on Energy (RICE), Citizens to End Nuclear Threats of Kansas City, Missouri (CENTS), the Mid-America Coalition for Energy Alternatives of Kansas City, Missouri (MACEA), and the Concerned Citizens of Fulton, Missouri (CCFM), Project Survival of California, the Louisiana Consumers League and the Citizens Energy Coalition of Indiana petition the Commission to initiate a rulemaking to amend Part 50 of its regulations. The proposed amendments would further the public safety by requiring nuclear facility licensees and licencee applicants to instruct citizens in public evacuation procedures in case of a major nuclear incident and to actually test public evacuation plans in realistic drills.

THE PETITIONERS

The petitioners are 31 active citizen groups in 20 states.

PIRG is an organization whose primary purpose is to advance the public interest in various public policy areas, including energy, the environment, and nuclear safety. It also serves as a clearinghouse and sometimes as a representative for citizen supported Public Interest Research Groups (PIRGs) and citizen supported Citizen Action Groups (CAGs) throughout the country. MassPIRG, CalPIRG, NorCalPIRG, MainePIRG, VPIRG, NJPIRG,

ENCL 7

MPIRG, ISPIRG, MoPIRG, NYPIRG, PIRGIM, NCPIRG, and OSPIRG are nonprofit student supported groups. CCAG and CalCAG are nonprofit citizen supported groups. These organizations seek to further the public interest in a number of public policy areas, including the environment, energy, and nuclear safety.

UNO, the San Diego Energy Coalition, CURE of Florida, Friends of the Everglades, Peoples Lobby, the North Anna Environmental Coalition, CURE of Iowa, the Environmental Coalition on Nuclear Power, RICE, CENTS, MACEA, CCFM, Project Survival, the Louisiana Consumers League, and the Citizens Energy Coalition are citizen groups concerned with energy, the environment, and nuclear safety. Many are coalition groups representing a number of regional community organizations.

ENCL D

PROPOSED AMENDMENTS

We submit the following proposed amendments:

A. An additional section to Part 50 to read --

Sec. 55.xx

a. During each calendar year, beginning with 1976, each operating facility's licensee shall

i. distribute instructions explaining what emergency safety steps, including directions for public evacuation, the citizen should take in case of a nuclear incident to each household, place of business, public institution, and other establishment within at least a 40 mile radius of the facility. The instructions shall be based upon the emergency plans each licensee has filed with this Commission pursuant to sec. 50.34(b)(6)(v) and sec. 50.90 as updated and shall be submitted to this Commission prior to distribution for approval of their readability and sufficiency of explanation.

this applies to licensees

ii. disseminate information explaining these plans through educational sources and the public media, including both printed and electronic media.

iii. conduct, in cooperation with federal, state, and local officials and agencies, an actual public evacuation drill in full conformity with these plans. The evacuation drill shall include the actual evacuation of the po ce from at least a 7 degree sector radiating from the facility for a distance of at least 40 miles.

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The sector will be chosen in conjunction with state and local officials and this Commission and shall be representative of other sectors and contain a significant population.

iv. submit to the Commission a report demonstrating compliance with this section.

b. This section shall not apply to a licensee during any calendar year during which the licensee has distributed copies of the emergency plans, disseminated information regarding them, and conducted a public evacuation drill in conformity with them pursuant to section 50.yy(a) and (b) with regard to the facility in question.

B. An additional section to Part 50 to read --

Sec. 50.yy

a. The Commission will not issue a construction permit or license or amended construction permit or amended license, provisional or otherwise, until the applicant has

i. distributed to each household, place of business, public institution, and other establishment within at least a 40 mile radius of the facility or proposed facility those sections of its

a) Preliminary Safety Analysis Report required by section 50.34(a)(10) or the equivalent report information filed pursuant to section 50.90, in the case of a construction permit or amended construction permit or

Wash applicants

ENCL H

b) Final Safety Analysis Report required by section 50.34(b)(6)(v) or the equivalent report information filed pursuant to section 50.90, in the case of a license or amended license which discuss public evacuation plans.

ii. disseminated information explaining these plans through educational sources and the public media, including both printed and electronic media,

iii. submitted to the Commission a report demonstrating full compliance with the above requirements.

b. The Commission will not issue a license or amended license, provisional or otherwise, until the applicant has

i. conducted, in cooperation with federal, state, and local officials and agencies, an actual public evacuation drill in full conformity with the applicant's plans for coping with emergencies affecting the public formulated pursuant to section 50.34(b)(6)(v) and section 50.90. The evacuation drill shall include the actual evacuation of the populace from at least a 7 degree sector radiating from the facility for a distance of at least 40 miles. The sector will be chosen in conjunction with state and local officials and this Commission and shall be representative of other sectors and contain a significant population.

ii. submitted to the Commission a report demonstrating full compliance with this requirement.

New Applicants

ENCL A

c. Where a hearing is to be held on the construction permit or amended license application, provisional or otherwise, the applicant must comply with subsection (a) and (b), as applicable, at least fifty days prior to the hearing.

d. This section's provisions do not apply where the applicant's construction permit or license application or amended construction permit or amended license application, provisional or otherwise

i. does not propose changes that alter an existing facility's plans for coping with an emergency affecting the public, including public evacuation, pursuant to section 50.34(b)(6)(v) or section 50.90 or

ii. does not propose changes that alter a previously proposed version of the application's plan for coping with an emergency affecting the public, including public evacuation, pursuant to sec. 50.34(a)(10) or section 50.34 (b)(6)(v) or section 50.90 where the applicant has already complied with subsections (a) and (b), as applicable, with regard to the plan's previously proposed version.

C. A change in Appendix E, section III Part 50:

The Final Safety Analysis Report shall contain plans for coping with emergencies. The details of these plans and the details of their implementation (need not) SHALL be included, (but) AND the plans submitted must include a description of the elements set out in section IV to an extent sufficient to demonstrate that the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property.

ENCL A

EXPLANATORY COMMENTS ON TEXT

Sec. 50.xx requires licensees to provide the public with instructions on steps to take should a nuclear incident make public evacuation necessary. The licensee's obligation to distribute specific written instructions extends to households, places of business, public institutions, and other establishments within a 40 mile radius of the facility -- the outermost limit the N.R.C. has used in limiting population density around a nuclear facility. The Commission informally sets a two million population ceiling for the 40 mile radius surrounding a proposed nuclear plant. Working Paper, Population Distribution Around Nuclear Power Plant Sites, April 17, 1973. A study of the respected American Physical Society also supports the 40 mile figure. "Report to the APS by the study group on light-water reactor safety," Reviews of Modern Physics, Vol 47, Supp. No. 1, Summer 1975. The APS assumes the need to evacuate regions where the ground contamination level exceeds 100 microcuries per square meter of Cesium-137 -- the same criteria used in the Reactor Safety Study Draft (WASH-1400), U.S. Atomic Energy Commission, August 1974 (hereafter RSS). RSS concluded a need to evacuate the area extending to 20 miles from the reactor. The APS study, however, corrects some RSS assumptions and calculates that the ground contamination level exceeds the permissible level out to a distance of 60 kilometers (37.3 miles). APS at S46.* Consequently, any evacuation plan must

*The APS study also concludes that early evacuation out to 400 kilometers can halve the number of long term cancers and genetic defects resulting from the reactor accident. APS at S47.

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consider the health and safety -- immediate lethal hazards, short term and long term health hazards -- of this populace.

This section also mandates an annual evacuation drill. Unlike recurrent drills, the public would participate in a full "dress rehearsal" that would actually evacuate at least a 7 degree sector, to be chosen in conjunction with state and local authorities and the Commission. It is assumed the evacuation drill will be planned in good faith and the sector chosen will be representative of the other sectors and contain a significant population.

The use of the 7 degree sector derives from the RSS, App. VI at 19. The study assumes that in a nuclear incident, persons under the plume would be evacuated. The RSS calculates the plume's width under different weather conditions. Expressing the plume's width as a fraction of a circle, it determines the smallest plume to be .021 of a circle, or 7.2 degrees (360 x .021). RSS, App. VI at 19. Though we specifically disclaim any acceptance of the RSS's unrealistically conservative nuclear accident projections, we utilize the 7 degree sector to make the evacuation drills as limited as possible.

At 40 miles, the width of the 7 degree arc is only about 4.8 miles. Thus the evacuation drill can take place without unreasonable inconvenience to normal operations in the area of the plant.

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The proposed rules plainly do not preclude drills over a larger area. According to the RSS, the largest fraction of a circle that could be affected by a plume from a reactor accident would be .11 of a circle, or about 40 degrees. Id.

Sec. 50.yy requires applicants for licenses and construction permits to supply the public with the public evacuation discussions in the Preliminary Safety Analysis Reports and Final Analysis Reports, respectively, and otherwise disseminate public information on the plans. As with sec. 50.xx, this section also calls for a full scale public drill to test the evacuation plan's workability. If a hearing is to be held on the construction permit or license application, the applicant must comply with this section's applicable requirements at least 50 days prior to the hearing. Both this section and section 50.xx contain provisions to reduce the number of distributions and drills to the bare number necessary to meet the purposes of the proposed regulations.

Change in Appendix E, section III, Part 50. The amendment would require a filing of detailed emergency plans and implementation procedures with the Commission. At present, an applicant may merely make reference to relevant state and local plans and provide a bare-bones outline. Thus complete information is not a readily accessible part of the public record and is not thoroughly analyzed by the Commission.

GENERAL COMMENTS

In support of the proposal, we make the following arguments:

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I. Public education is essential to making evacuation plans effective.

II. Public discussion of evacuation plans and full scale public drills are necessary to assure the soundness of emergency plans.

III. This Commission has a special duty to minimize the damage wrought by a nuclear incident.

I. PUBLIC EDUCATION IS ESSENTIAL TO MAKING EVACUATION PLANS EFFECTIVE.

We are not engaging here in the larger debate over nuclear safety. The Commission's regulations already require evacuation plans. As evidence of its continuing attention to the matter, it has recently promulgated Regulatory Guide 1.70.14 (Dec. 1974), which states more fully the sort of detailed emergency planning information that Safety Analysis Reports should set out -- and apparently have not. Our petition simply seeks to increase the effectiveness of the Commission's efforts to insure adequate methods for coping with public emergencies.

According to the RSS, public evacuation can reduce the fatalities following a nuclear disaster by as much as a factor of 4. (RSS, App. VI at 81). The potential of an effective evacuation plan for saving lives and reducing injury makes thorough pre-emergency planning a necessity.

Executing an evacuation could prove a complex affair. RSS speaks in terms of evacuating a 20 mile area surrounding the facility. RSS App. VI at 31-32. Others insist a realistic plan must cover more than 20 miles since the immediate lethal consequences of a

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reactor accident can extend to 15 miles. Preliminary Review of the AEC Reactor Safety Study, Sierra Club-Union of Concerned Scientists, San Francisco-Cambridge, Nov. 1974 at 56 (hereinafter SC-UCS). These areas often contain a substantial population. For example, 66,000 people live within five miles of the three reactors at Indian Point, New York, and 900,000 live within 20 miles. Even under the RSS evacuation model, 10 percent of potentially affected persons within 20 miles of the reactor are never evacuated, and evacuation of the rest takes some effort. RSS, App. VI at 31-32. Other authorities find this model unrealistically optimistic. SC-UCS at 57. As noted above, this Commission is concerned with population extending 40 miles from the facility site. These people must be evacuated -- not only to avoid immediate lethal consequences, but also to avoid short term and long term health hazards. It is likely that some people will not suffer immediate effects of radiation sickness, but will increase the probability of their contracting cancer years later. Given the threat of dose commitment to the populace, time also becomes a critical factor. Successful evacuation, then, requires a massive effort.

In view of these considerations, we find current planning efforts wholly inadequate. We ask -- How can people successfully evacuate if they do not know what the evacuation plan is? This Commission does not require public dissemination of evacuation instructions. To the best of our knowledge, Oregon alone has recognized its responsibility in this area. Oregon Revised Statutes 453.595 requires public utilities operating nuclear facili-

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ties to disseminate through the public media and educational sources information approved by the state Health Division that explains state devised emergency plans to cope with a nuclear accident.

Public education must be a part of any conscientious pre-emergency planning. Various fire safety and civil defense-type

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programs have always made public education an integral part of their efforts. Similar efforts are required here. For the sake of maximum efficiency and minimum injury, potential evacuees must receive as much advanced training as possible. Informing them of what the evacuation plans actually consist is a modest, but essential first step.

II. PUBLIC DISCUSSION OF EVACUATION PLANS AND FULL SCALE PUBLIC DRILLS ARE NECESSARY TO ASSURE THE SOUNDNESS OF EMERGENCY PLANS.

On April 8, 1975, William Kerr, chairman of the N.R.C.'s Advisory Committee on Reactor Safeguards wrote this Commission's chairman a disturbing letter concerning inadequacies in emergency planning and population protection. (Attached as Appendix A). With some understatement, he wrote, "Reviews by the Committee ... of emergency plans for nuclear power plants ... show that much work remains to be done." He then identified eight areas in need of work -- lack of action criteria, insufficient accident scenarios, inadequate accident instrumentation, woefully incomplete state response plans, the lack of means for verifying that protective actions have actually been carried out, the lack of provision for professional radiation protection personnel to participate in emergency actions, the need to continue the Radiological Assistance Program, and the need for improved coordination of research and development efforts by various agencies and for dissemination of the results to user groups. On July 26, 1974, the ACRS's Environmental Subcommittee heard the following testimony:

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MR. COLLINS: Now, in answer to your question, are there any states that have 100 percent totally acceptable radiological emergency response plans, the answer to that is no.

DR. ISBIN: Not even Pennsylvania?

MR. COLLINS: Not even Pennsylvania. Because Pennsylvania, you will remember, is a model state plan that supposedly is under development.

Testimony of Harold Collins, Office of Governmental Liaison, AEC; Environmental Subcommittee meeting on Emergency Plans; Tr. at 192.

A recent test drill in Minnesota confirms this evaluation. Civil Defense officials conducted an emergency evacuation drill for the area surrounding Northern States Power Company's nuclear plant at Monticello. It was a dismal failure with communications systems failing and various personnel demonstrating an ignorance of their responsibilities. Roy Aune, deputy director of the state Division of Emergency Services, stated, "Under the present system, it is doubtful that the state EOC (Emergency Operating Center) could handle a major disaster adequately with the facilities presently available." See "Report Questions Preparedness for Disaster," Minneapolis Star June 10, 1975 at 1A (attached as Appendix B). A recent citizen survey indicates similar situations around the country. Naomi Jacobson, Emergency Evacuation Plans for Nuclear Plants, LAND, Inc., Rudolph, Wisc. (attached as Appendix C).

Even the courts are beginning to express concern with the

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inadequate attention being given evacuation planning. Recently the Seventh Circuit U. S. Court of Appeals set aside the AEC'S grant of a construction permit for a nuclear plant in Dailly, Indiana, primarily because of its proximity to the densely-populated Chicago metropolitan area. The Court voiced concern for the 7500 employees working at a Bethlehem Steel plant about one mile from the proposed site and the 87,000 daily visitors to the adjacent Dunes National Lakeshore and State Park. The Atomic Safety and Licensing Appeal Board dismissed potential evacuation problems by saying the National Lakeshore superintendent could "work it out." The Court replied:

> What would occur if a large but unknown number of campers and visitors unfamiliar with the area and within nearby homes in which to take shelter, heard a public address announcement to evacuate the area due to a nuclear accident? Their path would be blocked to the north by Lake Michigan and on the west and south by NIPSCO's and Bethlehem Steel's plants and industrial complex. It strains credulity to expect that this problem will work itself out and it is ridiculous to in effect say that it should be left to the future.

Porter County Chapter, Isaak Walton League of America, Inc. v. A.E.C. No. 74-1751 at 32, CCH Atomic Energy L. Rptr. para. 3595 at 8324,8336 (7th Cir. April 1, 1975).

Such severe judicial, "in house," and citizen critiques point up a lack of responsibility by the Commission and its licensees in protecting the public from nuclear catastrophe. Our proposals can play a key role in meeting this responsibility. As the Environmental Protection Agency's Office of Radiation Programs concludes in its report, Evacuation Risks -- An Evaluation (EPA

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520/6-74-002; June 1974):

> Continual testing of the emergency plans, as authentically as possible, is needed to determine whether it will work practically and to determine adjustments (at 49).

Part of the testing can come from evaluating public reaction to proposed evacuation plans. As the EPA report states: "Many times emergency plans are written by individuals who have no real experience in emergencies and little or no knowledge of how people behave during an emergency." (At 49). The feedback from a public dissemination of evacuation plans and from public drills can provide concrete, grassroots information necessary to test a theoretical plan's workability.

The TVA's experience with drills provides an excellent illustration. Knowledge gained from the first drill led to a revision of 100 pages in the emergency plans. As a result of the drills, the TVA made three major revisions in its emergency plans. Testimony of Ernest Belvin, Division of Environmental Planning, TVA; ACRS environmental Subcommittee meeting on Emergency Plans, July 26, 1974, Tr. at 31. The results of major drills at other plants would undoubtedly prove no less beneficial.

We lack any real experiential knowledge regarding the complexity of a nuclear evacuation. The EPA report and the NSS both take a fairly optimistic view of the process. Yet, we have just observed an actual evacuation that should give us pause. The recent evacuations in Viet Nam demonstrate the results of poor planning. The solicitation of public input and the utilization of thorough drills are essential to avoiding such tragedy.

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III. THIS COMMISSION HAS A SPECIAL DUTY TO MINIMIZE THE DAMAGE WROUGHT BY A NUCLEAR INCIDENT.

As the licensing authority for nuclear facilities, the Commission owes the citizenry living and working in the area surrounding each facility a special duty to minimize the damage a nuclear hazard can inflict. Yet, the Commission's scrutiny of public evacuation plans has been dismal. Its licensing regulations do not even require license applicants to submit detailed evacuation plans or details of their implementation. (Part 50, Appendix E, sec. III). It awards licenses in states where emergency plans are wholly inadequate or virtually non-existent. All an applicant need do is allege its arrangements with public authorities and provide a sketchy outline of proposed plans. As a result, Commission "approved" emergency plans and non-plans have evoked the severe intra-agency criticism cited above.

Indeed, the NRC is ignoring its statutory obligation to protect the public from nuclear hazard. Though the Commission lacks the authority to directly command states and localities to devise sound emergency plans, it can -- and certainly should -- deny licenses in those states without such plans. It is time for recognition of responsibilities.

A further reason compels the Commission to minimize nuclear damage. The Price-Anderson Act insures utilities against liability from a nuclear incident, but up to only $560 million aggregate liability per incident. 42 U.S.C. sec. 2210. Congress set the ceiling in 1965. By today's standards, it is far too low.

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As a governmental agency whose predecessor long supported the Price-Anderson Act, the N.R.C. has a duty to minimize injury and mitigate damages so they will not exceed the statutory ceiling or exceed it substantially and leave victims without adequate compensation.

Recently, legislation to extend the Price-Anderson Act past 1977 met with a Presidential veto. If a similar bill does not pass, nuclear utilities will be left uninsured since the private insurance industry refuses to provide the necessary coverage. With such a state of affairs quite conceivable, the Commission has an even more pronounced duty to protect the public by assuring adequate emergency evacuation plans.

Respectfully submitted,

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August 6, 1975

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 8, 1975

Honorable William A. Anders
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: EMERGENCY PLANNING

Dear Mr. Anders:

In the course of its reviews of reactor facilities, one of the items taken into consideration by the Advisory Committee on Reactor Safeguards is the degree to which applicants have prepared a sound plan of action in case of an emergency situation. This matter was the subject of meetings of the ACRS Environmental Subcommittee on July 26-27, 1974, and January 17, 1975, and was most recently discussed at the 179th and 180th meetings of the full Committee on March 6-8 and April 3-5, 1975.

On the basis of its evaluations, the Committee has concluded that an effective emergency plan can play a significant role in the protection of the nearby population in the unlikely event of a major accidental release of radioactive material from a nuclear installation. Reviews by the Committee, however, of emergency plans for nuclear power plants currently in operation, or nearing completion of construction, show that much work remains to be done. In this regard, the Committee has identified the following items:

1. Action Criteria

There is a lack of well defined criteria for the initiation of remedial actions. A comparison of emergency plans for various nuclear power plants shows that there are large differences in dose rates at which similar protective actions would be initiated. The Committee notes that the Environmental Protection Agency is developing a set of uniform protective action guides for use by State agencies. The Committee recommends that NRC lend appropriate support to assure that this effort be completed as soon as feasible.

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The Committee is pleased to learn of the recent visits by an interagency training cadre to evaluate the emergency response capabilities of selected States. The Committee recommends that this program be expanded and that the NRC assume a role of leadership in coordinating the necessary efforts to foster the development of adequate State emergency response capabilities.

5. Action Verification

In case of accident response, there is need for the development of means for verifying that protective actions have actually been carried out by responsible individuals. Criteria need also to be established for terminating emergency actions. The Committee recommends that the NRC assure that emergency plans include designation of the responsible individuals and the establishment of the necessary criteria for handling these matters.

6. Professional Support

Many key decisions in emergency actions will be dependent upon sound interpretation of environmental-radiation-related information. Reviews of existing emergency plans often reveal a lack of understanding of the importance of professionally qualified radiation protection personnel in such actions. The Committee believes that such personnel must play a key role in the design and implementation of emergency response measures and recommends that greater attention be given to this matter.

7. Federal Emergency Assistance

For a number of years, the United States Atomic Energy Commission has maintained a Radiological Assistance Program through which interagency Radiological Assistance Teams were available for immediate response in emergency situations. The Committee recommends that NRC assure the continuation of this Program.

8. Research and Development

Research and development efforts on several aspects of these problems are underway at several of the National Laboratories and by the NRC and ERDA headquarters staffs. Examples include the Atmospheric Release Advisory Capability (ARAC) at the Lawrence Livermore Laboratory, the Clinch Valley Study at the Hollifield National Laboratory, and a rapid version of the Aerial Radiation Monitoring System (ARMS) being considered for development by the headquarters staffs. In addition, studies of the evaluation of risks of evacuating population groups are underway within EPA. Such efforts, however, appear to be in need of improved

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coordination to assure that results will be in a form suitable for ready implementation by NRC licensees, State and local units, and appropriate Federal agencies. Also needed are studies to assure that the results of these R&D efforts are disseminated to user groups.

To assure that the best methods for population protection are being incorporated into emergency planning, additional research is needed on appropriate countermeasure actions for reducing the population intake of radioactive materials, particularly through food and milk. Attention also needs to be directed to the long range implications of potential radioactive contamination of land areas with respect to possible methods of cleanup and any necessary restrictions on land use.

