NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

PUBLIC MEETING

DISCUSSION OF SECY-79-[illegible]91 - PROPOSED AMENDMENTS TO 10 CFR PART 50, SECTIONS 50.33, 50.54 & APPENDIX E; PLANS FOR COPING WITH EMERGENCIES AT PRODUCTION & UTILIZATION FACILITIES

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING

DISCUSSION OF SECY-79-591 - PROPOSED AMENDMENTS TO 10 CFR PART 50, SECTIONS 50.33, 50.54 & APPENDIX E; PLANS FOR COPING WITH EMERGENCIES AT PRODUCTION & UTILIZATION FACILITIES

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Room 1130
1717 H Street, N. W.
Washington, D. C.

Monday, 19 November 1979

The Commission met, pursuant to notice, at 1:40 p.m.

BEFORE:

DR. JOSEPH ME. HENDRIE, Chairman of the Commission

VICTOR GILINSKY, Commissioner

RICHARD T. KENNEDY, Commissioner

PETER A. BRADFORD, Commissioner

JOHN F. AHEARNE, Commissioner

PRESENT:

Messrs. Minogue. Smith, Grimes, Goller, Cunningham, Malsch, Jamgochian, Hanrahan, Bickwit, and Sanders.

* * *

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CHAIRMAN HENDRIE: Let's get started with this afternoon's agenda. We need to consider proposed amendments to Part 50, plans for coping with emergencies, production and utilization facilities. This is a subject which we have talked about before. The staff now comes back to us with the next stage in our development of these improved rules. The Commissioners have also had the benefit of extended discussions with Congress.

It seems to me that we ought to be able to move on with this matter.

Bob?

MR. MINOGUE: Karl will be the spokesman.

MR. GOLLER: First slide.

(Slide.0

We are in the midst of an ongoing rulemaking procedure on emergency planning and preparedness. This was initiated when the Commission published advanced notice of proposed rulemaking on emergency planning and preparedness last July 17th. Shortly thereafter, the Commission directed the staff to initiate expedited rulemaking.

The proposed publication for comment of interim rule changes which you are considering today is in response to that direction. By way of a reminder to you, some background milestones which pertain to this action.

(Slide.)

Each of these are discussed in some detail in Enclosure D to SECY-79-591, the basic paper to the Commission on this.

The EPA-NRC Task Force Report included recommendations on the emergency planning zones, and the General Accounting Office report included recommendations on information to the public on emergency planning, a review of state and local programs, emergency planning programs, and on emergency planning sites.

The NRC Siting Policy Task Force Report again included recommendations on emergency planning zones. Senate Bill S. 562, which is the pending NRC 1980 authorization bill, would as presently drafted require the NRC concurrence in state and local programs. The House Report 96-413 is a very comprehensive and excellent study on the subject of emergency planning around nuclear power plants. It encompasses many recommendations, many of which are addressed in a proposed regulation which you are considering this afternoon.

The NRC Emergency Planning Task Force Report to the Commission identified problem areas and action plans to resolve these problems. We have submitted what is essentially the proposed regulation changes which you are considering this afternoon, and did so for the first time. The Commission policy statement on EPA-NRC Task Force Report, you will

recall, adopted the emergency planning zone concept. More recently, the Kemeny Commission report made certain recommendations and observations concerning emergency planning preparedness.

Slide 3, please.

(Slide.)

Four papers have been submitted to the Commission on the proposed rule. SECY-79-591, dated October 26th, was the original paper. I think the Commission is quite familiar with the contents of this paper. It was referred to at the Congressional hearings that the Chairman just mentioned. Copies of two pages of the paper were attached to the Chairman's testimony to the Moffett Subcommittee hearing.

The proposed rule changes which this paper set forth applied primarily to power reactors, but it is important to note that they do apply partially to non-power reactors, and also in part to Part 70 fuel cycle facilities.

The next paper was submitted to the Commission, 591-A, was submitted on November 8th, added proposed rules to clarify the application of Appendix E to operating plants. These proposed changes, I should hasten to mention, are generally only a codification of the staff's interpretation of current Appendix E requirements, which are now being applied to operating reactors by the NRC review teams.

Paper 591-B, submitted on November 13th, transmitted

Enclosure F to the base paper, 591, which was identified and acknowledged, but was not available at that time. This Enclosure F contains the staff analysis of public comments which were received in response to the Commission's advanced notice of proposed rulemaking.

Lastly, 591-C was submitted only last Friday to the Commission. It modified Enclosure A with the Federal Register notice including the statement of considerations and the specific rules therein. It came about primarily to respond and resolve the comments of OGC and OPE, and in the process improving comments and suggestions from other offices also were incorporated.

The revised Federal Register notice was developed in the last week by participation of representatives from all of the interested offices. I will have more to say about this later, particularly the changes that came about between 591-C and the base document 591.

If I could have the next slide, please, Slide 4.

(Slide.)

I would like to remind you of what the basic proposed rule changes were in the initial document, 591, which are still true, even after these several additional submittals to you.

COMMISSIONER AHEARNE: Could be viewed as approximately true.

MR. GOLLER: I will get into the changes that have come about in some detail, Commissioner.

Firstly, NRC concurrence in state or local government emergency plans to