Sincerely yours,

William Kerr
Chairman

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Report questions preparedness for disaster

By TERRY WOLKERSTORFER
Minneapolis Star Staff Writer

It is doubtful the state could cope with a major disaster such as a nuclear accident, a top Civil Defense official said in a critique of last week's nuclear emergency exercise at Monticello.

The report, written by Roy Aune, deputy director of the state Division of Emergency Services, says that "under the present system it is doubtful that the state EOC (Emergency Operating Center) could handle a major disaster adequately with the facilities presently available."

The June 4 exercise involved the simulated rupture of an underground tank containing radioactive gases at Northern States Power Company's nuclear plant at Monticello. Authorities went through the motions of alerting Monticello residents to evacuate the area to avoid the gas cloud that supposedly was released.

Aune's report, dated June 6 and addressed to Director Wes Lane, is particularly critical of the Civil Defense communications capability. A copy of the report was obtained by The Star.

Staff members were "hampered by lack of communications capability both at the (Capitol) EOC and at the EOC in Monticello . . . Radio capability for all practical purposes was nonexistent. To tie up a telephone line to relay through a (highway patrol) dispatcher to a radio at some distant point consumes communications capability already in short supply," the report says.

The telephone system used in the exercise "is not the answer to a radio capability. Al Baert, Mobile Support Area VI commander, re-

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Continued from Page 1A

ported that he was unable to get into (telephone contact with) the state EOC for over 30 minutes during the exercise. It took as long if not longer to reach Mr. Baert at Monticello," Aune said.

He also concluded, "It is apparent that our activation procedures need to be tightened up and unscheduled exercises conducted to familiarize all staff personnel with their responsibilities in the activation of the EOC."

One source familiar with the exercise said Aune's criticisms reflect only the fact that "Aune and Lloyd Lund (who is in charge of the emergency plan) are trying to run a two-man show. Never, at least not in the past two years, have they tried to familiarize staff members with emergency procedures. They had four months before this exercise to get people ready. They didn't even talk to Robert Smith, the assistant director.

"And if they had no radio communications, it's at least partly because they equipped 15 state cars with radios at a cost of $19,000 — but they're all on highway patrol frequencies instead of the frequencies assigned to the Division of Emergency Services. And it's against FCC regulations for Civil Defense people to use highway patrol radios, especially through a phone patch (connection)."

Although Aune complained about the telephone communications, Rod Canning, a Northwestern Bell representative who works with Civil Defense officials, said he was never consulted about telephone service, even though he was in the EOC during the exercise.

APPARENTLY AUNE and Lund were not aware that a Civil Defense priority call will take precedence over virtually all other calls on the circuits, Canning said, even though the telephone priority is mentioned in the state emergency plan.

Aune said today that the exercise "originally was designed to determine where our weaknesses were so we could do something about them. My report was designed to identify these problems so we could work on them.

"Information was deliberately withheld to see how we would perform. We could have looked good if we told everybody (the details of the exercise) in advance," Aune said.

Another critique, by Jack Ferman of the Pollution Control Agency (PCA), said the fire marshal at Monticello did not know the nature, extent and location of a simulated fire at the Northern States Power Co. nuclear generating

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APPENDIX B

plant. The fire equipment and number of fire fighters at the scene also were unknown. Ferman said, and "communications were totally inoperative."

Information from the NSP plant and the U.S. Weather Service were totally inadequate for the state climatologist to determine the height, width, length, dispersion and pathway of the supposed radioactive cloud, Ferman said.

He also reported that the highway patrol did not know that radiological monitoring equipment required special attachments to cars and never received roadblock location instructions. Health Department monitoring teams had no communications capability and received no information from NSP as to the supposed location of the radioactive cloud, he said in his report.

There also was some interagency sniping. Aune's critique said reports at the end of the exercise "were positive and germane to the problem with the exception of the Pollution Control Agency that apparently does not understand their role as a supporting agency in a disaster situation."

FERMAN'S REPORT says he and another PCA representative were asked to leave a review meeting in Monticello. "Charles Larson, NSP plant superintendent, protested our presence and challenged our right to hear the proceedings.

"Al Daert, MSA Area VI commander, stated the review meeting was private, the PCA was not invited and PCA presence was resented. No other parties objected. We stayed. It might be added that NSP providd what appeared to be a steak feed. PCA staff did not eat," Ferman reported.

Daert, reached by telephone, refused comment, saying he "didn't know who he was talking to."

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EMERGENCY EVACUATION PLANS

for

NUCLEAR PLANTS

by

Naomi Jacobson
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$1.00

ABSTRACT: A study of emergency evacuation plans available for nuclear power plants reveals that plans are very poorly developed and not adequately publicized. It is unlikely that the plans would be effective in an actual emergency. Officials of agencies responsible for the plans say they have not emphasized them for fear of creating public apprehension.

Appendix C

C.

Encl A

by
Joni Jacobson
LAND, Inc. (League Against Nuclear Dangers, Inc.)
Route 1, Rudolph, Wisconsin 54475
June 1975

"Our representatives depend ultimately on decisions made in the village square...To the village square we must carry the facts of atomic energy. From there must come America's voice." — 1946 Albert Einstein.

Nothing is accident proof. Murphy's law says that if something can happen it will. The ultimate safety of American nuclear plants depends on the emergency core cooling system (ECCS) which is designed to flood the fuel core with water if an accident causes the loss of the primary coolant.

A catastrophic loss of coolant accident could contaminate an area equal in size to the State of California according to WASH 740 the 1957 government study by Brookhaven National Laboratory. An independent study in 1972 by the Union of Concerned Scientists of Boston said an accident could result in land use restriction that might persist for years, 500 miles downwind from a reactor.

Balloons released from near the Rudolph reactor site (proposed site) in December 1973 were picked up in West Virginia, Ohio and Pennsylvania within two days of their release indicating how the wind could disperse materials.

The present ECCS has never been given full-scale tests. In 1970 the Atomic Energy Commission (AEC) conducted tests on a small nine-inch semiscale model and in all six cases the ECCS failed.

An emergency evacuation plan is required in order for a utility to get the final operator's license for a nuclear reactor. This plan would be put into effect if the ECCS failed. Responsibility for the plan varies. It may be written by the state, county, Civil Defense or local authorities. The utility's on-site emergency plan, which is approved by the Nuclear Regulatory Commission, must link with other local plans.

A question occurs: Do utilities show the same interest in and attention to the public in preparing emergency plans as they do in attempting to convince the citizens to accept a nuclear plant in their area? An examination of emergency plans available for operating reactors proves enlightening.

Newspaper accounts and press statements question the adequacy of emergency evacuation plans for citizens residing near operating nuclear reactors. This report attempts to cover questions raised in other areas of the United States and compare Wisconsin's situation around the Genoa, Point Beach and Kewaunee reactors.

The on-duty Chief Supervisor, upon being informed of an emergency, shall immediately announce the type and location on the plant public address system and shall evaluate the condition and classify the emergency as local, site, or off-site.

The Kewaunee Emergency Plan also states, "The off-site evacuation plan will be put into effect when the analysis of existing information from plant monitoring and monitoring at access points and/or exclusion area boundaries shows that a hazard exists to the surrounding community."

Upon arrival of the state police, an evacuation of residents from the area noted as off-site will begin. The general public evacuation will cover an area of approximately 44 square miles.

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residents will be evacuated : it becomes apparent that they may accumulate a dose greater than 100* millirems in one week.

Personnel assisting with the evacuation of the public will counsel them that they are in no danger but are being moved for their own safety; and that they will be permitted to return as soon as the danger has passed and there is no threat of contamination to their homes or property."5

In August of 1974 the $3 million AEC "Reactor Safety Study" by Dr. Norman Rasmussen was released. In principal it claims the risks to the public associated with nuclear power are "very small", and that the likelihood of reactor accidents is much smaller than many types of non-nuclear accidents with consequences similar to a large plane crash. The study shows consequences could run to 2,200 deaths, 3,200 latent cancers, 3,200 genetic effects and $6.2 billion in property damage (1,000 megawatt reactor), but that the likelihood of these ever happening is one in a billion.

The federally-funded Harold W. Lewis study group criticized the Rasmussen Study as per an article in the Wall Street Journal on 8/29/75. The Lewis group estimated that from a release of a large amount of radioactivity from a nuclear plant accident cancer deaths would be 10,000 to 20,000 persons, and that the Rasmussen group had underestimated the genetic effects by as much as 60 times.

Bob Augustine, Researcher for The National Intervenors (a coalition of over 100 citizen groups opposed to nuclear power) has concluded that, "An examination of the information and procedures utilitized in this study (Rasmussen) to reach these conclusions reveals the falsity of such assurances." He offers the following points:

"A. It is unreasonable to assume that 90% of the endangered population would be successfully evacuated. All of the figures given for accidents considered in this study assume 90% evacuation. This is unrealistic for several reasons.

First, successful evacuation depends on workable evacuation plans. A recent EPA report, cited in the study, concludes, "Advanced planning is essential to identify potential problems that may occur in an evacuation." In many cases communities surrounding reactor sites are unprepared for an accident. This is because the plans are not carefully enough designed or enforced by the AEC. The plans are not given frequent or extensive enough testing or periodic updating. Moreover, the AEC and the utilities have repeatedly emphasized the point that an accident is virtually impossible to state and local officials with the result that they don't bother to take the plans seriously.

Secondly, the EPA study found that a major problem in evacuation is not how to conduct the evacuation in an orderly manner but rather how to persuade people to go at all. There are many reasons people will refuse to evacuate. The absence of any visible threat (radiation is not sensible by human senses) would cause many to disbelieve. Many also would not believe such an accident had happened because they had been told so many times that it is virtually impossible. The percentage of those who refuse to evacuate could run to over 50%.

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* The AEC requires annual doses to individuals living near current nuclear power plants to be less than 5 millirems. The average citizen should receive less than 1 millirem. (Page 12 of Nuclear Power and the Environment published by the American Nuclear Society, 244 E. Ogden Ave., Hinsdale, Illinois 60521)

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Thirdly, an important difference between all the evacuation studies and one associated with a reactor accident is that people would have to stay evacuated for a considerable period. The Reactor Safety Study indicates a minimum of a few weeks to decontaminate most (but not all) of the areas involved. Evacuees probably will not stay evacuated nor will they be willing to part with their property on a long-term basis. The EPA study concluded that most evacuees are able to find food and shelter themselves. But under prolonged evacuation this might not be so. Evacuees also exhibit some anxiousness to move back in and begin cleaning up and securing their property after tornados, hurricanes and floods. In a reactor accident, this would have to be left to decontamination crews.

If people perceive ahead of time that they will have to remain out of the area for a while, traffic congestion may be caused by people trying to stock up on food and gasoline.

Many of the evacuations examined in the EPA study were not in high population density areas. The data indicates more time is needed in less dense areas for evacuation. In dense areas, less time is needed, but one study indicates even that might be too long to avoid a massive exposure. The study found it would take 1 to 3 days to evacuate 2,200,000 children from New York City.

Problems have also been encountered with non-English-speaking groups in some of the evacuations studied.

Dr. Rasmussen told a press conference held August 20th that in his study it was assumed that the cost of decontaminating the affected area would be about equal to the cost of compensating all involved parties for loss of use of land and facilities." He said it was therefore logical to assume that decontamination would be the preferred option. The EPA evacuation study concluded that "evacuation costs are highly area-dependent and should be computed based on local demographic, economic and geographic conditions."

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* U.S. Department of Agriculture in cooperation with the U.S. Atomic Energy Commission - Research on Removing Radioactive Fallout from Farmland Technical Bulletin #1164

Conclusions: Removal of contaminated crops is an ineffective method of decontaminating farmland.

A power-driven streetsweeper or scrapper cutting 2 inches deep removes about 90% of the contaminant.

Decontamination should be accomplished before rainfall washes the radioactivity into low places where it is difficult to remove.

Decontamination can be accomplished by a scraper with a 12-foot blade at the rate of 100,000 square feet (2.3 acres) in 3.3 hours.

Application of a concrete or asphalt coating over the radioactivity is ineffective and only makes later pickup of radioactivity more difficult.

Burying radioactivity 3 feet deep with a large plow is costly and ineffective in reducing the uptake of radioactivity.

Planting through a contaminated surface which is then left untilled is an ineffective way to reduce the uptake of radioactivity.

The species of the crop is a highly significant factor in the uptake of radioactivity.

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B. Limiting the endangered population to 20 miles is unreasonable. In all the consequence calculations only the population within 20 miles is considered liable to death or injury. This is because the study found that health effects of this magnitude from the site released assumed would extend no further. But there is reason to believe that releases of greater size may occur affecting a greater area.

This creates a whole new set of circumstances. Many reactors are situated just over 20 miles from a major population center. The endangered population would be many times larger. Indian Point on the Hudson River, for example, is 24 miles from New York City. The population density there is 26,000 per square mile. The highest density assumed in the Rasmussen Study is 3,300 per square mile.

C. The weather conditions accounted for in the study are incomplete. The consequences of an accident would depend partly on the weather. The Reactor Safety Study assumes wind direction is random relative to population. This is based on an average from 66 sites. In individual cases it does not hold. At Indian Point the usual wind at the site is 6 MPH upstream by day and 6 MPH downstream (toward Manhattan) by night at altitudes under 200 feet. Above 200 feet the prevailing wind is westerly blowing from the site across populous Westchester County, New York and Fairfield County, Connecticut.

D. Concentration of radioactive materials in body organs is not properly considered. In calculating the health effects on the exposed people, the study considers collection of radioactive iodine in the thyroid gland and exposures to the gastrointestinal tract and lungs but does not consider the collection of cesium in muscle or strontium in bone or other materials in the gonads or in other organs.

E. Meltdown processes are largely unknown. The chemical and physical reactions that may occur in a reactor core meltdown are barely known at all. There is nothing like certainty on the magnitude of explosions that could occur or the nature and extent of ensuing releases. The effects of larger releases than those assumed in this study could extend beyond 20 miles.

Furthermore, if the particular mix of isotopes assumed to be released is incorrect, the health effects and land contamination could be more extensive than predicted. Without knowing more than is presently known about the physical and chemical reactions occurring in a meltdown, it is impossible to predict with any certainty how much of which isotope will be released.

As has been pointed out by others, fault-tree analysis, the procedure used to make all the study's calculations, suffers from certain deficiencies. A chain is only as strong as its weakest link and there are many weak links in Rasmussen's fault-trees. Quality assurance failures are not adequately considered. Human error is not adequately accounted for. The experience base used is largely irrelevant. Human errors and other unanticipatable or unforeseeable events can seriously alter predictions based only on past experience."

On October 22, 1974 there was a failure of the ECCS at the Zion plant near Chicago when it was accidently tripped by a workman. They found a four-foot length of 1/2-inch pipe inside the cooling water piping causing one of the valves to jam. The pipe was evidently dropped in during construction.

In March 1975 at the Browns Ferry nuclear station in Alabama two reactors were forced down as a result of workers using a simple candle to check for air

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leaks around electrical cables which ignited a fire intense enough to burn through the cables controlling the ECCS. The Zion system or the Browns Ferry system would have been inoperative if needed.

IOWA-Duane Arnold Energy Center 569 megawatts - Began Operation in 1974

The evacuation area is a 6-mile radius involving 13,700 people. There are 3 separate evacuation plans with different points for evacuees to assemble and different methods of transporting the victims. There is concern about unpreparedness on the part of government officials; what kind of facilities the hospitals have to handle such an event and if they are prepared; whether volunteer rescuers will have qualms about going into a radioactive zone.

Why does the Fort Calhoun reactor on the Nebraska side of the Missouri River, a smaller reactor at 380 megawatts have a nine-mile evacuation radius? Why is the evacuation radius for the Quad City reactors (2 of 790) just 5 miles? If the Quad Cities plan extended even 6 miles it would require the evacuation of Clinton, Iowa with a population of 35,000. Why is it that all of these plans stop just short of the nearest major population center?

Sheriff Walter Grant of Linn County said the working of the plan depends on the wind. Grant said it would take at least 3 hours to get most of the 13,700 people out. The AEC estimates that a "meltdown" could take from 4 to 24 hours to release radioactivity.

State plans would use local school buses to evacuate people lacking transportation. Sheriff Grant would use Cedar Rapids buses because if something happened after school, the buses might not be available right away. Sheriff Kenneth Rebenhagen of Benton County, with a smaller population would leave evacuation to each individual.

The AEC requires full evacuation testing of units within one year of a reactor's being fueled. However, the public is not made aware of the testing or plans as officials believe widespread distribution might cause panic.

CALIFORNIA-San Onofre Nuclear Generating Station 430 megawatts
Began Operation in 1968

Government officials are convinced that a disaster is almost impossible and generally are unprepared to protect thousands of citizens if an emergency should occur. A survey by the Los Angeles Times reveals there is no clear plan for an emergency and no single agency has been designated to take charge. The confidence of government officials that there is no real danger stems largely from assurances given by utility company spokesmen.

Neither San Clemente with a population of 19,000 which is 3½ miles NW of the plant nor Oceanside with a population of 50,000 at 17 miles S have joined in emergency drills. San Juan Capistrano is 9 miles N and inland from San Onofre and the City Manager said residents have been unwilling to finance disaster planning of any kind. San Clemente, according to police chief, Clifton Murray, is counting on nuclear plant safety and prevailing westerly winds to protect his city. Murray said he would set off hilltop sirens and saturate the city with loudspeakers telling the people to evacuate north up Coast Highway or the San Diego Freeway.

School children would leave by bus if the accident happened during school hours. No arrangements have been made to transport citizens to safety.

Note: In January 1975 the AEC was split into the NRC and ERDA

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technical assistance under the direction of local authority. 1. Marines are the vital link. Colonel M. Rose, Asst. Chief of Staff for Operations at Camp Pendleton is detailing plans to evacuate 748 families that will live within a 5-mile radius of the plant as well as 7,000 marines and reservists in the northern section of Camp Pendleton.

South Coast Community Hospital is the only one in the area that has an agreement with San Onofre — 15 miles away. They can only handle 5 to 10 victims at one time.

Orange County Health Department spokesmen pointed out that people contaminated with radioactive materials might be forcibly stopped from entering noncontaminated areas or some hospitals refuse to treat radiation victims because it is costly to decontaminate their emergency rooms.

The Federal Disaster Assistance Administration is offering matching funds to states developing radiological plans for use in the neighborhoods of nuclear facilities.

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NEBRASKA-Cooper Nuclear Station 778 megawatts - Began Operation in 1974*

This nuclear station is only the width of the Missouri River from Rock Port, Missouri. When the AEC was questioned about the necessary emergency plan for Missouri in relation to Cooper Station, the AEC explained that the nuclear plant was in Nebraska and not in Missouri. The AEC stated that their regulations in the area of emergency plans only extend to the state actually possessing the plant.

St. Joseph, Missouri could run the risk of having its water supply contaminated. Westerly wind patterns of that area would be more likely to transport airborne radiation to Missouri than to Nebraska. As a token effort, the AEC contacted Governor Christopher Bond and requested that he order certain agencies to prepare such a plan.

The submitted plan contained no provision to train state employees in the area on exactly how to handle a radiological emergency or to even give them some sort of a test run drill. The plan says state persons assigned to work in a contaminated area will need to be equipped with, and know how to use, equipment for monitoring radioactivity. This seems to be more for the sake of obtaining data should there be lawsuits resulting rather than as a safety measure.** 10

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VERMONT-Vermont Yankee Generating Station 514 megawatts
Began Operation in 1972

The Yankee Atomic Plant is 12 air miles from Marlboro. Guilford with 400 cars and 1,600 people plans to evacuate to Marlboro College. In the winter

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* Wall Street Journal on 4/28/75 - Nebraska Nuclear Plant Reduces Power, 10 Others to Report on Possible Vibration. 50% reduction ordered by the Nuclear Regulatory Comm. because of "indications of possible vibrations within the reactor core."

** Under the Price-Anderson Act the AEC is required to appear on behalf of the power company if a citizen sues. Power companies can deduct legal defense fees against citizens claiming atomic accident damage from the $560 million coverage provided. The citizen pays his own lawyer.

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the college is a deadend road. Guilford plans call for Marlboro College to be used as a processing center at which families would be reunited and persons should be checked for radiation exposure and then sent to other centers or homes in other towns.

The police chief of Marlboro, Russell Southworth, said that according to Civil Defense officials last November in case of a disaster all state and state-aid highways, including Route 9 (route Guilford townspeople were to take to evacuate to Marlboro College) would be closed except to emergency vehicles.

Southworth estimated it would take at least 2 hours after Marlboro was notified to notify townspeople in case of an accident. He said there are no plans for the evacuation of Marlboro for an accident at Rowe Yankee in Massachusetts, and there is no place for the townspeople to go. There are now no classified shelters in the town of Marlboro.

Brattleboro has told Chief Southworth that it has no facilities for the townspeople of Marlboro and the routes north and south are insufficient for the traffic.

MAINE-Maine Yankee Atomic Power Plant 790 megawatts
Began Operation in 1972

The plans were drawn up by Maine State Police. The plan would evacuate the communities of: Wiscasset, Boothbay, Edgecomb, Woolwich and Westport. If a 6-mile area around the plant were contaminated by a nuclear accident, roadblocks would be set up; police, fire and civil officials would meet at a pre-determined location and an alert signal would be sounded on the fire alarm system.

The plan is extremely tentative because success depends on which way and how hard the wind is blowing and on the availability of reception centers for evacuees and traffic conditions.

Maine Yankee plant superintendent, John Randazza, stressed that Maine Yankee's rural location was chosen because evacuation would be easier in Wiscasset than in congested metropolitan areas.

The townships surrounding the location, within a 10-mile area are somewhat unique in that of the nine towns, four of the towns are located in their entirety on islands with single exit routes, while large portions of two others are also island located. The area also includes several small populated islands which are inhabited year round with substantial increases in population during the summer months. The islands are not connected via road bridges and evacuation would be by water only.

By reducing the radius of concern to 6 miles from the site, the townships of Boothbay Harbor, Southport, Arrowsic, and Georgetown can be excluded, bringing the census population in the concerned area to 6,240.

MARYLAND-Calvert Cliffs Nuclear Power Plant 845 megawatts
Began Operation in 1974

The reactor is located on the western shore of Chesapeake Bay about 45 miles SE of Washington, D. C.

No provisions have been made to inform the people within a 2-mile radius of the plant about a planned rehearsal of the evacuation plans.

C.

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Frank Ingram of the AEC office of Information Services has advised Dr. Bruce L. Welch who is an Associate Professor in the Johns Hopkins University School of Medicine that he knew of no nuclear plant in the Union which distributes people living nearby on safety procedures for nuclear emergencies or on the nature of the emergency actions that are planned and practiced on their behalf. INGRAM ALSO ADVISED THAT IT IS THE AEC POLICY TO AVOID PROVIDING SUCH PUBLIC INFORMATION IN ORDER TO AVOID ALARMING PEOPLE. Regulations require, Welch said, that it be possible to evacuate people who live within the technically defined two-mile radius "low population zone" around the nuclear reactors within 2 hours of an alert.

People cope more effectively in any emergency if they know what to do in advance. People tend to irrationally resist evacuation from disaster areas even when confronted with the most severe threats.

Plans call for converting the autopsy room at Calvert County Hospital to a radiological decontamination area, but that persons receiving more than 100 rads of radiation would be transported under auspices of the Radiation Management Corporation of Philadelphia to the University of Pennsylvania Hospital in Philadelphia for decontamination and treatment.

Dr. Welch feels the utility should undertake immediately a mailing of information to residents in the two-mile "low-density" area, many of whom have no idea this area exists, outlining emergency procedures both within the confines of the plant and evacuation procedures for the surrounding area. The public cannot be expected to wade through 100 typewritten pages of the emergency evacuation plan. Simple easy to understand instructions should be prepared for distribution in the area involved.

QUESTIONS THAT HAVE ARISEN IN OTHER STATES

Are citizens prepared for an emergency evacuation announcement?
Do citizens know the warning signal?
How large is the evacuation area: 2,3,6,9,14,20 miles?
Is an evacuation radius set up to stop just short of major population areas?
How will citizens know which routes to take for evacuation?
Are certain state and state-aid highways closed in case of a disaster as in Vermont?
During school hours are children to be evacuated out by busses?
What transportation is available to those without cars?
What provisions for reuniting families if children are in school, mother at home, husband at work?
Who is in charge?
Are government officials prepared?
Are city hospitals prepared?
Will some hospitals refuse to treat radiation victims because it is costly to decontaminate their emergency rooms?
Are Civil Defense and the State Health Department prepared?
Will volunteer rescuers have qualms about going into a radioactive zone?
Will contaminated people be forcibly stopped from entering noncontaminated areas?
How much monitoring equipment is available?
What is the extent of monitoring capability? Alpha, beta or gamma only?
How long does a meltdown take?
How long does it take to evacuate a low population zone?
What part do the wind and weather play in an emergency evacuation?
What provisions are made to cope with 6 feet of fresh snow?
What is the combined frequency of severely inclement weather (i.e. immobilizing weather—blizzards, hurricanes, fog, driving rain, heavy snow, ice, high winds, dust storms combined)?

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Are emergency plans being updated frequently?
Is full evacuation testing of units being done within one year of a reactor's being fueled as required by NRC regulations?
Will widespread knowledge of an emergency evacuation plan cause panic?
Do people cope more effectively when informed?
Are simple easy to understand instructions prepared and distributed in the 2-mile "low population zone"?
Are emergency plans available to neighboring states when reactors may be just across the river or state or county boundaries?
What arrangements have been made for military personnel and their families within the evacuation zone?
Would factories, residences, military bases, etc. be given priority treatment in decontamination?
What provisions for increased populations due to tourists and/or recreational activities have been made?

What do we know about emergency evacuation plans in Wisconsin?

You can secure an emergency evacuation plan for the Genoa nuclear plant by inspection at the Nuclear Regulatory Commission's Public Document Room in Bethesda, Maryland according to a letter from Thomas A. Steele, Manager, Environmental Department of Dairyland Power Cooperative, Genoa, Wisconsin.

The emergency plan for Point Beach reactors IS WITHHELD IN ITS ENTIRETY FROM PUBLIC DISCLOSURE which seems to confirm earlier information that the policy is to avoid providing such information to the public in order to avoid generating concern. Letters to the Manager of the Point Beach Nuclear Power Plant in care of Wisconsin Electric Power Company and to Sol Burstein of Wisconsin Electric Power Company asking where a copy of the emergency evacuation plan or plans could be secured have gone unanswered.

The Kewaunee Nuclear emergency plan can be secured from the Kewaunee County Library (or 25.25), the Public Service Commission in Madison or the Public Document Room in Washington, D. C. according to the Superintendent - Nuclear Power, Wisconsin Public Service Corporation. You are asked to use the most recent updated report.

CONCLUSION: It is apparent that emergency evacuation plans are not readily available to the public.

In the plan on Kewaunee there is no indication of the type of warning signal that would be used to the populace. There is no discussion of school children or busses available for transporting these without cars. Final decisions on the need for assistance and public agencies concerned will be made by the Plant Superintendent or authorized representative. All releases to the news media shall originate from the Plant Superintendent's office. IF SENT HOME, PERSONNEL SHALL NOT PUBLICIZE THE INCIDENT AND SHALL REFER ALL REPORTS TO THE PLANT SUPERINTENDENT.

Certain access roads will be barricaded. Evacuation will cover an area of approximately 11 square miles. Within this area are approximately 50 occupied residential/business dwellings and some trailers located at the Rader Trailer Park. The State Civil Defense will work with the State Police as requested in determining evacuation routes and relocation centers. They will make the necessary arrangements for food, lodging and medical care of evacuees if necessary.

CONCLUSION: Citizens are not aware of the warning signal. It is possible to conclude they have not been informed about evacuation procedures or the fact they may be part of the 11-square mile evacuation zone at Kewaunee.

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Are cities in Wisconsin prepared?

Mrs. Kathryn A. Malin, Village Clerk at Genoa writes, "I'm afraid I can't be of any help. I am unaware of any emergency evacuation plan. Possibly there is something in the file, but I am unable to locate it."

Thomas Kelliher, Mayor of Kewaunee writes, "I'm sorry to have to report that we have no special plans except those set by Civil Defense. Kewaunee City and Kewaunee County have had Civil Defense Directors for over 12 years. Both are very active, but I do not know of any special plans set up because there is a nuclear plant 8 miles from the City of Kewaunee. However, I do know that Civil Defense plans for safety of people have changed much in the last 5 years. Where, in the past special evacuation plans had been called for, new plans and instructions have to do with what thepeople can do in their own homes.* This new setup seems to me to be more realistic. People, in times of danger, want to be with their loved ones and homes, and care little to be removed from them. So you see, it is better to train them to protect them in their homes inasmuch, as there is the place they will stay. I'm sure information on the subject matter is available to you from Wood County as it regards your safety. As far as we are concerned WE FEEL SAFE EVEN WITH THE NUCLEAR PLANT IN OUR COUNTY."

From the Fire Chief of Two Rivers in response to a letter written to the Mayor or City Manager of Two Rivers. "We have 2 nuclear plants in our area, the Point Beach Nuclear Plant is 16 miles from our city. We do have an emergency evacuation plan from these plants. All city and county officials have been briefed on these plans. As Fire Chief I had all of my officers given a tour of the plants, we did this before the plants were in operation so we got into many areas that are now off limits to everyone. The Two Rivers Community Hospital has a decontamination room that was furnished by the two nuclear plants. The room is isolated from the rest of the hospital, and can be used for the hospital for any other emergency they feel they need it for. Two of our local doctors were sent to school by the two nuclear plants to know what to do if they had to treat someone for radiation. As far as any information on the School System, I don't know about that, but the Point Beach plant has a 3-story building for information and schooling of visitors to their plant. It gives a complete mockup of their plant and they try and explain by the use of films and slides how a nuclear plant operates. If you are ever in the area it would be well worth the time you spent to include this in your tour of our area. After seeing all of the safety features that are built into these nuclear plants I FEEL VERY SAFE IN THE CITY OF TWO RIVERS."

CONCLUSION: Government officials may be convinced that a disaster is impossible and, therefore, unprepared to protect citizens.

The Superintendent of Schools at Manitowoc sent a copy of their Disaster Protection Policy in case of nuclear attack. Busing of students is provided by contract carrier and the Superintendent did not indicate there are any special instructions in case of an emergency evacuation due to a nuclear power plant mishap. No reply was received from letters sent to the Superintendent of Schools at Kewaunee or LaCrosse.

Other problems to be considered in relation to emergency evacuations:

Could two doctors who have been trained to treat radiation, cope with a major release of radioactivity and the victims involved?
Are there enough trained personnel outside the immediate reactor site who would

* I completed the Emergency Government Radiological Monitoring Course in Portage County, Wisconsin, in March 1975. People were advised to go to certified shelters unless they had their own private fallout shelters. Normal construction of homes will not protect from penetrating gamma radiation.

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know how to handle and treat evacuating radiation victims?
Are medical staff personnel completely informed and trained?
Is a well-thought-out plan drawn up and impressed on the minds of regular hospital staff and volunteers as the initial catastrophe could be multiplied by hysteria and gross confusion as non-irradiated individuals did their best to avoid being contaminated by victims rushing to them for aid?
If the hospital room is connected with a general air conditioning system are means available to provide a disconnect to prevent dissemination of radioactive material throughout the hospital?
It is possible the hospitals and clinics in a reactor area might themselves be severely contaminated and require evacuation.
A panicky citizenry could inflict injury on itself even if contamination were not present.
How do you persuade people to go at all in the absence of any visible or sensible threat?
Would evacuees be willing to part from their property on a long-term basis?
Would evacuees want to return to the area and begin cleaning up when this can only be done by decontamination crews?
If people perceive they will have to remain out of the area for a while, traffic congestion may be caused by people trying to stock up on food and gasoline.
Will farmers be willing to abandon their livestock on a long-term basis?
What consideration has been given to factories and other special kinds of places of employment?
What consideration has been given to those who are bedridden, handicapped or imprisoned?
What provisions have been made for Congressmen's families living in the evacuation zone?
What happens if a tornado cuts off escape routes?
Do escape routes bring people closer to the plant?

Radiation sickness is not contagious; one person cannot "catch" it from another. On the other hand, when the victim has been directly exposed to fall-out--very small particles of radioactive material attached to dust and other matter suspended in the air -- the victim himself, along with his clothing, is a "carrier", capable of irradiating other persons. Clothing must be removed and decontaminated, and the victim washed down to remove radioactive dust from all skin surfaces, otherwise he can expose other people.

Complications arise when one considers the procedure of washing down bodies of contaminated persons. In the vicinity of a large nuclear plant accident where fission products and gases were released outside the structure — the water supply itself might be contaminated. Water sources invariably supply drinking and bathing water to nearby communities. Contamination of bodies of water will occur both by direct fallout and by secondary leaching of the materials into the streams.

CONCLUSION: It appears that people in Wisconsin as well as elsewhere are being asked to live next to reactors or downwind from reactors without any real knowledge of how to protect themselves or what to do in an emergency. They do not know decontamination or evacuation procedures.

It is known that people are more able to cope effectively when informed, and this lack of information in Wisconsin is a reprehensible aspect of nuclear power plant proliferation.

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Why have these plans been done so ineptly? The evidence indicates that officials are afraid that the public would panic and refuse to allow the construction or operation of nuclear plants if they knew of the evacuation plans. They are afraid that the public will realize the magnitude of the hazard involved and decide against taking the risk. Senator Howard Baker of the Joint Committee on Atomic Energy has been quoted as calling nuclear power "...probably the biggest risk, the biggest single risk, that any civilization has ever taken."

The fact that emergency evacuation plans ARE required and that the planning and execution of these plans are covered up and unenforced reveals the very great degree of hazard presented by nuclear power. Not the least worrisome aspect of this problem is the intentional abuse of the democratic process that has been allowed. In that its effects, implications and consequences are so important and far-reaching, the hazard of nuclear power and its coverup are more portentous for the future of our system of government than Watergate. The coverup should be ended. The public should be made fully aware of the extent of hazards and then be given a real chance to accept or reject nuclear power with all the facts in hand.

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SUMMARY OF COMMENTS RECEIVED
CONCERNING PIRG PETITION FOR RULE MAKING

Following official notice of the petition by the Commission, comments were received in various forms from a number of private citizens, law firms, utilities, consultants and industry interest groups. Following a specific request later by the Commission to the States and Puerto Rico, comments were also received from the governors of the States. This enclosure contains a summary of comments in the following order: (a) from the Public, (b) from utilities, law firms, and consultants, (c) from other industry interest groups, and (d) from state governments. The "NOTES" are staff comments.

The basic points that were outlined in the letters received from the Public are:

a. "I support Rulemaking Petition, Docket No. PRM-50-14 requiring the distribution of plans for evacuating the areas surrounding nuclear power plants in case of accidents. In addition, I feel it is important to have actual test drills."

"According to the American Physical Society's study, a nuclear accident will require evacuation out to a distance of at least 40 miles. A nuclear accident could cause tens of thousands of casualties, genetic mutations, billions of dollars in property damage, long term land and water contamination, and destruction of food production on affected land. Workable evacuation plans could at least cut down the number of casualties."

b. "Illustrations from New York, Massachusetts, Michigan, and Minnesota show serious deficiencies in evacuation planning. As the nation's prime nuclear regulatory authority, the Commission has an obligation to act. According to Commission regulations, a facility should not be operating unless the licensee, in its Safety Analysis Reports and later amendments, accurately represents to the Commission that licensee and governmental emergency plans are satisfactory by Commission standards. Yet, plants lacking satisfactory emergency planning are presently in operation. Petitioners' proposed regulations offer a first step toward bringing emergency planning up to standards. Requiring the filing of the fully detailed plans will permit closer scrutiny. Mandating public notification and limited drills involving the public will elicit citizen input and will force licensees and government officials to test the effectiveness of their plans before the stakes escalate."

c. "...without decent planning at either the state or federal level, the public should, at the very least, be given a chance to protect themselves. The Rulemaking Petition provides them with this chance by informing each individual household of the protective actions they can take. Furthermore, such increased awareness will undoubtedly lead to reviews and questioning of the adequacy of local plans and demands for their improvement.

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"By requiring that the plan (or an approved facsimile) be distributed to 40 miles, many of the possible affected citizens will receive protection. At the present time, according to Purple's letter, the range on low population zones extends from 0.68 miles to 10 miles. The Rasmussen report, however, states that the lethal effects of radiation could extend 10 to 15 miles downwind, and assumes evacuation will take place at least 20 miles downwind. According to a study done by the American Physical Society a nuclear accident will require evacuation out to a distance of at least 40 miles from the plant. Neither this nor the NRC's own report are reflected in establishing the limits of the LPZ's. In the case of the Maine Yankee LPZ no planning has taken place beyond the 6 mile radius."

"Moreover, by distributing plans to citizens in a 40-mile radius, fear and possibly panic could be mitigated. Advanced warning through these plans would inform those citizens not downwind that they need not worry, for indeed all citizens will hear evacuation notices broadcast over radio and TV."

"Concerning the issue of annual drills involving specific sectors of the 40 mile circle, we strongly believe such drills are worthwhile and necessary exercises. Drills for state and local agencies

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at TVA plants in Alabama and at the nuclear plant in Monticello, Minnesota showed emergency plans for those plants to be a failure. A mere communications network drill for the Vermont Yankee plant in Vernon, Vermont was also a failure. If drills involving officials who are supposedly informed and who would be directing hundreds and possibly thousands of uninformed citizens are failures, what faith can we put in the actual plans and public response and reaction to them? Annual drills are required for nuclear plant personnel. By the same token, and judging from past experience, such drills should also be required yearly for local officials and members of the general public. Only by drills will we learn of the adequacy of evacuation plans."

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COMMENTS OF UTILITIES, LAW FIRMS AND CONSULTANTS

A number of UTILITIES, LAW FIRMS AND CONSULTANTS AS well as TVA and other interested groups provided comments on the petition. All of these concluded that the petition should be denied. A summary of these comments follows.

Commonwealth Edison

With regard to actual evacuation of the public during drills, we are convinced that the additional hardship associated with the mass movement of the public would far outweigh any conceivable benefit. We do believe that training and drills involving the licensee and responsible public agencies now being conducted regularly are desirable.

With regard to distribution of safety analysis reports or parts thereof within a radius of 40 miles from a nuclear power plant, it is hard to believe that the proposal is seriously advanced as a mode of increasing public safety. Indeed, it shows clearly that the purpose of the relief sought by the petition is simply to promote the anti-nuclear policy positions the intervenors are adopting.

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Northeast Utilities which includes

Connecticut Light and Power Co.

Hartford Electric Light Co.

Western Massachusetts Electric Co.

Holyoke Water Power Co.

Northeast Utilities Service Co.

It is not statutorily or historically within the province of privately and publicly owned corporations to plan or conduct public evacuations; rather public evacuation is rightfully the responsibility of state and local civil preparedness and law enforcement officials. However, NRC licensees are already obligated to cooperate in such evacuation plans and voluntarily do so.

Information regarding emergency plans is already on file in public document rooms. Dissemination of plans requested by the petitioners would lead to public uncertainty and confusion, as well as hinder, if not render impossible, reasoned judgment on what constitutes an emergency or a disaster level requiring area WIDE EVACUATION.

There is a definite hazard to the health and safety of the public in conducting an evacuation drill. The hazard is simply not justified in light of the low statistical probability of a major reactor accident.

The procedures requested by the petitioners are not required for other potential hazards having far greater probabilities of occurrence.

Omaha Public Power District

We are in agreement with the comments submitted by the firm of LeBoeuf, Lamb,

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Leiby & MacRae of November 14, 1975

Rochester Gas and Electric Corporation

We are in general agreement with the comments submitted by LeBoeuf, Lamb, Leiby and MacRae. In addition we believe that the suggestions of the petitioners are unreasonable and unnecessary. Existing rules provide for the necessary flexibility in emergency planning.

It appears that the petition and the recommendations made therein were designed for the purpose of harassment and with the recognition that implementation thereof would be likely to create a distorted impression of the risks of nuclear power.

Southern California Edison Company

Offsite emergency response is generally regarded to be the responsibility of state and local entities and agencies having jurisdiction with respect to areas surrounding a nuclear site. Emergency response jurisdiction in California has been vested by law in the Governor. Emergency plans have been developed in California with guidance provided by Federal agencies.

The actions sought by petitioners would at best be redundant and at worst tend to confuse and complicate implementation by agencies having jurisdiction and should, therefore, be rejected.

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Stanford Research Institute (Consultants) on behalf of

Cleveland Electric Illuminating Co.

Duquesne Light Co.

Indiana & Michigan Power Co.

Kansas Gas and Electric Co.

Northern States Power Co.

Ohio Edison Co.

Toledo Edison Co.

Union Electric Co.

Wisconsin Electric Power Co.

It is our belief that while evacuation planning and command personnel exercises are useful measures for insuring the success of actual emergency evacuations; that instructing citizens regarding evacuation procedures is at best only marginally useful, not clearly cost-effective and possibly counter-productive if response flexibility is restricted; and that drills of evacuation plans involving civilian participation are unnecessary and most likely counter-productive. We believe that current Federal requirements and programs represent a well-thought-out effort at interagency coordination which is fully adequate to the need of nuclear disaster preparedness.

Tennessee Valley Authority (Chattanooga)

TVA participated in the Atomic Industrial Forum review of the petition and fully supports the response submitted by the AIF and agrees that the subject rulemaking is neither necessary nor justified.

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Yankee Atomic Electric Company

We feel the proposed amendments would improperly represent the public health protection role of a nuclear power plant emergency plan, would unduly alarm the general public, and could not be implemented because of jurisdictional conflicts. It is our view, therefore, that the petition for rulemaking consideration should be denied.

Atomic Industrial Forum, Inc.

In considering overall risk to the public, due consideration should be given to the risk contribution of nuclear power plants as compared with other natural and man-made disasters when considering the degree of preparation required. The radiological emergency response plans of states and local governments should coordinated with and be made a part of, or annex to, the general emergency response plan.

Measures beyond those expended for other potential disasters should not be imposed for postulated nuclear accidents, which do not contribute significantly to risk.

In summary, it is concluded that the emergency planning requirements in 10 CFR Part 50 and companion guidelines, in conjunction with the rigorous

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design bases for nuclear power plants that are required through NRC Staff licensing review and the "defense in depth" approach provide measures which present low risks to the public. Through this integrated process, requirements for public safety are met. Disproportionate attention has already been focused on the relative importance of planning for nuclear incidents as opposed to other potential disasters of higher risk and, in this regard, the impact-value considerations noted herein do not point to the need for isolating and directing further attention to this specific risk. We therefore contend that the subject rulemaking is not necessary or justified.

Babcock & Wilcox

The petition for public evacuation is an obvious ploy by the PIRG to deliver a harsh blow to the nuclear industry. The disturbing impact on residents would serve to completely alienate the general public from the nuclear industry.

The petition appears to be yet another attempt to make the nuclear industry play by rules different from the norm. The petition should not be considered until such time as it has been applied to all credible "major incidents" (including natural) that have a higher probability of occurrence.

Finally, the petition requirement to "instruct citizens in public evacuation procedures" is impractical. This would only serve to cause mass confusion without results. Rather, the training of critical groups (police, fire departments, hospitals, National Guard, etc.) is a preferred and universally employed method of handling emergency situations.

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Council on Energy Independence (Chicago)

We are opposed to any amendments which would require such extensive evacuation drills as called for in the petition. We do believe that instructions explaining what emergency safety steps should be taken by citizens in case of an accident should be made available to the public.

At the present time there exists within the regulatory framework a means for conducting periodic drills for the purpose of evaluating emergency evacuation plans. The NRC and other government agencies have given due consideration to the need to develop and implement evacuation procedures.

In light of the safety record of the nuclear industry and the low probability of an accident which would necessitate any such evacuation of the public, it would appear that there exists no justification for the extensive evacuation plans called for in the petition. Moreover, at this time there exists no mandate which would require the public to participate in such extensive evacuation. In addition, the public has expressed no concern for the need to develop and implement such extensive procedures nor has there been given any indication that the public would be willing to take part in such annual evacuations. In fact, some individuals and businesses, etc., may well be diametrically opposed to such participation. Many may feel that whatever potentia benefits are to be derived from such participation are far outweighed by the loss of time and revenues which may have a significant adverse effect on the community.

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Information concerning what steps are to be taken by the public in case of an actual evacuation should be made available to the public. Such information should be made available only upon requests from concerned citizens, businesses, etc. located within the low population zone. Such information should contain general statements and list those agencies that the public can contact, in case of an actual emergency, for specific information on evacuation measures. Such distributed information should include a discussion of probability for the need of such an evacuation as well as the number of actual evacuations that have taken place at other licensed nuclear facilities. Notice should be given by the utility that such information is available. Such notice should be given annually and could be distributed with an electric bill.

We believe that the subject rulemaking is neither necessary nor justified.

LeBoeuf, Lamb, Leiby & MacRae (Law Offices)

In our opinion, no useful purpose would be served by the subject rulemaking proceeding.

Our experience has been that NRC (AEC) Licensing Boards have consistently upheld the adequacy of emergency plans which do not provide for such planning actions as proposed by petitioners. They have done so not because of constraints in the regulations, but rather on the merits, even after consideration of contentions to the contrary. Witnesses for the state having responsibility for off-site protective action in an example of such contentions before a Licensing Board testified that the use of advance written instructions would be unreliable and might be self-defeating, and that

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there is a need to preserve flexibility in response. Advance instructions could well result in members of the public taking the entirely wrong action for the particular circumstances. The need to preserve flexibility in choosing among the substantial number of differing protective actions which should be available in an emergency has been reaffirmed in an EPA manual on the subject (EPA 520/1-75-001).

Thus, the contention that the proposed actions are an indispensable part of an effective emergency plan has been considered on its merits and rejected. No basis appears in PIRG's petition to justify reopening these questions on a generic level. Emergency planning is an important subject and should be given continuing attention, but the recommendations of PIRG do not warrant treatment in a rulemaking context in the light of existing adjudicatory rulings.

COMMENTS FROM STATES AND PUERTO RICO

A specific request was made to the governors of each state and Puerto Rico for comments on the petition.

As a result, comments were received from 35 states and Puerto Rico. While letters were received from two states (Connecticut and North Dakota) indicating,

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MARGINAL NOTES ARE FOR INFORMATION OF REVIEWERS, NOT TO BE IN FINAL

NOTE: The New Jersey Comments are verbatim, take care not to change or edit

that the request would be answered by state agencies, no comments were received. One state governor felt that the state was in no position to offer comments (Wyoming).

NOTES: There were no comments received from other Federal agencies except TVA which is included above.

Because of the comprehensiveness of the comments from New Jersey and the fact that that state's comments reflect quite well the combined comments of other states responding, the comments from New Jersey are listed first in their entirety, verbatim. The comments are believed to be an excellent summary of governors' comments. A summary of other comments by state follow those of New Jersey.

New Jersey

We are basically in agreement with PIRG's resolve to promote the dissemination of emergency preparedness information and to conduct preparedness drills. We also believe that the Nuclear Regulatory Commission has a special duty to reduce the possibility of nuclear incidents by reviewing and commenting on emergency plans.

However, we take exception to PIRG's approach to public discussion and public education and their views regarding full-scale or even large-scale public drills.

ENCL B

PUBLIC DRILLS

We believe that the most important elements in gauging the effectiveness of an emergency plan is to measure the ability of the Decision Maker to exercise control throughout the course of an emergency and to insure that all supporting elements are properly coordinated in response to changing requirements. The ability to communicate is the key to adequate feedback concerning the course of response actions and changing accident parameters.

The speed and accuracy of accident assessment, the time it takes to warn the entire target population after the initial decision, the alerting of supporting element commanders, the mobilization of support force workers and equipment, the time required to warn residents, and the time required to remove them from the emergency area are all essential elements of an evacuation response. Not all of these can be tested simultaneously. Some of them are virtually untestable. If any valid judgements are to be made regarding the workability of a plan, drills should be designed to force an interaction of all these elements. Obviously, there is no possibility of staging such drills.

The problem area of least concern is the actual movement of people - the one element that is also the most difficult to test and the one that will probably be the least productive in terms of gauging public safety.

A number of objections to public evacuation can be identified on the basis of cost, risk, public cooperation, and feasibility.

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Cost - Because there is the possibility of accidents during a test evacuation, provisions must be made for public casualty insurance. Since public safety is a function of government, and since public emergency plans are developed and administered by government, the cost of insurance should properly be absorbed by government. This is a situation that would prevail for evacuation drills involving any type of emergency and the main reason that such drills are avoided.

If such drills could be sanctioned, loss of goods and services by evacuees could be controlled by judicious selection of sectors to be evacuated. However, this type of control could detract from the results of the drill.

Risk - If the feasibility of evacuation drills is accepted, they should not be undertaken any farther than necessary. It is hoped that the outer limit of evacuation would be based on a realistic dose commitment rather than action guidelines with a built-in safety factor. If the risk attributable to movement approaches the order of risk from a specified radiation exposure, other countermeasures would then be advisable.

From the point of view of public safety, there should be a distinction between evacuation radii and radii for dissemination of special instruction in situations where evacuation is not warranted. Experience shows that casualties resulting directly from an evacuation will increase in proportion to increasing population density. Under certain accident conditions, this may require the Decision Maker to accept a calculated risk by shrinking the zone of evacuation.

PUBLIC EDUCATION

A utility may advise and possibly even influence a decision affecting public response but it has no authority to decide or force public action. This responsibility belongs to government. Government cannot vacate it. It follows that government alone is responsible for explaining its own actions.

Government may ask the Utility to act in its behalf in several respects. It may be proper for the Utility to explain the technical basis for actions affecting public response. It may even be expedient for local governments to accept the responsibility for a Utility's emergency recommendations. But it would be foolhardy for government to allow any private agency to interfere in the planning process or in the execution of those plans.

In States that have no professional emergency planners, it may be convenient to request a Utility or its consultants to draft public emergency response plans. But even in this circumstance, government will still have the responsibility to decide on courses of action and to accept the responsibility for decisions. In effect, government becomes responsible for these plans regardless of the expertise of consulting services or the comments of any reviewers.

Since the Utility can neither control nor pass judgement on public emergency plans, the PSAR or FSAR is not, in our opinion, the place for documentation of public response requirements. The professional agency of government responsible for the development and coordination of public

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Cooperation - The biggest problem in attempting drill evacuations is to enlist the cooperation of the public and to induce government to back the venture with full support. Widespread public apathy to active participation in disaster drills is well known.

The public will openly discuss and will take part in any procedures for self-protection when they decide that the measures are needed and the actions are convenient. There must be a serious concern for the dangers involved before the public will consent to any personal or collective involvement. The concern for a class 9 accident will have to equal or exceed that associated with natural disasters.

Conditioning the public, as PIRG points out, is an important step in a successful evacuation. However, there is a real danger in conditioning the public to a low-probability accident while higher probability risks are practically ignored.

Feasibility - To the professional planner, sector evacuation may be regarded as a convenient tool to be converted to warnings to an affected population within a political jurisdiction. This conversion should be made by the Decision Maker. PIRG is apparently concerned with evacuations conducted by sectors. This leads to immediate difficulties. For example, what measures can be taken to constrain a resident within earshot of a Red Sector when the Red Sector is ordered to move. Or what system of public signals can be devised to distinguish between sectors.

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emergency plans is the only agency that has the right to officially publish and distribute these emergency plans. Since every State has a responsible agency for this purpose, a possible solution to the problem of coordinating the Utility's and the Public's responsibility for reactor licensing would be to require an agreement between the State and the Utility committing the State to develop adequate plans to meet Utility deadlines once the State formally consents to the granting of a construction permit.

PUBLIC INFORMATION

Public response plans are essentially a delineation of responsibilities of the forces and agencies assigned to assist the public (who does what, when, and where). Individuals should not be burdened with information written for the instruction of groups charged with their welfare, no more than the public depends on the knowledge of Police Operation Orders for assurance of safety.

Dissemination of information about evacuation plans for a reactor accident is reasonable. But it implies that the same must be done for all the more probable emergencies resulting from fixed hazards. This would logically require a study of the relative probability of all possible fixed location risks so that appropriate evacuation plans can be developed as a widespread acceptance of the notion of public protection.

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Alabama

It is agreed that a general evacuation plan is necessary, but we question the appropriateness of a detailed plan as it may limit response to situations that may actually occur.

In many cases evacuation is not the protective measure of choice.

No benefit is seen from evacuation of people as a drill. Experience in evacuations throughout the U. S. because of chemical hazards has indicated that actual evacuation through drills is unnecessary. Emergency procedures should not be limited to nuclear facilities but should provide for non-radiation hazards as well. Plans should be tested and instructions disseminated, however.

It is suggested that NRC provide grants to states and local governments shortly after construction permits are issued to provide emergency plans to meet unique needs of each site.

It is suggested that an inflexibile system of guides, regulations, etc., be avoided.

ENCL B

Alaska

The development of emergency evacuation plans and their dissemination to the public should be a part of licensing procedures. Plans should be reviewed and updated with local officials and the public at large. The extent to which drills involving the public are actually necessary should be handled on a case-by-case basis. Regular drills involving the public may be unnecessary or impractical.

Arizona

Under Arizona law it does not appear that physical evacuation is enforceable, particularly in drills and exercises. It is assumed that large numbers of people would not or could not cooperate.

How could evacuated areas be protected from vandalism and looting short of National Guard protection?

Who would pay for the costs and assume the liability? Accidents, burglaries, acts of violence, etc., would be associated with drills which would also require just compensation. Who would pay for training of hospitals and paramedics?

The inclusion of an Armed Forces installation in drills could affect national security.

Dissemination of information concerning an alert and evacuation to the public could cause undue alarm which could be detrimental in itself. Also, evacuation in case of a nuclear accident may not be the proper protective procedure. Should similar exercises be conducted for dams?

No comments from Arkansas were received

ENCL B

California

The petition proposes problems that would seriously affect local government and the licensee.

Conducting exercises involving citizens around a licensee's property is absurd. The local government has the basic responsibility for providing plans, training, and conducting exercises, but may not be willing or able to provide the services a licensee may require for carrying out an exercise as proposed. Financing emergency planning poses a problem also, since whether by taxation or licensee costs the consumer will bear the cost.

The licensee is in no position to direct such operations without local government and popular cooperation which may not be forthcoming which may result in no choice except to cease operation.

Evacuation may not be the best means of protection. The petition considers no other measures.

Dissemination of emergency planning information by a licensee could be made in the same envelope as bills as is other information under current practice.

Colorado

The requirement for issuing emergency instructions, by the nature of those instructions, tends to build false fears in the minds of the general public as to the real need for such instructions. In many cases these false fears are worse than the real dangers.

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When the risks encountered by practicing the evacuations are orders of magnitude greater than the risks from which the evacuation is protecting, the practice evacuations are counter-productive. Tests of notification systems, organization plans, and verification of plans would be far more productive, and would not disrupt normal operations.

Distribution of instructions to each household perhaps 1 - 5 miles from a facility would be advisable along with an opportunity of residents to discuss the situation. Dissemination through the public media is an excellent idea and should be required.

The conduct of actual evacuation drills is impractical. Actual evacuation of homes and businesses should not be required. "Mock" evacuation would be more realistic but only out to a distance of 5 miles in a 30-degree sector.

Licensees should not be required to issue the FSAR describing evacuation plans to the general public. Evacuation plans could be made available through public meeting places, schools, libraries, and the news media.

Florida

The most significant objection to the proposal involves the imposition of a regulation which requires applicants to conduct a physical evacuation of people. An applicant does not appear to have a legal right to require people to evacuate in a non-emergency situation.

No comments from Connecticut were received.
No comments from Delaware were received.

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The health. social, and economic impact of evacuation of about 100 square miles containing a significant population density would be considerable. To consider doing this on an annual basis would appear to impose a much greater risk than any demonstrable risk from the facility. This could cause the actual evacuation of over 1 million people. The detrimental effects of such an exercise are beyond reasonable thinking.

The criteria assumed for the need to evacuate regions by the American Physical Society as stated by petitioners is questionable with regard to the sector proposed to be evacuated. The reactor core inventory appears to be an order of magni. ide lower than the material required to produce the hypothetical case of the petition.

The requirements for dissemination of information and training of certain persons is now effectively being done by the regulatory agencies of Florida. The Florida Radiological Emergency Plan is effectively tested at least annually at each facility.

The imposition of the arbitrary regulation is urgently opposed. The requirements are not in the public interest.

Georgia

The necessity for further restrictions in the form of amended regulations cannot be ascertained, unless it is proven by competent esearch that substantiated risk is involved which would affect workers and other citizens residing within a 40-mile radius of a fixed nuclear facility.

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We are opposed to the proposed regulations unless factual information from nuclear experts prove them to be essential.

The Georgia Emergency and Disaster Operations Plan is currently being revised and all possible hazards will be considered to assure the best possible approach to cope with such incidents.

Hawaii

Plant drills and plant evacuation are the direct responsibility of the licensee or applicant. The control and direction of the populace outside the facility are the responsibility of local or state government. Outside the facility, the facility manager should serve as a consultant to the public safety officials.

Perhaps the facility manager should be required to finance the development and distribution of instructions, the cost of drills, and periodic updating.

The question of liability during drills should be addressed.

No comments from Idaho were received.

Illinois

We agree that the public should be informed of plans for evacuation, but we think the plan must be made by local government in cooperation with the facility and selected State departments. We perceive that testing public evacuation with exercises would be too expensive to merit consideration.

A 40-mile radius from the facility for distribution of emergency instruc-

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tions is much too great. For Illinois installations the area would include the densest populations, would cross state borders, and would make planning almost impossible. Also, citizens of Illinois have successfully evacuated several areas without incident even though no evacuation plan existed. For these reasons we believe a five to seven mile radius would be sufficient.

Dissemination of information through educational sources and the public media is an excellent idea, but in addition information could be disseminated with the electric bill and detailed information given to radio and television stations covering the area. Upon implementation of an evacuation the media could be provided the detailed instructions.

With regard to evacuation drills, small drills for control personnel might be feasible but the expenses of a real drill would be excessive. Also, the the matters of security for evacuated areas would be of importance as would accidents during a government ordered drill.

With regard to submission of a report to the NRC, a report concernining the difficulties identified during control personnel drills prepared and discussed by participants would be much more useful.

The petition is unacceptable for the reasons stated above.

Indiana

Regulations currently in existence with the NRC are more than adequate to protect the public. Emergency planning provisions are included as an adjunct to the overall "defense in depth" approach to design and licensing. The NRC has developed regulations for emergency planning that justif[illegible] finding of "reasonable assurance" that the public health and safety is protected.

ENCL B

It is our view that distribution of emergency plans for evacuation, etc., is a state and local government responsibility, not a utility responsibility. Plans can be effectively exercised and tested without full-scale implementation of a population sector. Normal operating experience in the past has shown this to be true in government, as well as in private industry.

It must be considered that evacuation must be taken into account from both standpoints of additional danger to the public from the test evacuation itself and from the economic, social, and employment costs perspective.

We contend that the subject rule-making is not necessary or justified.

Iowa

We are reluctant to conduct actual public evacuation drills. Such drills would tend to stereotype or pattern a response which is undesireable because of the multitude of variables in an actual radiation incident. The statutory authority for the state to enforce an evacuation is questionable, and the legal liabilities for injury contracted during a drill would have to be pre-affixed. The conduct of an evacuation drill would place a financial burden on state and local governments.

The information in the PSAR, FSAR, and State Radiation Plan should be made available to interested individuals. These are available at a public library near each nuclear facility. Also, the state agency responsible for emergency preparedness information, planning, and review should be publicized as a convenient source of information for interested parties.

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Kansas

The changes proposed go beyond actual requirements for public safety near a fixed nuclear facility. It is agreed that there is a need for instructions indicating what emergency steps the citizen should take in case of a nuclear incident and that the licensee should be responsible for disseminating this information through educational sources and the public media. It is not agreed that a licensee should be required to conduct public drills.

The establishment of a fixed radius of 40 miles for the dissemination of information and conduct of drills is inappropriate. The potential danger areas should be determined on a case-by-case basis.

Kentucky

The requirement for the development of plans is sound, but it is suggested that the proposed regulations be specifically modified to require joint plan development by appropriate agencies.

The requirement for dissemination of the emergency plans through the news media is very desirable.

The requirement of the proposed regulations that actual population evacuation be undertaken yearly in minimum sectors is extreme, and potentially dangerous. Such drills will disrupt industry, commerce, and normal social activities in substantial areas and may affect large numbers of people. Disregarding the significant cost that such evacuations would place on all elements of the local economy, the risk to lives is unacceptably high unless justified by an imminent threat to a greater number of lives.

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The mass movement of people in all states of health and a mobilization of virtually every vehicle in an area make accidents, injury, and death too probable. In addition, the residual need for security and logistical support are not justified, despite the potential benefits that might be derived from practice drills.

The proposed regulations requiring a licensee to include emergency plans and associated implementation procedures in the FSAR is desirable.

Kentucky

We are in general agreement with the proposed amendment; however, we recommend that careful consideration be given to any practice run of an evacuation plan since even these practices involve certain risks to property and life.

Louisiana

It is quite evident to all concerned that extensive emergency planning provisions are already required by NRC. These emergency plan provisions involve interfaces among Federal, state, and local agencies, as well as the utilities. These plans are appropriate to each site.

Dissemination of information as proposed within a radius of 40 miles seems highly impractical. Concentration of this effort should be made within the low-population zone, certainly not 40 miles out.

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With regard to the request that actual evacuation drills be conducted, it is felt that impact-value considerations of the evacuation must be taken into account from both standpoints of additional danger to the public from the test evacuation itself and from economic, social, and employment costs perspective. Also, in the unlikely event of a nuclear incident, evacuation probably would not be the protective measure of choice.

Tests and exercises will be carried out on an annual basis by both utility and the State to test timing, communications, procedures, and equipment.

We feel that present regulations and guides already sufficiently provide for public safety.

No Comments from Maine were received.

Maryland

Current plans in Maryland provide for the warning of an accident or incident in the plant, evacuation as may be required, as well as monitoring, and health care. The plan is tested annually, but tests do not include actual evacuation of the resident population. Tests indicate that the plans are adequate.

Variations of possible incidents that could endanger people would call for different reactions. The most severe accident might eventually endanger people within a 40-mile radius; however, sufficient time would be available in such a case for intensive monitoring and warning well in advance of a critical time.

A practice evacuation would raise serious problems; traffic accidents, arson,

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burglary, etc. Who would be liable? Also, would such practice alerts and movements cause undue concern by the citizens so affected? Are the dangers of a plant actually so great? Also, it is doubtful that a local or state government could order a forced practice evacuation of persons from their homes.

There are serious doubts of the wisdom of accepting any of the proposed changes to the regulations.

Massachusetts

Dissemination of emergency preparedness information is already being done in Massachusetts. I agree that we can and should do more. However, I do not feel that the approach presented by PIRG is a sound method of achieving this goal. Responsibility in this regard lies with the State.

The impractibility of conducting large-scale public evacuation drills as suggested by PIRG raises very serious logistical problems. An evacuation drill conducted within a 40-mile radius would involve hundreds of thousands of people. I am not sure what would be gained in terms of emergency preparedness by such drills. In fact, I fear that such a drill would cause serious disruption and would endanger public safety.

It is agreed that all relevant state and local officials conduct frequent evacuation exercises to ensure coordination and effectiveness in the case of an emergency.

ENCL B

We recommend that the PIRG petition not be adopted. We feel that responsibility for emergency preparedness should rest with state authorities. We believe the public participation in such drills would be very counter-productive.

Michigan

Public evacuation plan distribution should not be the obligation of utility companies. Development, implementation, education, and distribution are the proper responsibility of state and local governments.

Prior education could increase the likelihood of a successful evacuation, but dissemination of detailed plans to the public would almost certainly be counter-productive. The variable nature of nuclear incidents mitigates against the possibility of prior decision making. Contrary to saving scores of lives, dissemination of detailed complex plans could result in increased unnecessary casualties caused by misinterpretation of complex and variable conditions.

Risk-benefit considerations does not indicate a need for a rule. It has been reported that the fatality probability from a major peacetime nuclear incident is 10,000 times less likely than for any other man-caused incidents.

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Cost effectiveness of the proposed rule also appears to be unfavorable. The cost will be borne by the consumer, with little probability of benefit.

The proposed 40-mile radius is excessive. Accidents, while of extremely low probability, may require no evacuation or evacuations of an extremely limited area close to the plant.

Our analyses indicate that evacuation drills are likely to be more hazardous than the nuclear incidents. Such drills are not in the public interest.

Minnesota

Experience has shown that in emergency situations the best instructions are short and simple. Use of the electronic media can be most effective in such situations. The public is generally prepared for the course of action because of the well-publicized Civil Defense Program. The proposed requirement that detailed plans be disseminated appears to be impractical.

Although there is no question that state and local agencies must have the capability to conduct evacuation of the public when it is necessary, the nuclear facility does not have the authority to order an evacuation. A Federal regulation requiring a facility to conduct an evacuation drill appears to violate this line of authority.

We believe that protection of the public from potential hazards from nuclear facilities will be best achieved by effective state emergency planning in cooperation with nuclear facilities, not by Federal regulations requiring evacuation drills.

ENCL B

Mississippi

The proposals for informing the public are commendable. However, the requested distribution of sections of the PSAR or FSAR which discuss public evacuation plans is questionable.

The annual production and distribution of public information materials could be astronomical, which would ultimately be passed on to consumers. Those citizens are already burdened with tax dollars in support of State agencies which will respond to incidents.

The 40-mile radius requirement will, under our present population, involve one-third of our citizens. With this and other considerations it would be unreasonable to distribute the PSAR within a 40-mile radius. However, one page of general instructions for evacuation of residents within a 5-10 mile radius for each establishment should be provided. These instructions should be prepared by state government and disseminated through normal media outlets, ETV and the Civil Defense Public School Programs.

With regard to actual public evacuation drills, one must consider the benefit-risk ratio, the cost-benefit ratio and legal consequences. I am concerned about the sources of funds required. However, annual exercises should and must be held to insure the validity of plans and that new emergency services personnel are fully aware of the roles they play in the plans.

The term "significant population" must be specifically defined in order to avoid misunderstandings.

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Missouri

Examination of the requested addition to 10 CFR Part 50 indicates that the goal of the petitioners is to close most of the existing nuclear power plants in this country and prevent construction of any new plants, except in the most remote areas.

The requirement for annual public evacuation drills is without precedent in this country. In the State of Missouri, the authority to compel evacuations, even in emergency situations, does not exist. To require a public utility to conduct such wide-ranging exercises is absurd.

The responsibilities for off-site planning for the protection of the citizenry is a primary duty of civil authority and this authority cannot be removed by administrative rule-making and assigned outside of government.

It is therefore recommended that you deny the petition.

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Montana

The NRC could best insure proper contingency planning for nuclear power plants and assurance of those plans being properly tested and disseminated by (1) providing uniform guidelines for use by state agencies; (2) providing financial assistance to state and local agencies for planning, training, testing, and exercising; (3) providing technical assistance; and (4) continuing appropriate research and development and keeping states informed of new developments. Included should be nuclear waste disposal and transportation of nuclear wastes.

With this support, it is felt that the states within their own disaster response plans could provide for the safety of their citizens.

Nebraska

We believe that the section of the petition which requires emergency preparedness drills and includes evacuation of people from designated areas is not reasonable or warranted. Better results are possible with a simulated drill of the specific area of involvement and contact with the public by local officials. The evacuation of people in a simulated accident exercise would have limited value.

The State Civil Defense Agency does not agree with the proposed rule. Plans have been developed and exercises have been conducted, but not actual evacuation although inhabitants in close proximity to plants have been contacted and advised of plans and listed in an annex to the plan.

No comments from Nevada were received.

No comments from New York were received.
No comments from North Dakota were received.

It would appear that actual public evacuation drills would cause more confusion and logistical problems in a non-crisis situation.

We believe our planning for this contingency is adequate.

New Hampshire

It appears that certain items in the petition, viz. distributing of emergency instructions to the public, dissemination of this information by public media, and conduct of public evacuation drills, are inappropriate to regulate by amendment of 10 CFR Part 50. These points, if indeed valid at all, are matters of public health and safety and are therefore within the purview of the individual states. Neither the licensee nor the NRC has any jurisdiction in these matters beyond plant boundaries.

The inappropriateness of the above naturally renders inappropriate that portion of the petition which would make these items prerequisite to issuance of a license or amendment.

North Carolina

We agree that instructions should be issued to the public, and through the use of educational sources and the public media. However, such actions must be limited to a reasonable distance from the nuclear facility. We do not concur with the 40-mile planning factor or the proposal concerning an actual public evacuation drill within any area.

The adverse impact of actual evacuation drills must be considered. Over any

given peiod of time we believe that the cost in terms of public funds expended, business losses, personal inconvenience, and the risk to public pfoperty and safety would far outweigh any benefits gained. It is extremely doubtful that the public would endorse or participate in such a venture and, under existing state law, a practice evacuation cannot be enforced.

Ohio

The State of Ohio strongly objects to several items in the proposed rule change petition.

It is felt that a 40-mile radius is an exessive limit based on physics principles involved in a potential release from nuclear power plants. In no way can Ohio support a public evacuation process that is planned for and implemented by a private organization. Such a process must be vested in government, preferably municipal or county. The licensee may arrange with government to conduct a limited exercise in warning; however to enforce an unwarranted evacuation drill creates multiple problems and hazards. The public reaction could range from panic to extreme discontent and non-compliance, therefore gaining nothing from such drills. Also, because of these views, notification is not needed.

The 40-mile radius is felt to be extreme. Also, there is no need to publish sections of the PSAR or FSAR although there is no objection to providing public disclosure to them through any type of media, and they may serve to answer questions the public may have. However, a forced disclosure is not needed.

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While a licensee may request an evacuation drill of the facility itself and the immediate adjacent area, it would have to be controlled and implemented by local government. Such drills should not, however, be a mandatory requirement.

Oklahoma

In general, the petitioners propose measures in direct opposition to the philosophy and, in many cases, the constitutions and laws of the states. The responsibilities outlined in the Petition rests squarely with the state and cannot be delegated or usurped.

The reqirement for the facility to distribute emergency evacuation instructions to everyone within 40 miles of the site is unreasonable and would not materially increase or benefit the public health and safety. The evacuation of people from their homes and places of business solely for the purpose of practicing the evacuat on would be an irresponsible act and would cause harm due to disruption which would far outweigh the miniscule benefit which they would receive.

It is important to point out that emergency plans are exercised frequently by state and local agencies under real emergency conditions (e.g., anhydrous ammonia spills). This is a pertinent point because it illustrates the fact that a decision to evacuate is made solely on the basis of a hazard which exists at the particular time or has a high probability of developing within a relatively short time. Once this has been established, the course of action is the same, irrespective of the type of agent involved.

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No comments from Pennsylvania were received.
No comments from Rhode Island were received.

Oregon

It appears that present Oregon laws, rules, and regulations relating to nuclear facilities equal or better those proposed in the petition.

South Carolina

We do not feel the methods proposed by the PIRG would be successful in accomplishing the goal of public awareness as to appropriate actions to take in case of a radiological emergency.

Past experience in South Carolina shows a tendency by the public to discard literature of the type proposed without first familiarizing themselves with its contents. Copies of the sections of emergency plans dealing with evacuation and other protective actions should certainly be available in libraries and public document rooms in the area of the facility and copies of these sections should be available upon request.

The idea of at least annual drills at each nuclear facility is endorsed, but we question the desirability and feasibility of involving the public on such a large scale as these drills. Previous experiences indicate a reluctance on the part of the public to evacuate homes unless it is absolutely necessary, and even then some people refuse to leave.

The Governor has the authority to compel evacuation in case of an emergency, but does not have such authority for a drill. A plant operator certainly could not order an evacuation.

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No comments from South Dakota were received.
No comments from Tennessee were received.

Even if the public were willing to participate in such evacuation drills, numerous serious problems could result. It is unrealistic to say that such an evacuation could take place "without unreasonable inconveniences to the normal operations in the area of the plant."

There is also a question of liability.

We do not feel that this increased probability of injury and death is justified in light of the past safety record in the nuclear industry. The actual public evacuation drill is not necessary to achieve the goal to protect the public.

Texas

Our considerable experience in disaster planning and operations leads us to the conclusion that the suggested rules in the PIRG petition are unnecessarily restrictive and are not in the best interest of the people of Texas. Nuclear power plants present no more danger to the general public than many other commonly accepted hazards in Texas, such as hurricanes, tornadoes, and transportation accidents. We feel that adoption of the proposed rules would prompt an exaggerated public opinion of reactor-related risks. Also, implementation of the activities prescribed by the proposed rules would create unnecessary work and expenditures for state and local agencies. The public affected by annual exercises would be unnecessarily inconvenienced.

I am therefore opposed to the adoption of the proposed rules.

ENCL B

No comments from Utah were received.
No comments from Vermont were received.

Virginia

With regard to the licensee distributing instructions, etc., the 40-mile radius is questionable. Information should be distributed through the states and local governments, not by the licensee. The nature of the hazard is a matter of disagreement among nuclear scientists and engineers and concerned citizens groups; and there is a tendency on the part of citizens to challenge the credibility of the licensees in this respect. The safety and welfare of the public is a government responsibility; and the Federal agencies should provide state and local governments clear statements of hazards and protective action for dissemination.

With regard to actual public evacuation drills, the licensee has no authority beyond its site boundary. The public should be made aware of local government evacuation plans and it is agreed that responsible

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government agencies, volunteer organizations, and licensees within the state conduct an evacuation exercise annually, but without actual evacuation of the public.

An actual evacuation drill would not be acceptable to the public. It would totally disrupt their scheduled activities and cost them money. It would also disrupt traffic. The proposed sector to be evacuated is unrealistic since the sector in an actual emergency would not in most cases correspond to the 7-degree sector selected for the drill.

There is no need for more definitive guidance from the responsible Federal agencies in this regard.

Washington

To require a private entity (utility) to conduct a mass evacuation involving such a large segment of the public before, during, or after the licensing process is not comprehensible, and no private or public agency has legal basis to force the public to participate. In such a practice evacuation there would be undue exposure to accidents, injuries, loss of life, and damage to property. There could also be a loss of income to individuals and economic effects.

Are the proposed changes really effective and do they constitute a significant improvement?

Dissemination of the considerable quantities of literature to the populace within a 40-mile radius (which we believe to be excessive) would be of

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short-term value.

If one evacuation exercise included only a 7-degree sector, each person would be involved once in every 50 years. Such an exercise would be meaningless even if the sector were chosen on the basis of prevalent wind conditions.

There are current requirements for testing emergency plans frequently which are meaningful and valuable.

Implementation of the proposed procedures, plus the added costs, would complicate the power plant siting process and add further delays to the already complex and arduous siting process. These delays are not justified when they contribute little or nothing to the enhancement of public safety.

West Virginia

It has been concluded that the NRC should not amend 10 CFR Part 50 as has been proposed.

Wisconsin

Information should be and has been distributed by utilities to government authorities responsible for emergency planning and implementation. Specific information including instructions to the general public is generally the responsibility of local and state government.

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With regard to evacuation drills, the rigors of such exercises seem difficult to justify in light of known risks arising from automobile travel alone which would be the primary mode of transport in an evacuation. For that sector of the population residing in nursing homes and confined to hospitals the risks would be detrimental to their health. No such drills have ever been held for other possible hazards, natural or man-made.

The petition in its present form should be denied.

Puerto Rico

It is not clear as to the qualifications of the petitioners, although the petitioners disclaims "any real experimental knowledge regarding the complexity of a nuclear evacuation". We are willing to listen to the advice of recognized experts in the field and combine it with our own knowledge and experience. From this standpoint we do not think the petitioners have shown a need or a desirability for the particular requested changes in the regulations.

If we were to have such detailed evacuations as proposed, one should argue that the same requirements might apply to all sorts of chemical and petroleum facilities, as well as areas subject to natural disasters and certainly the ultimate hazard of nuclear attack. It would appear that the efforts of the petitioners would be better devoted to supporting improvements in general emergency preparedness rather than concentrating on the particular subject of nuclear power plants.

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It does not appear to us at this stage that actual full-scale evacuation exercises are justified, but lesser measures should certainly be practiced and known to those who may be involved, as is true of any potential hazard. Evacuation may not even be the best countermeasure in most cases, but when required it may be feasible.

We do not endorse amending the regulation as proposed in the petition.

Power Authority of the State of New York

The Power Authority urges that the petition be denied on the grounds that subject matter is not suitable for rulemaking, and that the proposed amendment to the rules is impracticable and completely without merit.

Emergency plans including evacuation plans must be devised separately for individual plant sites. An appropriate plan depends on the geography of the site, the population distribution, transportation and land use patterns of the surrounding area and many other factors which are site-related. It would be a remarkable coincidence if an evacuation plan for any one site should turn out to be suitable for any other.

Neither rules with respect to dissemination of information to the public nor rules with respect to drills can be standardized on a nationwide basis any more than other aspects of an emergency plan can be standardized.

The ultimate responsibility for evacuation, in the very unlikely event that that should turn out to be necessary, rests with local and state officials whose powers and responsibilities depend on local and state law. The

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jurisdiction of the Commission either to order such officials to carry out mock evacuations or to compel their attendance at generic "rule-making" hearings is extremely doubtful. Such hearings could not possibly be productive.

PIRG's specific proposal for "drills" is absurd. The "drill" would disrupt the lives of hundreds of thousands of people. The governmental expense and economic loss entailed would amount to millions of dollars for each drill.

Additional reasons why the petition should be denied are set forth in the comments of LeBoeuf, Lamb, Leiby & MacRae, special counsel to the Authority, and in the response of the Atomic Industrial Forum, of which the Authority is a member, with both of which we concur.

ENCL B

Mr. L. J. Sirico, Jr.
Mr. M. H. Rogol
Public Interest Research Group
1832 M Street, N.W.
Washington, D.C. 20036

Dear Sirs:

This letter is in response to the petition for rulemaking submitted by you on behalf of the Public Interest Research Group, et al., dated August 6, 1975. The petition sought the promulgation of a rule requiring nuclear facility licensees and license applicants to instruct citizens in public evacuation procedures in case of a major nuclear incident and to test public evacuation plans in realistic drills.

You were notified of receipt of the petition and of the notice of petition and request for comments in the Federal Register, and subsequently of the specific request for comments from the governors of the various States and Puerto Rico.

After reviewing the petition, the comments received from the public and comments received from State governmental organizations, its licensing experience and current policies, and other factors, the Commission has denied the petition for rulemaking. The bases for this decision are set forth in the enclosed notice of denial.

Sincerely,

Samuel J. Chilk
Secretary to the Commission

Enclosure:
Federal Register Notice

Enclosure "C"

NUCLEAR REGULATORY COMMISSION

Docket No. PRM-50-14

PUBLIC INTEREST RESEARCH GROUP, ET AL

NOTICE OF DENIAL OF PETITION FOR RULEMAKING

Notice is hereby given that the Nuclear Regulatory Commission has denied a petition for rulemaking submitted to the Commission by letter dated August 6, 1975, by the Public Interest Research Group, et al. A notice of filing of petition, Docket No. PRM-50-14, and request for comments was published in the FEDERAL REGISTER on September 23, 1975.

The petitioners requested that an amendment to Part 50 require licensees to (a) distribute instructions explaining what emergency safety steps the citizen should take in case of a nuclear incident to the public within a radius of at least 40 miles of the facility; (b) disseminate information explaining these plans through educational sources and the public media; (c) conduct an actual public evacuation drill in full conformity with these plans; and submit to the Commission a report demonstrating compliance with the amendment. The requirements requested were to be carried out annually. The petitioners also requested that the Commission issue a new section to Part 50 requiring (a) that the Commission not issue a construction permit or license or amended permit or amended license until the applicant has (1) distributed to the public within a 40-mile radius of the facility sections of its Preliminary Safety Analysis Report or Final Safety Analysis Report which discuss public evacuation plans, (2) disseminated information explaining these plans through

educational sources and public media, and (3) submitted to the Commission a report demonstrating full compliance with the above requirements; and (b) that the Commission not issue a license or amended license until the applicant has (1) conducted an actual public evacuation drill in conformity with the applicant's plans for coping with emergencies affecting the public, and (2) submitted to the Commission a report demonstrating full compliance with this requirement. This section would also require that where a hearing is held, the applicant must comply with these regulations at least 50 days prior to the hearing.

Also, the petitioners requested that the Commission amend Part 50 to require that Final Safety Analysis Reports must include detailed emergency plans and implementation procedures.

SUMMARY OF COMMENTS

As of January 6, 1976, the NRC received 114 written comments or suggestions relating to the petition for rulemaking filed by the Public Interest Research Group, et al. Copies of all the letters received concerning this petition are on file in the NRC Public Document Room. Thirty-eight letters were received from private citizens with an additional sixty-six signatures (in petition form) requesting that NRC revise its regulations in accordance with the PIRG petition for rulemaking. Ten letters were received which requested that NRC deny the petition; eight of these were from utilities and two from law firms representing nine utilities.

Because of the nature of the petition and the obvious role that local and State governments must play in the implementation of any emergency plan, the Commission in April 1976 requested comments from the governors of the various States and Puerto Rico. The respondents included most of the States and Puerto Rico. The question of whether State and local governments have the authority to compel citizens to evacuate in a practice drill was raised by several of the responding States. The need for emergency plans and testing of plans by critical personnel, but not actual participation of the public, was thoroughly recognized. In addition, it was pointed out by the States that there existed practical problems such as costs and liability primarily associated with evacuation drills. However, approximately 40% of the responding states did favor, in one form or other, the dissemination of emergency preparedness information.

COMMISSION ANALYSIS

The Commission has analyzed the petition, comments of petitioners, public comments received, and comments of the various States and Puerto Rico, as well as its licensing experience, current policies, the current experience with regard to emergency situations involving nuclear power plants, and other factors. The rationale for the conclusion reached by the Commission follows.

The criteria which the NRC has applied in evaluating the PIRG petition are: (a) whether PIRG contentions are correct in that existing regulatory requirements in the emergency preparedness area are insufficient to protect the public health and safety, and (b) whether incorporating the

elements of the PIRG petition for rulemaking would improve the protection of the public health and safety.

In evaluating criterion (a), the NRC recognizes that emergencies can arise in the operation of nuclear power plants, and has, therefore, taken steps to assure the establishment of an acceptable state of preparedness to cope with emergency situations.

In 1970, the Atomic Energy Commission codified its requirements for plans to cope with emergencies in 10 CFR Part 50. These requirements, represent current NRC policy with regard to emergency planning that must be undertaken prior to issuance of a nuclear power plant permit or license. Pursuant to 50.34(a), at the construction permit phase, elements of preliminary planning are required as set forth in Appendix E (II) to Part 50, while at the operating license stage, pursuant to 50.34(b), the elements of substantive planning are required as set forth also in Appendix E (III, IV) to Part 50.* It is important to note that while many of the planning elements identified in Appendix E are directed specifically to radiation emergencies, the scope of Appendix E has generally been understood as having applicability not only to situations which are, but also those which have the potential for becoming radiation emergencies, e.g., fires, floods, hurricanes and the like.

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*The scope and extent of protective measures, e.g., evacuation of persons or instructions to take shelter on a timely basis, is explicitly identified in § 100.3(b) as one of the factors to be considered in determining the Low Population Zone for siting purposes in 10 CFR Part 100.

One of the elements of Appendix E (IV) identifies "...agreements reached with local, State, and Federal officials and agencies for the early warning of the public and for public evacuation or other protective measures should such ... become necessary or desirable ...." In the licensing process, the NRC requires that evidence of such agreements be submitted in conjunction with the proposed emergency plans. These understandings are further verified by NRC inspection personnel, by contacts with the agencies involved, prior to the actual issuance of a license and periodically thereafter. The nature of such agreements varies somewhat from case to case since the NRC has not established a particular format for them. Frequently they have taken the form of a letter agreement from an official of the agency which take cognizance of that agency's responsibility to respond upon notification, by the facility operator, of a need or recommendation to take protective action on behalf of the public within the agency's jurisdiction. In some instances, more formal agreements exist which set forth commitments on the part of both the agency and the facility operator. Evidence of such agreements also may appear in the form of State and local radiological emergency response plans which take specific cognizance of emergencies which may arise at a particular facility. In these cases, the NRC examines the interface between facility plans and agency plans to assure adequate coordination.

In evaluating criterion (b) one must look at the merits of the individual elements of the petition for rulemaking. In doing this the Commission notes that EPA has analyzed the inherent dangers involved with public

evacuation and has provided the following information. There are 2.4×10^{-8} deaths per person-mile and 9×10^{-7} injuries per person-mile for transportation by automobile. If an evacuation (actual or drill) required an evacuee to drive 20 miles, the risks would be approximately 5×10^{-7} of death and 2×10^{-5} of injury per evacuation. Thus there are potential costs in terms of deaths and injuries to the public associated with evacuation drills.

To put these costs in perspective the Commission compared them with risks estimated in the Reactor Safety Study. This Study (WASH-1400) estimated that the risk to an individual located about 10 miles from the reactor site as a result of a reactor accident is about 5×10^{-11} per reactor-year of early death and 2×10^{-9} per reactor-year of latent cancer death. Although the equivalent probabilities would be higher for individuals at the site boundary, there are few people so located and the stated numerical values are more representative for potential evacuees. Therefore, if one considers a 40-year period and assumes an evacuation drill each year, the mortality risk from the evacuations is about 200 times greater than the mortality risk from the potential reactor accident.

The petitioners also request that licensees and applicants distribute instructions explaining what emergency safety steps, including directions for public evacuation, the citizen should take in case of a nuclear incident to each household, place of business, public institution, and other establishment within at least a 40 mile radius of the facility.

Presently, NRC's regulations require nuclear facility licensees and license applicants to provide a copy of their emergency preparedness plan

with the Final Safety Analysis Report (FSAR). A copy of the FSAR is kept in the NRC Public Document Room as well as in a location near the site of the nuclear power plant. Both copies are available for public inspection.

Based on experience working with States over the course of years, as well as our assessment of the comments received from the States, we believe that it is essential that the state emergency coordinator have substantial flexibility to deal with the complexity of planning for emergencies and to modify such plans from time to time as needs arise A program for initial dissemination of such plans should be coupled with an adequate followup program to assure that modifications are provided to all persons possessing the initial plan, in order to avoid the simultaneous existence of differing versions of the same plan. Such widespread dissemination of all revisions to the plan to every household, and other establishments, within 40 miles of a facility would be very difficult.

In addition, the specific action to be taken in any instance must be evaluated and based upon the best information available at that time and such actions must be centrally coordinated to assure that they are not mutually counterproductive. For example, the egress patterns selected by the emergency coordinator could become congested if occupants that are not in the downwind sector evacuate and merge with the downwind sector evacuees. Wide dissemination of detailed complex plans could result in increased unnecessary casualties caused by misinterpretation of complex and variable conditions in terms of the nature of the release and effect of meteorological conditions. However, it appears that a number of

States feel that a more limited distribution of general information to persons living close to the facility may be desirable.

For these reasons, the Commission does not consider that it is advisable to provide for mandatory widespread dissemination of emergency plans. Such information should, of course, be reasonably available to those members of the public who desire to know. This is current Commission policy.

A third element that the petitioners request is that licensees and applicants disseminate information explaining emergency plans through educational sources and the public media, including both printed and electronic media.

The Commission considers that all emergency actions depend upon the nature of the nuclear accident and the resulting threat, the prevailing weather and environmental conditions, and the location of the individual relative to the power plant. In some circumstances, it would be best for the individual to remain in his home rather than to leave. Information explaining the emergency plan would be so general as to be subject to misinterpretation and would be of little help; or, if written to cover the wide range of possibilities, would be too complex for the public to understand or follow in an emergency. A simple instruction directing public evacuation by pre-set routes in the event of any threatening nuclear accident could be in error in particular circumstances.

Lastly, the petitioners also requested that NRC require licensees to submit for review the details of their Emergency Plans and the implementation procedures. The Commission has not found it necessary to have detailed implementation information submitted for review along with the emergency plans provided in the FSAR. These details are kept onsite where various aspects, such as specific phone numbers and personnel assignments, etc., can be promptly modified to reflect minor day to day changes. This detail can be provided to the Commission if there should be some serious question as to whether the applicant can actually carry out the plans set forth in the FSAR.

The implementation procedures maintained onsite are reviewed customarily by the Office of Inspection & Enforcement to determine whether they are consistent with the plans set forth in the FSAR. Prior to issuing an operating license and annually thereafter for the life of the plant, the NRC inspection program looks into the adequacy of the details of the Emergency Plan and the implementing procedures. Assurance is provided through these inspections that the commitments made in the Emergency Plan are in fact met, and reasonable assurance is obtained that appropriate measures can and will be taken in the event of an emergency. The inspection program includes verification that implementing procedures have been developed, and representative procedures are reviewed by NRC personnel at this time. Furthermore, the NRC inspection program verifies by observation and review of records that the implementing procedures are tested and evaluated for adequacy when actually used.

The Commission also notes that the following actions have been taken to facilitate improvements in the overall area of emergency preparedness. The NRC participates with other Federal agencies in providing guidance and assistance in radiological emergency response planning to State and local agencies. As a part of its agency role in this interagency effort, the NRC has a review and concurrence function with respect to radiological response plans developed by State and local governments. NRC has issued a document titled "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Plans in Support of Fixed Nuclear Facilities," NUREG-75/111, which serves the purpose of guidance to State and local planners. Likewise, NRC has issued Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants" which provides staff guidance in developing the emergency plans required as part of the Final Safety Analysis Report for nuclear power plants.

Under current practice applicants perform a test or drill before they are granted an operating license. If the drill reflects an unsatisfactory state of planning and preparedness, issuance of the operating license may be delayed. Likewise, each licensee is required to establish provisions for testing, by periodic drills, of radiation emergency plans to assure that employees of the licensee are familiar with their specific duties, and provisions for participation in the drills by other persons whose assistance may be needed in the event of a radiation emergency. In addition, the Federal Interagency Emergency Preparedness Program includes visits, at the invitation of a State, by a Federal Interagency Field

- Assistance Cadre headed by NRC personnel to observe State and local government field exercises and to provide comments to the State as a result of such observations.

In view of the above, it is concluded that the Commission's present regulations provide for adequate emergency planning and that the proposed rule would not further ensure the health and safety of the public, and in fact may increase the probability of injuries and loss of life, in addition to causing other inconveniences and costs not commensurate with the benefit. The Commission also believes that its ongoing efforts in the emergency preparedness area will provide a continuing level of emergency planning sufficient for the protection of the public health and safety.

The Nuclear Regulatory Commission, therefore, denies the petition for rulemaking.

Copies of the petition for rulemaking and the Commission's letter of denial are available for public inspection in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C.

Dated at _____this ___day of _____, 197_.

For the Nuclear Regulatory Commission.

_____

Secretary of the Commission

INDIVIDUAL ANALYSIS OF THE SPECIFIC ELEMENTS WITHIN THE
PETITION FOR RULEMAKING - ELEMENT #1, CHANGE 10 CFR PART 50
TO REQUIRE LICENSEES AND APPLICANTS TO PROVIDE FOR
WIDE DISSEMINATION OF EMERGENCY PLANS

Discussion

The Public Interest Research Group (PIRG) has filed with the Commission a petition for rulemaking which, in addition to other items, has requested that 10 CFR Part 50 be amended to read:

"(a) The Commission will not issue a construction permit or license or amended construction permit or amended license, provisional or otherwise, until the applicant has

(1) distributed to each household, place of business, public institution, and other establishment within at least a 40-mile radius of the facility or proposed facility those sections of its

(a) Preliminary Safety Analysis Report required by Section 50.34(a)(10) or the equivalent report information files pursuant to Section 50.90, in the case of a construction permit or amended construction permit or

(b) Final Safety Analysis Report required by Section 50.34(b)(6)(v) or the equivalent report information filed pursuant to Section 50.90, in the case of a license or amended license

which discusses public evacuation plans."

Likewise, to amend another area of 10 CFR Part 50 to read:

"(a) During each calendar year, beginning with 1976, each operating facility's licensee shall:

(1) distribute instructions explaining what emergency safety steps, including directions for public evacuation, the citizen should take in case of a nuclear incident to each household, place of business, public institution and other establishment within at least a 40-mile radius of the facility. The instructions shall be based upon the emergency plans each licensee has filed with this Commission pursuant to Section 50.43[.34](b)(6)(v) and Section 50.90, as updated, and shall be submitted to this Commission prior to distribution for approval of their readability and sufficiency of explanation."

Existing NRC regulations require that the Preliminary Safety Analysis Report contains sufficient information to assure the compatibility of proposed emergency plans with facility design features, site layout, and site location. This analysis is performed with respect to such considerations as access routes, surrounding population distributions, and land use and in essence contains very little information on emergency plans.

NRC's regulations also require nuclear facility licensees and license applicants to provide a copy of their emergency preparedness plan with the Final Safety Analysis Report (FSAR). A copy of the FSAR is kept in the NRC Public Document Room as well as in a location near the site of the nuclear power plant. Both copies are available for public inspection.

Alternative 1. Continue the present policy of requiring licensees and license applicants to disseminate the emergency plans through the NRC on a limited basis.

Pro: (1) The information is available to the public because the NRC provides a copy of a licensee's and an applicant's PSAR and FSAR which contain emergency information and emergency plans in the Public Document Room as well as in a local library in the area of the power plant.

(2) No added burden and effort for licensees, State and local agencies.

(3) No added burden and effort for the NRC staff.

Con: (1) It would not provide a full public dissemination of emergency plans contained in the PSAR and FSAR to each household, place of business and public institution within at least a 40-mile radius of the power plant.

Alternative 2. Require licensees and license applicants to make necessary arrangements (possibly financial, technical, etc.) with the appropriate State agencies thereby enabling a State agency to prepare and distribute emergency information and plans.

Pro: (1) This would provide full public dissemination of emergency plans but not necessarily to each household, place of business, and public institution within at least a 40-mile radius of the power plant.

Con: (1) The method of dissemination of emergency plans for radiological emergencies would be inconsistent with the method utilized for dissemination of emergency plans for nonradiological emergencies.

(2) Significant additional cost and effort for the State and local agencies.

(3) Significant additional effort and cost for the licensees.

(4) Additional burden and effort for the NRC staff in concurring with the emergency information that is distributed.

Alternative 3. Require licensees and license applicants to distribute emergency instructions and plans to each household, place of business, public institution and other establishments within at least a 40-mile radius of the facility.

Pro: (1) This certainly would provide full public dissemination of emergency plans.

Con: (1) The responsibility for developing and promulgating emergency information and plans outside of the plant site is not the responsibility of the licensee but is the responsibility of State and appropriate local

governments. State and local governments do have and do exercise the legitimate police powers involved with emergency plans and procedures.

(2) Significant additional cost and effort for the State and local agencies. Furthermore, many States are not prepared, at this time, to administer this added effort.

(3) The method of dissemination of emergency plans for radiological emergencies would be inconsistent with the method utilized for dissemination of emergency plans for nonradiological emergencies.

INDIVIDUAL ANALYSIS OF THE SPECIFIC ELEMENTS WITHIN THE
PETITION FOR RULEMAKING - ELEMENT #2, CHANGE 10 CFR PART 50
TO REQUIRE LICENSEES AND APPLICANTS TO PROVIDE FOR
WIDE DISSEMINATION OF INFORMATION EXPLAINING THE EMERGENCY PLANS

Discussion

The Public Interest Research Group (PIRG) has filed with the Commission a petition for rulemaking which, in addition to other items, has requested that 10 CFR Part 50 be amended to read:

"(a) During each calendar year, beginning with 1976, each operating facility's licensee shall:

ii. disseminate information explaining these [emergency] plans through educational sources and the public media, including both printed and electronic media"

Likewise to amend another area of 10 CFR Part 50 to read:

"(a) The Commission will not issue a construction permit or license or amended construction permit or amended license, provisional or otherwise, until the applicant has

ii. disseminated information explaining these [emergency] plans through educational sources and the public media, including both printed and electronic media."

Existing NRC regulations regarding emergency planning require that nuclear facility licensees develop emergency plans pertaining to the nuclear facility itself. Among other things, emergency plans would include an evacuation plan for onsite personnel in the event of an emergency requiring this action. Emergency plans developed by the licensees are publicly available as a part of the "Safety Analysis Report" required by the Commission.

Likewise, NRC Regulations require that a supportive interface exist between the licensed nuclear facility and Federal, State, and local agencies who may be called upon to respond to an emergency situation. This includes procedures and agreements reached with local, State, and Federal agencies for the early warning of the public and for the subsequent use of protective measures.

Currently, NRC guidance (in Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants") provides for licensees and applicants "...to make available on request to occupants in the low population zone information concerning how the emergency plans provide for notification to them and how they can expect to be advised what to do..." in the unlikely event of an emergency.

It is noted that all emergency actions will depend upon the nature of the nuclear accident and the resulting threat, the prevailing weather and environmental conditions, and the location of the individual relative to the power plant. In some circumstances it would be best for the individual to remain in his home rather than to leave. Information explaining the emergency plan would be so general as to be subject to misinterpretation

and would be of little help; or, if written to cover the wide range of possibilities, would be too complex for the public to understand or follow in an emergency. A simple instruction directing public evacuation by pre-set routes in the event of any threatening nuclear accident could be in error in particular circumstances.

Alternative 1. Continue the present policy of not requiring licensees and applicants to widely disseminate information explaining the emergency plans through educational sources and the public media.

Pro: (1) There is no evidence that dissemination of information explaining emergency plans would improve the protection of the public health and safety.

(2) The information explaining the emergency plans might be so general as to be of little assistance or could be misinterpreted; on the other hand, the information might be too complex for the public to understand and therefore add confusion.

(3) No added burden and effort for licensees, or State and local agencies.

(4) No added burden and effort for the NRC staff.

Con: (1) This would not provide educational information to the public in the immediate area around a nuclear power plant.

(2) This would not make the public aware of a potential hazard or of the general means by which to avoid such a hazard if an accident occurred.

Alternative 2. Require licensees and applicants to disseminate information explaining the emergency plans through educational sources and the public media including both printed and electronic media.

Pro: (1) This would provide educational information to the public in the immediate area around a nuclear power plant. The information could explain the fundamental elements of the emergency plan.

(2) This could make the public aware of a potential hazard as well as the general means by which to avoid such a hazard if an accident occurs.

Con: (1) The dissemination of emergency information for radiological emergencies would be inconsistent as compared to the dissemination of emergency procedures for nonradiological emergencies.

(2) Additional effort and cost for the licensee.

(3) There is no evidence that dissemination of information explaining emergency plans would improve the protection of the public health and safety.

(4) The information explaining the emergency plan might be so general as to be of little assistance or could be misinterpreted; on the other hand, the information might be too complex for the public to understand and therefore add confusion.

INDIVIDUAL ANALYSIS OF THE SPECIFIC ELEMENTS WITHIN THE PETITION FOR RULEMAKING - ELEMENT #3, CHANGE 10 CFR PART 50 TO REQUIRE A LICENSEE TO CONDUCT AN ACTUAL PUBLIC EVACUATION DRILL ON AN ANNUAL BASIS

Discussion

The Public Interest Research Group (PIRG) has filed with the Commission a petition for rulemaking which, in addition to other items, has requested that 10 CFR Part 50 be amended to read:

"(a) During each calendar year, beginnning with 1976, each operating facility's licensee shall:

iii. conduct, in cooperation with Federal, State, and local officials and agencies, an actual public evacuation drill in full conformity with these plans. The evacuation drill shall include the actual evacuation of the populace from at least a 7 degree sector radiating from the facility for a distance of at least 40 miles.

The sector will be chosen in conjunction with State and local officials and this Commission and shall be representative of other sectors and contain a significant population."

Likewise, to amend another area of 10 CFR Part 50 to read:

"(b) The Commission will not issue a license or amended license, provisional or otherwise, until the applicant has

i. conducted, in cooperation with Federal, State, and local officials and agencies, an actual public evacuation drill in full conformity with the applicant's plans for coping with emergencies affecting the public formulated pursuant to Section 50.34(b)(6)(v) and Section 50.90. The evacuation drill shall include the actual evacuation of the populace from at least a 7 degree sector radiating from the facility for a distance of at least 10 miles. The sector will be chosen in conjunction with State and local officials and this Commission and shall be representative of other sectors and contain a significant population."

State and local governments are responsible for developing and implementing emergency plans for areas outside the boundaries of a nuclear facility. Since a major nuclear accident may affect both onsite and offsite personnel, coordination is an important feature of both onsite and offsite emergency plans. 10 CFR 50, Section IV.D of Appendix E requires

"procedures for notifying, and agreements reached with local, State, and Federal officials and agencies for the early warning of the public and for public evacuation or other protective measures should such warning, evacuation, or other protective measures become necessary or desirable, including identification of the principal officials, by title and agencies."

Drills to test licensee emergency plans are required by Section IV.I of Appendix E. This section requires that provisions be made for participation in the drills by persons whose assistance may be needed in a radiation emergency, but does not require actual evacuation of the public.

EPA has analyzed the inherent dangers involved with public evacuation and has provided the following information. There are 2.4×10^{-8} deaths per person-mile and 9×10^{-7} injuries per person-mile for transportation by automobile. If an evacuation (actual or drill) required an evacuee to drive 20 miles, the risks would be approximately 5×10^{-7} of death and 2×10^{-5} of injury per evacuation. Thus there are potential costs in terms of deaths and injuries to the public associated with evacuation drills.

To put these costs in perspective the staff compared them with risks estimated in the Reactor Safety Study. This Study (WASH-1400) estimated that the risk to an individual located about 10 miles from the reactor site as a result of a reactor accident is about 5×10^{-11} per reactor-year of early death and 2×10^{-9} per reactor-year of latent cancer death. Although the equivalent probabilities would be higher for individuals at the site boundary, there are few people so located and the stated numerical values are more representative for potential evacuees. Therefore, if one considers a 40-year period and assumes an evacuation drill each year, the mortality risk from the evacuations is about 200 times greater than the mortality risk from the potential reactor accident.

The dollar cost of an evacuation is a combination of: 1) direct costs of moving and caring for people and providing security of the evacuation areas, and 2) indirect costs such as loss of income to individuals and loss of productivity to industries. Direct costs are primarily determined by such factors as the number of evacuees, distances travelled, and length of time of the evacuation. The indirect costs are a function of the economic base of the area such as farming, manufacturing, and commercial. Replies received from State agencies indicate that actual drills would not improve actual evacuations and in fact might be counter productive.

Alternative 1. Continue the present policy of requiring periodic drills to test licensee radiological emergency plans thereby not adding a requirement that applicants and licensees conduct actual public evacuation drills.

Pro: (1) There would be no added probability of death and/or injury to the public.

(2) No added administrative and financial burden and effort for applicants and licensees, State and local agencies, and the general public.

(3) No added burden and effort for the NRC staff.

Con: (1) Evacuation procedures of the public would not be tested until needed.

Alternative 2. Require licensees and applicants to conduct annual public evacuation drills with a small percentage (volunteer group) of the public.

Pro: (1) This would test evacuation procedures to a limited extent, and yet not endanger the public.

(2) This would be cheaper and safer for the public than an actual public evacuation drill.

Con: (1) There would be added danger of death and/or injury, as well as cost, for those participating in the drill.

(2) Undue emphasis would be placed on evacuation as a means of mitigating accidents as compared to other protective actions.

(3) There would be additional burden and effort to State and local agencies. Many States are not prepared, at this time, to administer this added effort.

(4) Actual evacuation would, in reality, still not be fully tested.

(5) There would be additional burden and effort for applicants and licensees.

(6) There would be additional burden and effort to the NRC staff in approving the content of the partial evacuation plan.

Alternative 3. To require licensees and applicants to conduct in cooperation with Federal, State, and local officials and agencies an annual actual public evacuation drill as requested by the petitioners.

Pro: (1) Public evacuation plans would be fully tested and certified to be reasonably efficient, practical and feasible, thereby reducing doubts as to whether the public could be evacuated in the case of a nuclear accident.

Con: (1) The licensee does not have the legitimate police powers involved with evacuation plans and procedures in areas of the public domain which may be affected by natural or man-made disasters or emergencies.

(2) There would be added danger of death and/or injury to the public involved in the evacuation drill.

(3) Undue emphasis would be placed on evacuation as a means of mitigating accidents as compared to other protective actions.

(4) There would be substantial additional burden and effort to State and local agencies.

(5) There would be substantial additional burden and effort for applicants and licensees.

(6) There would be substantial evacuation costs to the public, licensee, and State and local agencies.

(7) There would be substantial additional burden and effort to the NRC staff in approving the content of the evacuation plans.

INDIVIDUAL ANALYSIS OF THE SPECIFIC ELEMENTS WITHIN THE PETITION FOR RULEMAKING - ELEMENT #4, CHANGE 10 CFR PART 50 APPENDIX E TO REQUIRE THAT DETAILS OF EMERGENCY PLANS AND THEIR IMPLEMENTATION PROCEDURES BE SUBMITTED FOR NRC REVIEW

Discussion

The Public Interest Research Group (PIRG) has filed with the Commission a petition for rulemaking, which, in addition to other items, has requested that Appendix E to 10 CFR Part 50 be amended to read:

> "The Final Safety Analysis Report shall contain plans for coping with emergencies. The details of these plans and the details of their implementation SHALL be included, AND the plans submitted must include a description of the elements set out in Section IV to an extent sufficient to demonstrate that the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property."

Whereas our existing regulations (Appendix E to 10 CFR Part 50) require that "The Final Safety Analysis Report shall contain plans for coping with emergencies. The details of these plans and the details of their implementation need not be included, but the plans submitted must include a description of the elements set out in section IV to an extent

sufficient to demonstrate that the plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property."

The staff has not found it necessary to have detailed implementation information submitted for review along with the emergency plans provided in the FSAR. These details are kept onsite where various aspects, such as specific phone number and personnel assignments, etc., can be promptly modified to reflect day to day changes. This detail can be provided to the staff (or in a hearing, if relevant) if there should be some serious question as to whether the applicant can actually carry out the plans set forth in the FSAR.

The implementation procedures maintained onsite are reviewed customarily by IE to determine whether they are consistent with the plans set forth in the FSAR. Prior to issuing an operating license and annually thereafter for the life of the plant, the NRC inspection program looks into the adequacy of the details of the Emergency Plan and the implementing procedures. Assurance is provided through these inspections that the commitments made in the Emergency Plan are in fact met, and reasonable assurance is obtained that appropriate measures can and will be taken in the event of an emergency. The inspection program includes verification that implementing procedures have been developed, and representative procedures are reviewed by NRC personnel at this time. Furthermore, the NRC inspection program verifies by observation and review of records that the implementing procedures are tested and evaluated for adequacy when

actually used. The staff concludes that Regulatory Guide 1.101, Annex A adequately defines the scope and extent of detail needed to determine whether there is reasonable assurance that the facility can be operated without endangering public health and safety.

Alternative 1. Continue the present policy of not requiring licensees (in Appendix E to 10 CFR Part 50) to submit to NRC for licensing review the details of their plans for coping with emergencies.

Pro: (1) Unnecessary details such as phone numbers and personnel assignments can continue to be promptly modified.

(2) No added burden and effort for the NRC staff.

(3) No added burden and effort for licensees, State and local agencies.

(4) The Office of Inspection and Enforcement will continue to review the licensee's detailed implementation procedures.

Con: (1) It does not provide the NRC licensing staff an opportunity to fully review a licensee's detailed implementation procedures.

Alternative 2. To require licensees (in Appendix E to 10 CFR Part 50) to submit to NRC detailed emergency plans and implementation procedures for coping with emergencies.

Pro: (1) This alternative would provide the detailed emergency plans and implementation procedures to the NRC for licensing review.

(2) Make emergency implementation procedures readily available to the public.

Con: (1) An added burden and effort for licensees.

(2) NRC would than be performing a somewhat redundant review since IE already reviews a licensee's implementation procedures.

(3) A substantial added burden and effort for the NRC licensing staff.

SUMMARY OF ONGOING NRC EFFORTS IN
THE EMERGENCY PREPAREDNESS AREA

There is no question that adequate emergency preparedness is essential in providing assurance that the operation of a nuclear power plant poses no undue risk to the public health and safety. This enclosure outlines the actions that have been taken to facilitate improvements in the overall area of emergency preparedness.

1. Background:

On December 24, 1975, the Federal Preparedness Agency, General Services Administration, published a Federal Register Notice of Interagency Responsibilities, "Radiological Incident Emergency Response Planning: Fixed Facilities and Transportation." Under the provisions of this notice, the Nuclear Regulatory Commission was assigned to be "lead agency" for radiological incident emergency response planning, training and assistance activities among Federal agencies, in providing guidance to these other Federal agencies and in coordinating Federal guidance and assistance to State and local governments. Eight agencies listed in the notice have all been assigned specific responsibilities in the program.

2. Current Federal Activities to Assist States and Local Governments:

Federal Authority

It should be recognized that neither the Nuclear Regulatory Commission nor any other Federal agency has the statutory authority to require radiological emergency response plans of the States and local governments. The only "authority" with respect to these plans results from the aforementioned Federal Register Notice.

NRC does, however, exercise a statutory role with respect to the licensing of nuclear power plants. As a part of this process, all applicants for an operating license must develop a facility emergency plan. There are certain requirements for the content of this plan, and these must be met before a license is granted. These requirements are contained in NRC regulations.

One of the major requirements is the need to develop procedures and agreements with State and local agencies for the early warning of the public and for public evacuation or other protective measures in the event of a radiological emergency. In essence, the NRC regulations require that a supportive interface exist between the nuclear facility and State and local government agencies who may be called upon to respond to an emergency situation. But the regulations stop short of requiring that a plan be developed by the State and local governments.

Federal Interagency Effort to Assist States

Notwithstanding the fact that statutory authority does not exist to require these plans of States and local governments, the NRC as "lead agency" and the other involved Federal agencies have taken a cajolative approach toward solving this problem.

Training

A formal training program designed to teach State and local government personnel how to develop or improve their Radiological Emergency Response Plans has been established by the NRC and other Federal agencies at the Defense Civil Preparedness Agency Staff College at Battle Creek, Michigan. Over 300 State and local government personnel have attended this one-week course since its inception in March of 1975. Additionally, NRC and other Federal agencies are developing a series of Radiological Emergency Response Operations Courses for State and local government personnel. A number of other training activities are also in the making. Interagency funding of these programs is provided.

Guidance and Review

NRC has published formal guidance for the development and evaluation of State and local government radiological emergency response plans. Other Federal agencies have developed and are developing companion

technical guidance in the areas of radiological emergency instrumentation, protective action guides, protective measures and other technical matters. Additionally, NRC exercises a "review and concurrence" function with respect to these State and local government radiological emergency response plans.

Field Assistance Effort

The NRC chairs the "Federal Interagency Field Assistance Cadre" which provides field assistance to State and local governments in developing and improving their Radiological Emergency Response Plans. The "Cadre" is composed of a group of Headquarters or Regional Federal personnel from the involved agencies. The "Cadre," at the request of a State, also observes field emergency response exercises in support of nuclear facilities conducted by State and local governments. The "Cadre" provides evaluations of these exercises to the State and local governments. The evaluations are used as a basis for improving the emergency plans. Usually the involved nuclear facility and State and local governments will conduct an integrated exercise involving personnel and resources from both the facility and State and local governments.

Interagency Coordinating Committee Activities

To coordinate the various activities of the Federal agencies that have been assigned responsibilities under the provisions of the

aforementioned "Notice," a "Federal Interagency Central Coordinating Committee on Radiological Emergency Planning" has been established. This committee is chaired by the NRC. Other agencies represented on the committee are the Defense Civil Preparedness Agency, the Department of Health, Education and Welfare (Bureau of Radiological Health, Food and Drug Administration), the Environmental Protection Agency, the Department of Transportation, the Federal Disaster Assistance Administration, the Energy Research and Development Administration and the Federal Preparedness Agency.

Two Task Forces have been established by the committee. The "Federal Interagency Task Force on Training and Exercises," chaired by the Defense Civil Preparedness Agency, has developed the established training program in radiological Emergency Response Planning and is developing the training program for Radiological Emergency Response Operations for State and local government personnel. The "Federal Interagency Task Force on (Offsite) Emergency Instrumentation for Nuclear Incidents--Fixed Facilities," chaired by the Environmental Protection Agency, is developing guidance needed to establish emergency offsite radiation detection and measurement systems and to select the appropriate instrumentation for these systems for use by the States and local governments.

3. Future Tasks and Improvement of the Existing Program

The General Accounting Office has prepared a report entitled "Stronger Federal Assistance to States Needed for Radiation Emergency Response Planning." The report was published on March 18, 1976. The principal recommendations are for the NRC to provide a detailed periodic report to the Congress on the status of the Federal assistance program and to provide State liaison representatives at the five NRC regional offices to directly assist the States. The NRC has agreed to implement the first recommendation and is evaluating the placing of representatives of the Office of State Programs in the NRC Regional Offices. For the future, the following tasks are outlined to extend and improve the existing program in radiological emergency planning and preparedness with the States and their local governments.

a. Development of standard drill and exercise scenarios for testing and evaluating radiological emergency response plans.

b. Development of an expanded Federal Interagency radiological emergency preparedness training program (operationally oriented) for State and local government personnel.

c. Exploration of a system to assist in the qualitative and quantitative evaluation of State and local government radiological emergency response plans.

d. Expand the field assistance effort to directly assist States and their local governments in the actual development or improvement of their Radiological Emergency Response Plans.

e. Complete the development of technical guidance such as protective action guides (EPA is developing protective action guides).

f. Expand the field assistance effort (Federal Interagency Field Assistance Cadre) to allow for an annual Federal critique of a radiological emergency response exercise in each State with an operating nuclear facility.

g. Development of Radiological Emergency Instrumentation Guidance for States and local governments.

h. Development of guidance for developing and improving radiological emergency response plans for transportation accidents involving radioactive materials for States and local governments.

4. NRC Licensing Requirements

NRC requires the testing of licensee emergency plans as set forth in 10 CFR Part 50, Appendix E at Section IV(I). Participation in drills is required of members of the licensee's emergency organization, and participation by members of other emergency organizations

for which there is a planning interface is also encouraged. Drills are generally monitored by NRC inspection personnel.

The scope of the NRC inspection of licensee test exercises or drills include evaluation of the following:

1. Determination of the extent of interfacing between State and local agencies that are tested by routine drills.
2. Determination that major aspects of the plan are tested by the drills.
3. Determination that the types and frequency of drills are as specified in the licensee's emergency plan.
4. Determination that actions and notification are conducted in accordance with written procedures.
5. Determination that the licensee evaluates the performance of personnel and the effectiveness of procedures during drills.
6. Determination that appropriate corrective actions are taken by management to correct deficiencies identified during drills.
7. Determination that the licensee is maintaining a state of preparedness for the protection of employees and the public.

All applicants are required to perform a test or drill before they are granted an operating license. If the drill reflects an unsatisfactory state of planning and preparedness, issuance of the operating license is delayed.

Each licensee of a nuclear power plant operating in the United States has submitted its plans for coping with emergencies to the NRC (or its predecessor, the AEC). Each has been found to comply with the NRC criteria as set forth in 10 CFR Part 50, Appendix E. A continuing NRC inspection program is designed to assure that each licensee maintains an adequate state of emergency preparedness. These emergency preparedness site inspections are conducted on an annual basis and are divided among four major areas: coordination with offsite agencies, written implementing procedures, equipment and facilities, and test exercises or drills.

It has not been uncommon for those inspections to bring certain emergency preparedness program weaknesses to light. In general, however, licensees have been responsive to taking the required corrective actions without the need for enforcement action.

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

APR 4 1977

MEMORANDUM FOR: T. A. Rehm, Assistant to the Executive Director for Operations

FROM: Peter L. Strauss, General Counsel

SUBJECT: PIRG PETITION FOR RULEMAKING TO REQUIRE EVACUATION PLANS AND DRILLS

In response to your memorandum of March 10, 1977, this is to inform you of our concurrence in the staff's proposed response to the subject petition.

The PIRG petition requests that NRC require licensees to formulate detailed evacuation plans and distribute them to persons within a 40 mile radius of any nuclear plant and that annual evacuation drills be conducted. We agree that the petition should be denied on the grounds that the need for such measures has not been demonstrated and that alternative arrangements are adequate. In fact absent a showing that such extraordinary measures are required to protect the public health and safety, we would question the legal authority to require them as a condition to obtaining a license.

Certainly the Commission has broad discretion in imposing conditions on licensees. But conditions imposed must be reasonably related to protection of the public from radiation dangers or environmental impacts. The record compiled by the staff on the effectiveness of evacuation drills, their dangers and costs indicates that, as preventive medicine, they may be more harmful than the threats they would purportedly cure. On the basis of such a record, the Commission would not have legal authority to require evacuation drills.

The present NRC program with respect to emergency preparedness in general, described in Attachment I to the staff paper, requires licensees to develop facility emergency plans and seeks cooperatively to assist state and local governments to handle radiological emergencies. This approach, in our view, appears to be adequate. We note with

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John W. Griggs
634-1398

Encl 1

approval that the staff has agreed to explore the alternative of requiring that licensees disseminate basic emergency preparedness information to persons in proximity to nuclear plants.

Encl. 1

Exhibit 1044

Revision 1
March 1977

U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 1.101
EMERGENCY PLANNING FOR NUCLEAR POWER PLANTS

A. INTRODUCTION

Section 50.34, "Contents of Applications; Technical Information," of 10 CFR Part 50, "Licensing of Production and Utilization Facilities," requires that each application for a license to operate a facility include in a Final Safety Analysis Report (FSAR), along with other information, the applicant's plans for coping with emergencies, including the items specified in Appendix E, "Emergency Plans for Production and Utilization Facilities," to 10 CFR Part 50. Section 100.3 of 10 CFR Part 100, "Reactor Site Criteria," in the definitions of exclusion area and low population zone, establishes additional criteria for plans to cope with emergencies and serious accidents.

Appendix E refers to a document entitled "Guide to the Preparation of Emergency Plans for Production and Utilization Facilities,"[1] which was developed to help applicants establish adequate plans for coping with emergencies. This regulatory guide provides more complete guidance in developing the emergency plans required in the FSAR for nuclear power plants. It describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to the content of emergency plans for nuclear power plants, primarily in the FSAR stage. Additional guidance in the overall area of emergency preparedness is under development and will be forthcoming. The Advisory Committee on Reactor Safeguards has been consulted concerning this guide and has concurred in the regulatory position.

* Lines indicate substantive changes from previous issue.

[1] Copies may be obtained by request to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Attention: Director, Office of Nuclear Reactor Regulation.

B. DISCUSSION

The Commission's interest in emergency planning is focused primarily on situations that may cause or may threaten to cause radiological hazards affecting the health and safety of workers or the public or resulting in damage to property. Emergency plans should be directed toward mitigating the consequences of emergencies and should provide reasonable assurance that appropriate measures can and will be taken to protect health and safety and prevent damage to property in the event of an emergency. Although it is not practicable to develop a completely detailed plan encompassing every conceivable type of emergency situation, advance planning, including the preparation of procedures to implement the planning objectives and periodic testing by drills and exercises, can create a high order of preparedness and ensure an orderly and timely decision-making process at times of stress, as well as the availability of necessary equipment, supplies, and services.

An important element of emergency planning for nuclear power plants is the recognition of a need for active participation in the planning process by those who have emergency response roles. Federal, State, and local agencies, as well as the licensee, have responsibile roles to play in both the planning and the implementation of emergency preparedness procedures. Federal interagency responsibilities for radiological incident emergency response planning were originally set forth by the Federal Office of Emergency Preparedness (now Federal Preparedness Agency, General Services Administration) in a Federal Register Notice (38 FR 2356) published January 24, 1973. The Notice was revised as of December 24, 1975, and published in the Federal

Register (40 FR 248). The current Notice outlines Federal agencies' responsibilities with respect to radiological emergency response planning related to fixed nuclear facilities and to transportation accidents involving radioactive materials. To a large extent, these responsibilities are directed toward a coordination of Federal efforts to provide assistance to State and local governments in their planning. This policy is based on the recognition that State and local governments have the necessary authority to implement protective measures for the public in their jurisdictions. Although Federal agencies can and will respond to emergencies arising from nuclear power plant activities if necessary, such response should be regarded primarily as supportive of, and not as a substitute for, responsible action by licensees and State and local governments. The development of an effective interface between the licensee and the State and local governments in radiological response planning is therefore necessary.[2]

In the preparation of emergency plans for a specific nuclear power plant, the applicant should be guided by the following criteria to clarify the scope, content, and purpose of the document that describes the plans.

1. Although considered a part of the Final Safety Analysis Report, the plans should be prepared and maintained as a separate document.

2. This document should be an expression of the overall concept of operation, which describes the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. It should incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information should be sufficient to ensure coordination among the supporting groups and between them and the licensee.

3. Details that can reasonably be expected to change from time to time, e.g., names and telephone numbers, specific items of equipment and supplies, inventory lists, and step-by-step procedures or checklists that may be altered as a result of experience or test exercises, need not be incorporated into the plans submitted as part of the Final Safety Analysis Report. However, detailed procedures that will ensure timely and effective implementation of various aspects of the emergency plan should be prepared.

[2] NUREG-75/111, "Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities."

C. REGULATORY POSITION

1. Each applicant's emergency plan should include provisions for coping with emergencies, both within the boundary of the plant site and in the environs of the site. Responsibility for planning and implementing all emergency measures within the site boundaries rests with the licensee. Planning and implementation of measures to cope with plant-related emergencies outside the site boundary with particular emphasis on the low population zone should be a coordinated effort involving the licensee and local, State, and Federal agencies having emergency responsibilities. The emergency plan should describe the coordination of the arrangements and agreements between the licensee and these agencies.

2. The scope and content of a nuclear power plant emergency plan should be substantially equivalent to that recommended in Annex A, "Organization and Content of Emergency Plans for Nuclear Power Plants," to this guide. To ensure organizational proficiency in coping with emergencies, provisions should be made for an annual review of the emergency plan and for periodic testing, updating, and improving procedures based on training, drills, exercises, and changes on site or in the environs.

3. Features and candidate subjects that should be considered in the preparation of specific procedures for implementing the emergency plan are described in Annex B, "Implementing Procedures for Emergency Plans," to this guide. Implementing procedures need not be incorporated into the plan and are not required to be submitted as part of the Final Safety Analysis Report to the Commission. These procedures should, however, be available for review by the Office of Inspection and Enforcement during its prelicensing and routine inspections.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this regulatory guide.

This guide reflects current Nuclear Regulatory Commission practice. Therefore, except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein is being and will continue to be used in the evaluation of Final Safety Analysis Reports.

ANNEX A

ORGANIZATION AND CONTENT OF EMERGENCY PLANS FOR NUCLEAR POWER PLANTS

1. DEFINITIONS

This section should provide definitions of any terms that are unique to the power plant under consideration or are given connotations that differ from normally accepted usage. Listed below are some terms used in this guide along with the definitions that should be applied to these terms when they are used in emergency plans.

1.1 Assessment actions—those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

1.2 Corrective actions—those emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem in order to prevent an uncontrolled release of radioactive material or to reduce the magnitude of a release, e.g., shutting down equipment, firefighting, repair and damage control.

1.3 Protective actions—those emergency measures taken after an uncontrolled release of radioactive material has occurred for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

1.4 Population at risk—those persons for whom protective actions are being or would be taken.

1.5 Recovery actions—those actions taken after the emergency to restore the plant as nearly as possible to its preemergency condition.

1.6 Protective action guides (PAG)—projected radiological dose or dose commitment values to individuals in the general population that warrant protective action following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action. The PAG does not include the dose that has unavoidably occurred prior to the assessment.

1.7 Emergency action levels—radiological dose rates; specific contamination levels of airborne, waterborne, or surface-deposited concentrations of radioactive materials; or specific instrument indications (including their rates of change) that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, initiating a notification procedure, or initiating a particular protective action.

2. SCOPE AND APPLICABILITY

This section of the plan should define the unit, plant, station, or area to which the plan is applicable and present a summary of the plan's interrelationships with (1) its implementing procedures; (2) plant operating, radiological control, and industrial security procedures; (3) other emergency plans of the company (e.g., an overall corporate plan); and (4) emergency plans of other participating agencies, particularly the responsible State agency or other governmental authority having radiological emergency planning responsibilities in the immediate offsite area.

3. SUMMARY OF EMERGENCY PLAN

This section should describe the key elements of overall emergency planning logic, incorporating graded emergency classifications of increasing severity and their relationship to the participating status of onsite and offsite personnel and agencies.

4. EMERGENCY CONDITIONS

4.1 Classification System

An emergency plan should characterize several classes of emergency situations. The system of classification employed should consist of mutually exclusive groupings (to avoid ambiguity) but should cover the entire spectrum of possible radiological emergency situations. Succinct verbal rather than numerical or alphabetical classification designations are recommended to give better immediate information to personnel as to the scope and character of the situation. The system of classification should be compatible with the system used by the State and local governments. Each class defined should be associated with a particular set of immediate actions to be taken to cope with the situation. (These actions should be described in Section 6.) This section should note that various classes of accidents require a graded scale of responses. For example, a fire may begin as a small problem but then increase in severity and therefore move up from one class of accident to another.

Specific implementing procedures should be prepared for each identified class of emergency (see Annex B).

An acceptable classification scheme is described in qualitative terms in Sections 4.1.1 through 4.1.5. This part of the emergency plan should describe the criteria for characterizing each class and the criteria or specific emergency action levels to be used to recognize and declare each class or subclass.

4.1.1 Personnel Emergency

This class involves accidents or occurrences onsite in which emergency treatment of one or more individuals is required. It includes those situations that have no potential for escalation to more severe emergency conditions. There may be no effect on the plant, and immediate operator action to alter plant status is not necessarily required. A Personnel Emergency does not activate the entire emergency organization but may activate such teams as the first aid team. It may also require special local services such as ambulance and medical. Emergencies in this class can reasonably be expected to occur during the life of the plant.

Implementing procedures for handling this class of emergency may also be incorporated in the plant's radiation protection procedures and general industrial safety procedures.

Included in this class are injuries that may be complicated by contamination problems or excessive radiation exposures to onsite personnel.

Recognition of this class of emergency is primarily a judgment matter for plant supervisory or management personnel. Its importance as part of the classification scheme rests to some extent on its "negative" information content, viz, that the incident giving rise to the emergency is restricted in its scope of involvement. This section of the plan should designate the classification criteria and should enumerate discrete accident situations that could give rise to the Personnel Emergency class.

4.1.2 Emergency Alert

This class involves specific situations that can be recognized as creating a hazard potential that was previously nonexistent or latent. The situation has not yet caused damage to the plant or harm to personnel and does not necessarily require an immediate change in plant operating status. Inherently, however, this is a situation in which time is available to take precautionary and constructive steps to prevent an accident and to mitigate the consequences should it occur. Emergency Alert situations may be brought on by either manmade or natural phenomena and can reasonably be expected to occur during the life of the plant.

Emergency Alert conditions imply a rapid transition to a state of readiness by plant personnel and possibly by offsite emergency support organizations, the possible cessation of certain routine functions or activities within the plant that are not immediately essential, and possible precautionary actions that a specific situation may require. Examples of situations that should be placed in this class are threats to or breaches of plant security measures such as bomb threats or civil disturbance;[1] severe natural phenomena in the plant environment such as a flood, earthquake, tsunami, hurricane, or tornado; emergency situations such as nearby industrial or forest fires; or release of a toxic or noxious gas in or near the plant. This section of the emergency plan should identify specific candidate situations for Emergency Alerts and the criteria that would be used to recognize and declare this class.

4.1.3 Plant (Unit) Emergency

This class includes physical occurrences within the plant requiring staff emergency organization response. The initial assessment leading to this class should indicate that it is unlikely that an offsite hazard will be created. However, substantial modification of plant operating status is a highly probable corrective action if it has not already taken place by the automatic protective systems. Although this class is associated with a judgment that the emergency situation can be corrected and controlled by the plant staff, notification of corporate headquarters and, in turn, notification of appropriate offsite agencies to alert them as to the nature and extent of the incident should be measures associated with this class. For example, incidents such as fires that may have a significant potential for triggering a release of radioactive materials to the offsite environs should require that the licensee notify the principal responsible State and local agency of the plant status. The licensee would then recommend that the pertinent offsite agencies required to respond to a particular emergency be contacted, apprised of the situation, and directed to assume an alert condition (short of mobilization) until further notice. The offsite agencies would be expected to remain in this condition until either the plant was verified to be in a safe condition or until one of the other emergency classification categories was indicated, possibly requiring further action by offsite emergency response personnel. Protective evacuations or isolations of certain plant areas may be necessary. This class of emergency can also reasonably be expected to occur during the life of a plant.

Examples of situations that might fall into this class are those accidents analyzed in the FSAR as events that are predicted to have insufficient radiological consequences offsite to warrant taking protective measures. Fires and explosions in the plant having no radiological consequences offsite will generally fall into this class, although they may also be treated as separate and distinct emergency classification categories.

[1] Details of measures to cope with security incidents should be described in the facility physical security plan required pursuant to 10 CFR 50.34(c) and should be withheld from public disclosure pursuant to 10 CFR 2.790(d).

Activation levels for declaring Plant Emergencies should be based on (1) the recognition of an immediate need to implement in-plant emergency measures to protect or provide aid to affected persons in the plant or to mitigate the consequences of damages to plant equipment; (2) a positive observation that effluent and other radiological monitors show no indication of a possible Site Emergency; and (3) a positive observation that there is no apparent breach of any fuel cladding, primary system boundary, or containment. This section should describe the alarm conditions or combinations of alarm conditions and the emergency action levels for initiating a Plant Emergency.

4.1.4 Site (Station) Emergency

Emergency situations more severe than plant emergencies are not expected to occur during the life of a plant because of design features and other measures taken to guard against their occurrence. Nevertheless, it is considered necessary and prudent to make provisions for a class that involves an uncontrolled release of radioactive materials into the air, water, or ground to an extent that the initial assessment indicates the advisability of considering protective action offsite. Mobilization and readiness of principal offsite emergency organizations is a recommended measure. Protective actions are likely to include evacuation of plant areas other than control rooms and emergency stations; they should include, for example, the evacuation of construction personnel when additional units are under construction on the same site. Associated assessment actions include provisions for monitoring the environment.

Situations falling into this class include those accidents analyzed in the FSAR that could result in releases of radioactive materials to the environment. The releases would be of sufficient magnitude to warrant consideration of protective measures offsite to minimize potential health hazards due to resulting abnormal levels of airborne or deposited radioactive materials.[4,5]

Emergency action levels for declaring a Site Emergency should be defined (1) in terms of instrument readings or alarms that annunciate in the control room, including indications of the functioning of safety systems and the readout from effluent monitors and (2) alternatively in terms of specific contamination levels in environmental media, e.g., water, soil, vegetation, milk. To avoid unnecessary response to false alarms, the activation criteria for control room monitors should be defined so as to require corroborating evidence from two independent sources that provide input to the control room. The bases and criteria used to specify these emergency action levels should be described and their relationship to protective action guides explained. Licensees should use, and should recommend to local and State authorities for use, protective action guides incorporated in Federal agency guidance.[6]

4.1.5 General Emergency

Hypothetical accidents have been postulated that have the potential for serious radiological consequences to public health and safety. Although the likelihood of occurrence of such an event is extremely low, emergency plans should include a General Emergency class which provides for early warning of the public and prompt initiation of protective actions within the low population zone. Provision should also be made for modification or expansion of protective actions, based on conditions prevailing at the time of an accident, to include areas in which projected doses to individuals would be likely to exceed the upper limits of protective action guides.

Emergency action levels and other criteria for declaring a General Emergency should be specified in terms of information readily available in the control room. Such information should include the status of engineered safeguards. The selection of the levels should be guided solely by postulated conditions within the plant that would be likely to lead to serious releases of radioactive products into the atmosphere. An acceptable planning basis is the most serious design basis accident analyzed for siting purposes.

Coordination with local authorities is an essential element of the planning for this class to ensure the availability of mechanisms for early warning of the public.

4.2 Spectrum of Postulated Accidents

Accident analysis sections of Safety Analysis Reports are primarily concerned with the design responses of a plant to postulated malfunctions or equipment failure and include estimates of the radiological consequences of discrete accidents. By contrast, emergency planning is concerned with individual and organizational responses to the continuum of potential accident situations, including those discrete accidents that have been hypothesized. This section of the emergency plan should describe how the postulated accidents are encompassed within the emergency characterization classes and should provide a summary analysis of their implications for emergency planning. Implications to be considered should include (1) instrumentation capability for prompt detection and continued assessment and (2)

[4] "Background Material for the Development of Radiation Protection Standards," Federal Radiation Council, Report No. 5, July 1964, and Report No. 7, May 1965.

[5] "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" (Chapter 2), U.S. Environmental Protection Agency—EPA-520/1-75-001, September 1975.

[6] See 10 CFR Part 100, footnote 1 to §100.11.

manpower needs in relation to the anticipated sequence and timing of events.

5. ORGANIZATIONAL CONTROL OF EMERGENCIES

Starting with the normal operating organization as a base, this section of the plan should describe the emergency organization that would be activated on the site and its augmentation and extension offsite. Authorities and responsibilities of key individuals and groups should be delineated. The communication links established for notifying, alerting, and mobilizing emergency personnel should be identified.

5.1 Normal Plant Organization

Both day and night shift staffs (crews) should be described, indicating clearly who is in the immediate onsite position of responsibility for the plant or station and his authority and responsibility for declaring an emergency.

5.2 Onsite Emergency Organization

This section should describe the onsite emergency organization of plant staff personnel for both day and night shift situations.

5.2.1 Direction and Coordination

The position title of that person onsite who is designated to take charge of emergency control measures should be clearly identified. A specific line of succession for this authority should also be given. A policy statement describing the scope of authority and responsibility vested in that role by the company (applicant) should be included. Functional responsibilities assigned to this individual should be described.

5.2.2 Plant Staff Emergency Assignments

The plan should specify the organizational groups to which the following additional functional areas of emergency activity are assigned, including an indication of how the assignments are made for both day and night shifts and for plant staff members both onsite and away from the site. Functional areas should include:

1. Plant systems operations,
2. Radiological survey and monitoring,
3. Firefighting,
4. Rescue operations,
5. First aid,
6. Decontamination,
7. Security of plant and access control,
8. Repair and damage control,
9. Personnel accountability,
10. Recordkeeping, and
11. Communications.

5.3 Augmentation of Onsite Emergency Organization

This section should describe two categories of offsite support assistance to the plant staff emergency organization.

5.3.1 Licensee Headquarters Support

Headquarters management, administrative, and technical personnel should be prepared to augment the plant staff in the performance of certain functions required to cope with an emergency. The following special functions are considered appropriate for headquarters support and should be incorporated in the overall plan, although company policy and organizational features may dictate variations in modes of assigning responsibilities for these functions among headquarters personnel, plant staff personnel, and outside support organizations:

1. Environs monitoring,
2. Logistics support for emergency personnel, e.g., transportation, temporary quarters, food and water, sanitary facilities in the field, and special equipment and supplies procurement,
3. Technical support for planning and reentry/recovery operations,
4. Notification of governmental authorities, and
5. Release of information to news media during an emergency coordinated with governmental authorities.

The emergency organization status of supporting headquarters personnel should be specified, relative particularly to the person directing the plant emergency organization.

In some instances, companies may provide for certain emergency supporting services to their plants by contracts with private organizations. Where this is the case, the nature and scope of the support services should be characterized here. (When such contractors are used, evidence of their qualifications may be requested.) Specific services by contractors should be identified at the appropriate places in the emergency plan.

5.3.2 Local Services Support

This section should identify the extension of the organizational capability for handling emergencies to be provided by ambulance, medical, hospital, and firefighting organizations. Evidence of the arrangements and agreements reached with such organizations should be included in an appendix. This section should contain references to that appendix and to the parts of the plan in which the functions of these organizations are described.

5.4 Coordination with Participating Government Agencies

This section should identify the principal State agency (designated State authority) and other governmental agencies (local, county, State, and Federal) having action responsibilities for radiological emergencies in the area in which the plant is located. If the boundary line between two political entities, e.g., counties or States, passes within the low-population zone or within approximately four miles of the site, agencies from both governmental entities should be included. Subsections for each such agency should include:*

1. The identity of the agency.
2. A description of the authority and responsibility of the agency for emergency preparedness planning and for emergency response, particularly in relation to those of the licensee and to those of other agencies.
3. A description for each agency of specific response capabilities in terms of the expertise of personnel and other organizational resources available. Copies of written agreements with such agencies should be included in an appendix. The information should provide a clear concept of radiological response operations.
4. Activation of the agency function, including titles and alternates for both ends of the communication links, and primary and alternative means of communication. Administrative control methods that will ensure the effective coordination and control of the emergency activities of support organizations should be established.
5. The designation and location of the Emergency Operations Center of each State/local government agency.

Typical agencies to be included here are law enforcement agencies, departments of health or environmental protection, civil defense or emergency/disaster control agencies, and the regional coordinating offices of USERDA's Radiological Assistance Program.

6. EMERGENCY MEASURES

Specific emergency measures should be identified in this section *for each emergency class* and related to action levels or criteria that specify when the measures are to be implemented.

The planning represented by this section should lead to more detailed emergency procedures and assignments for executing tasks by appropriate members of the emergency organization. Emergency measures begin with the activation of an emergency class and its associated emergency organization. The additional measures may be organized into assessment actions, corrective actions, protective actions, and aid to affected persons, where applicable to each class.

6.1 Activation of Emergency Organization

The emergency conditions classified in Section 4.1 involve the alerting or activation of progressively larger segments of the total emergency organization. This section should describe the communication steps taken to alert or activate emergency personnel under each class of emergency. In particular, action levels (based on readings from a number of sensors including the pressure in containment, the response of the ECCS, etc.) for notification of offsite agencies should be described. The existence, but not the details, of a message authentication scheme should be noted for such agencies.

6.2 Assessment Actions

Effective coordination and direction of all elements of the emergency organization require continuing assessment throughout an emergency situation. The details of assessment functions should be incorporated in explicit implementing procedures for each emergency classification. This section should include, however, a description of the methodologies and techniques to be used by the licensee. That description should give reasonable assurance that the magnitude of releases of radioactive materials can be determined, that the magnitude of any resulting radioactive contamination can be determined, that projected exposure to persons onsite or offsite can be estimated, and that emergency action levels specified can be determined, all in a timely manner.

6.3 Corrective Actions

In some emergency situations, actions can be taken to correct or mitigate the situation at or near the source of the problem (for example, to prevent an uncontrolled release of radioactive materials or to reduce the magnitude of a release). Such actions should be considered as a supplement to design features and as both a backup and an extension of automatically initiated actions. Proficiency in corrective actions should constitute a major objective of the training effort and onsite drill program. This section should identify those actions, e.g., fire control,* repair, and damage control, that can and would be implemented when necessary.

6.4 Protective Actions

This section should describe the nature of protective actions for which the plan provides, the criteria

*As an alternative method of providing the information requested in these subsections, the applicant may choose to submit copies of such agencies' radiological emergency response plans as evidence of acceptable coordination.

*If applicable, reference should be made to the description called for in Regulatory Guide 1.70, Section 9.5.1, "Fire Protection System."

for implementing these protective actions, the area involved, and the means of notifying or warning the persons or population at risk. Describe also steps taken (1) to provide to visitors to the plant or site and (2) to make available on request to occupants in the low population zone information concerning how the emergency plans provide for notification to them and how they can expect to be advised what to do.

6.4.1 Protective Cover, Evacuation, Personnel Accountability

The emergency plan should provide for timely relocation of persons in order to prevent or minimize exposure to radiation and radioactive materials. The following items should be included:

1. Plant Site

a. Action criteria.
b. The means and the time required to warn or advise persons involved, i.e.,

(1) Employees not having emergency assignments,
(2) Working and nonworking visitors,
(3) Contractor and construction personnel, and
(4) Other persons who may be in the public access areas on or passing through the site or within the exclusion area.

c. Evacuation routes, transportation of personnel, and reassembly areas, including alternatives for inclement weather and high traffic density.
d. Missing persons check.
e. Radiological monitoring of evacuees.

2. Offsite Areas[9]

a. Actions planned to protect persons in the low population zone and criteria for their implementation.
b. The means and the time required to warn or advise the persons involved, including:

(1) Businesses, property owners, and tenants;
(2) Schools or recreational facilities; and
(3) General public.

6.4.2 Use of Onsite Protective Equipment and Supplies

Additional protective actions that should be considered in emergency planning include measures for minimizing the effects of radiological exposures or contamination problems by the onsite distribution of special equipment or supplies. Measures that should be considered for persons within the exclusion area include:

1. Individual respiratory protection,
2. Use of protective clothing, and
3. Use of radioprotective drugs, e.g., individual thyroid protection.[10]

For each measure that might be used, a description should be given of:

1. Criteria for issuance,
2. Locations of items, and
3. Means of distribution.

6.4.3 Contamination Control Measures

Provisions should be made for preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other surfaces. Control of in-plant contamination should be described in specific radiological protection procedures and need not be repeated here.

6.4.3.1 Plant Site

Protective actions within the exclusion area but outside of fenced security areas should be described and should include, where applicable:

a. Isolation or quarantine and area access control,
b. Control of the distribution of affected agricultural products, including milk,
c. Control of water supplies, and
d. Criteria for permitting return to normal use.

Action criteria (Protective Action Guides) and responsibility for implementation of the measures planned should be described.

6.4.3.2 Offsite Areas[11]

Protective actions planned for the low population zone with provisions for extending such actions to areas farther from the site boundary, if necessary, should be described and should include the same elements as in 6.4.3.1 above.

6.5 Aid to Affected Personnel

This section of the emergency plan should describe measures that will be used by the licensee to provide necessary assistance to persons injured or exposed to radiation and radioactive material. The following matters should be included:

[9] If the information requested here is included in copies of radiological emergency response plans of applicable government agencies (see footnote to Section 5.4), it need not be repeated.

[10] The U.S. Food and Drug Administration is presently developing guidance for the use of radioprotective drugs.

[11] Refer to footnote to Section 6.4.1-2.

6.5.1 Emergency Personnel Exposure

This should specify exposure guidelines for entry or reentry to areas in order to (1) remove injured persons and (2) undertake corrective actions. Exposure guidelines should also be specified for emergency personnel who will be providing first aid, decontamination, ambulance, or medical treatment services to injured persons and a description of how these guidelines will be implemented. Methods for permitting volunteers to receive radiation exposures in the course of carrying out lifesaving activities should ensure expeditious decisionmaking and a reasonable balance of relative risks.[12]

6.5.2 Decontamination and First Aid

Capabilities for decontaminating personnel should be included, along with a brief description of first aid training and capabilities of appropriate members of the emergency organization.

6.5.3 Medical Transportation

Arrangements for transporting injured personnel, who may also be radiologically contaminated, to medical treatment facilities should be specified.

6.5.4 Medical Treatment

Arrangements made for local and backup hospital and medical services and the capability for the evaluation of radiation exposure and uptake should be described.

For both hospital and medical service, the plan should incorporate assurance not only that the required services are available, but also that persons providing them are prepared and qualified to handle radiological emergencies. Written agreements with respect to arrangements made by the applicant should be included in the appendix.

7. EMERGENCY FACILITIES AND EQUIPMENT

This section of the emergency plan should identify, describe briefly, and give the locations of items to be used or maintained by the licensee. Where appropriate, references may be made to applicable sections of the Final Safety Analysis Report for additional detail.

7.1 Emergency Control Centers

This should include the principal and, if provided for, alternative onsite locations from which effective emergency control direction is given. One alternative offsite location under the jurisdiction of the applicant should also be described. Their locations should be related to the reactors, prevailing wind direction, and evacuation routes.

7.2 Communications Systems

This should give brief descriptions of both onsite and offsite communications systems, including redundant power sources that would be required to perform vital functions in transmitting and receiving information throughout the course of an emergency.

7.3 Assessment Facilities

Many of the emergency measures described in Section 6 will depend on the availability of monitoring instruments and laboratory facilities. This section should list monitoring systems that are to be used to initiate emergency measures, as well as those to be used for continuing assessment. The listing should be organized as follows:

7.3.1 Onsite Systems and Equipment

1. Geophysical phenomena monitors, e.g., meteorological, hydrologic, seismic.
2. Radiological monitors, e.g., process, area, emergency, effluent, and portable monitors and sampling equipment.
3. Process monitors, e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components.
4. Fire detection devices.

7.3.2 Facilities and Equipment for Offsite Monitoring

1. Geophysical phenomena monitors.
2. Radiological monitors.
3. Laboratory facilities, fixed or mobile.

7.4 Protective Facilities and Equipment

Specific facilities and equipment that are intended to serve a protective function should be described. The description of shelter or assembly areas should emphasize those features that ensure their adequacy with respect to their capacity for accommodating the number of persons expected and with respect to shielding, ventilation, and inventory of supplies, including, for example, respiratory protection, protective clothing, portable lighting, and communications equipment. If design and other details are provided elsewhere in the Final Safety Analysis Report, only a brief summary need be given.

7.5 First Aid and Medical Facilities

A summary description of onsite facilities should be provided. (Offsite medical facilities should be

[12] National Council on Radiation Protection and Measurements, NCRD Report No. 39, "Basic Radiation Protection Criteria," issued January 15, 1971, pages 99-102.

identified in the appendix (Section 10 of Annex A to this regulatory guide) along with the agreements providing for their use.)

7.6 Damage Control Equipment and Supplies

A summary description of onsite damage control equipment and supplies should be provided.

8. MAINTAINING EMERGENCY PREPAREDNESS

This section of the plan should describe the means to be employed to ensure that the plan will continue to be effective throughout the lifetime of the facility.

8.1 Organizational Preparedness

8.1.1 Training[1]

This should include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel:

1. Directors or coordinators of the plant emergency organization.
2. Personnel responsible for accident assessment, including control room shift personnel.
3. Radiological monitoring teams.
4. Fire control teams (fire brigades).
5. Repair and damage control teams.
6. First aid and rescue teams.
7. Local services personnel.
8. Medical support personnel.
9. Licensee's headquarters support personnel.

8.1.2 Drills and Exercises[1]

This section should describe provisions for the conduct of periodic drills and exercises to test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment, and to ensure that emergency organization personnel are familiar with their duties. Preplanned descriptions or simulations of accidents or similar events should be used to prepare scenarios appropriate to the objectives of each drill or exercise.

The plan should provide for an initial exercise prior to loading of the first unit at any site and for annual exercises thereafter using scenarios appropriate to the Site Emergency or General Emergency classifications of Section 4.1. Each of these exercises should contain provisions for coordination with and participation of offsite emergency personnel, including those of State and local government agencies. Each exercise should test, as a minimum, the communications links and notification procedures with those offsite agencies to demonstrate that capability for early warning of the public is maintained.

This plan should also provide for quarterly drills for fire team (fire brigade) members, annual fire emergency drills containing provisions for a participation by an offsite fire department, and annual drills of repair and damage control teams. These should be conducted as realistically as is reasonably possible. Provisions should be made for critiques of all drills and exercises. Training should include delineation of methods to evaluate its effectiveness and to correct weak areas through feedback with emphasis on schedules, lesson plans, practical training, and periodic examinations.

8.1.3 Emergency Planning Coordinator

It is suggested that licensees establish and maintain on the normal plant operating staff an Emergency Planning Coordinator whose responsibility should include the coordination of offsite emergency planning efforts. Principal duties of this position may be described in this section.

8.2 Review and Updating of the Plan and Procedures

Provision should be made for an annual review of the emergency plan and for updating and improving procedures to incorporate results of training and drills and to account for changes onsite or in the environs. Means for maintaining all coordinate elements of the total emergency organization informed of the plan and revisions to the plan or relevant procedures should be described. Provisions for reviewing and updating all written agreements at least every two years should be included.

8.3 Maintenance and Inventory of Emergency Equipment and Supplies

The operational readiness of all items of emergency equipment and supplies should be ensured. The provisions for performing maintenance, surveillance testing, and inventory on emergency equipment and supplies should be described.

9. RECOVERY

This section should describe general plans, including applicable criteria, for restoring the plant as nearly as may be possible to a safe status.

10. APPENDIX

The appendix should include the following items:

1. Copies of agreement letters with offsite emergency response supporting organizations and copies or summaries of referenced interfacing emergency plans.

2. Plots of calculated time-distance-dose for the most serious design basis accident as called for in the

[1] See also Regulatory Guide 1.120, "Fire Protection Guidelines for Nuclear Power Plants."

latest revision of Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants," Section 13.3-1.a, -1.b, and -1.c.

3. A map or maps, drawn to suitable scale and clearly legible, that reflect the information called for in Regulatory Guide 1.70, Section 13.3-6.a. and -6.b., and display the exclusion area and low population zone boundaries.

4. Listings, by title, of written procedures that implement the plan.

5. Listings by general category of emergency kits, protective equipment, and supplies that are stored and maintained for emergency purposes. A detailed catalog of individual items should not be included in the plan.

The written procedures themselves and a detailed catalog of protective equipment and supplies should be available at the plant site for inspection at any time by a representative of the Commission's Office of Inspection and Enforcement.

ANNEX B

IMPLEMENTING PROCEDURES FOR EMERGENCY PLANS

This annex provides guidance regarding the preparation and content of procedures that implement the emergency plan.

1. CONTENT AND FORMAT OF PROCEDURES

This section describes desirable features that should be incorporated, where appropriate, into individual implementing procedures.

1.1 Organization and Responsibilities

Each procedure should specify the individual or organizational element having the authority and responsibility for performing specific critical tasks covered by the procedure.

1.2 Action Levels

Emergency action levels and protective action guides should be specified in procedures, along with the emergency actions or protective actions required and the individuals or organizational units responsible for their implementation.

1.3 Actions by Support Agencies

The specific actions to be performed by support groups should be identified in the procedures dealing with their activities. If the emergency actions performed by these groups require coordination with other elements of the emergency organization, the particulars and requirements of this coordination should be specified in the controlling procedure.

1.4 Procedure Format

A rigid format for implementing procedures is not suggested in this guide. An acceptable format should display the action steps so the user of the procedure can clearly understand his duties. The format of procedures that specify immediate actions to be taken has special significance because the user needs brief and explicit instructions that can be followed easily and quickly.

1.4.1 Conditions and Prerequisites

Each procedure should explain the prerequisites and conditions that should exist before the specified actions or operations are performed. These should be in the form of action levels or protective action guides.

1.4.2 Actions and Limitations

Procedures should present the required actions in a succinct and concise manner and in step-by-step order and logical sequence. The instructions should be sufficiently detailed for a qualified individual to perform the required actions without supervision but need not provide a completely detailed description of the actions, methods, or processes.

If the user is given the latitude to exercise judgment in implementing specific actions or parts of the procedure, guidelines should be provided in the procedure to aid the user in making decisions.

1.4.3 Cautions and Precautions

Important steps or precautions should be noted or highlighted within the procedure.

1.4.4 References

When procedural steps require other functions or jobs to be performed, the controlling procedure should contain the reference to other applicable procedures.

1.4.5 Signoff Sheets and Checklists

Complex or lengthy controlling procedures should have provisions for signoff sheets or checklists to document the fact that required actions have been taken or have been completed. Examples include notification call lists and personnel accountability checks.

2. SCOPE AND IMPLEMENTING PROCEDURES

2.1 Immediate Action Procedures

There should be a separate procedure for each identified class of emergency to specify and implement the preplanned response actions required for that emergency condition. Each procedure should (1) clearly identify the action level, the protective action guide, or the conditions for declaring the emergency condition; (2) list by priority the individuals and elements of the emergency organization that are to be notified and mobilized; and (3) specify the emergency actions that are to be taken by designated individuals and elements of the emergency organization. Communications procedures should require formality, acknowledgements of orders and reports, designation of relative priority of communications with the scene of the emergency, site emergency control center, control room, outside activities, etc. Effective methods for rapid internal and external transmission of information may include prepositioned messages (fill in the blanks in specified sequence); instructions for use of voice (telephone and radio transmission) and

telewire facsimile (TWX); use of manual status boards for details of the emergency; and use of maps, charts, and plant configuration drawings for site and local areas required by Annex A.10.3.

2.2 Emergency Action Procedures

The following sections list subjects that should be covered by written procedures. The titles of specific procedures, as well as their contents, may vary among licensees, but the actions or subjects described below should be covered within the group of procedures that implement the emergency plan.

2.2.1 Notifications

Call lists to alert and mobilize the emergency organization and supporting agencies should be specified for each identified class of emergency. If call lists are not too lengthy or complex, they should be incorporated into the immediate action procedure.

2.2.2 Radiological Surveys

Procedures should specify the methods, and preplanned locations if feasible, for emergency radiological surveys in the plant and in the environs of the plant. The procedures should include or refer to requirements for providing collected data and information to the individual or organizational element responsible for emergency assessment functions.

2.2.3 Personnel Monitoring and Decontamination

The procedures should require monitoring of individuals leaving restricted areas or other areas known or suspected to be contaminated. The procedures should specify contamination levels that require decontamination actions. They should also include or refer to decontamination procedures for various types and levels of radioactive contamination.

2.2.4 Evacuation of Onsite Areas

Procedures for evacuation should include the action levels that require evacuation of specified areas, buildings, and the site. Primary and secondary evacuation routes and assembly areas should be designated. These procedures should refer to or be related to those procedures for personnel accountability and personnel monitoring.

2.2.5 Personnel Accountability

A method of personnel accountability should be specified in procedures to ensure that, at all times, all individuals within the site confines and areas and buildings within the site are warned of imminent threats or hazardous conditions and evacuated from affected areas if required.

The procedures should designate individuals having the responsibility of accounting for persons within areas and buildings within the site. The procedures should contain appropriate checksheets and signoffs and should provide for reporting of information to the central authority in charge of the emergency response actions.

2.2.6 Assessment Actions

Procedures should describe the system for gathering information and data on which to base decisions to escalate or deescalate emergency response actions. They should identify the types and sources of information available such as control room radiological and meteorological instruments and radiation and contamination level as defined by in-plant, site boundary, and onsite and offsite surveys. The procedures should specify action levels (based on readings from a number of sensors, including the pressure in containment, the response of the ECCS, etc.), protective action guides, and other guidelines as a basis for decisions to initiate emergency measures and actions or to terminate or otherwise modify emergency actions in progress. The procedures should assign responsibilities for gathering and using assessment data and information.

2.2.7 First Aid and Medical Care

The procedures that specify the methods and instructions for receiving, transporting, and handling injured persons and providing for their medical treatment should specifically include the precautions and special handling required for contaminated patients. The procedures should cover separately the provisions for and use of medical treatment facilities in both onsite and offsite areas.

2.2.8 Firefighting

In addition to the normal hazards of firefighting such as flame, heat, smoke, toxic gas, structural failure, electric shock, etc., the procedures should also cover precautions for fighting fires involving radioactive materials and for situations where firefighters may otherwise be exposed to radiation. They should cover the responsibilities and capabilities of both in-house and offsite firefighting teams and equipment. They should include specific instructions for monitoring the exposure to radiation of offsite personnel involved in firefighting.

2.2.9 Reentry

Procedures and guidelines should be developed for reentry to previously evacuated areas for the purposes of saving lives, search and rescue of missing and injured persons, or manipulation, repair, or recovery of critical equipment or systems. Specific guidelines should be included in these procedures for

maximum emergency radiation exposures for reentry and rescue personnel. Procedures should be developed for permitting voluntary acceptance of emergency exposure for lifesaving actions.

2.2.10 Plant Security

The normal plant security procedures should provide for security and access control during emergency conditions and should include provisions for unencumbered access by emergency vehicles and personnel.

2.2.11 Recovery

Action levels and guidelines should be developed for restoring operations and property as nearly as possible to a safe status. The less complex operations such as personnel emergencies and emergency alerts should require only brief recovery action procedures. The more complex emergency operations, however, (site and general emergencies, for example) will generally require correspondingly complex recovery actions. It is not practicable to plan detailed recovery actions for all conceivable situations, but procedures that include at least the initial planning considerations for recovering, repairing, decontaminating, etc., potentially affected portions of the facility should be developed.

During onsite recovery operations, personnel exposures to radiation should be maintained within 10 CFR Part 20 limits.

2.3 Supplemental Procedures

This section lists subjects for procedures that supplement those covering emergency response actions. The specific titles and contents may vary, but the described subjects should be covered in the licensee's procedural system.

2.3.1 Communications

Procedures should be available for activating, operating, testing, and maintaining the emergency communications systems.

2.3.2 Documentation and Records

Procedures should include requirements for recording the implementation and completion or termination of emergency response actions, logging assessment data, reports of personnel accountability, and maintenance of required records and logs.

2.3.3 Equipment and Instrumentation

Operating instructions for equipment and instrumentation should be prepared and stored with the equipment. Procedures should include inventory lists of kits, equipment, and instruments and provisions for periodic inventory, inspection, calibration, and maintenance.

2.3.4 Training

The training program for the emergency organization should be documented in the form of schedules and lesson plans or lesson outlines. The program should include training for licensee employees and for offsite organizations and personnel who are to provide support in the emergency response. The training for offsite personnel who may be required to enter the site should typically include familiarization with the site and instructions on site procedures necessary for their safety and for their effective interface with onsite personnel. Offsite personnel training may include emergency dosimeter issue procedures, fire main connection locations, vehicle access routes, and plant alarms.

Training should include delineation of methods to evaluate its effectiveness and to correct weak areas through feedback with emphasis on schedules, lesson plans, practical training, and periodic examinations.

2.3.5 Tests and Drills

Procedures should provide for practice drills that use detailed scenarios to test both specific procedures and implementation of the major aspects of the emergency plan. The scenarios should be planned simulations of emergency situations, and they should be approved by plant management after they have been reviewed for scope and adequacy.

The procedures should consider the utility of testing on both an announced and unannounced basis. They should require the use of an observer staff during the conduct of test drills and should contain provisions for appropriate checklists or critique sheets to be used by the observer staff.

3. REVIEW AND APPROVAL OF PROCEDURES

The procedural system used by licensees should contain written rules and instructions governing the writing, revising, and updating of implementing procedures. The instructions should specify the methods to be used to ensure that procedures, revisions, and changes are reviewed for adequacy, approved for use, and distributed to user organizations and individuals having the responsibility for implementing the procedures.

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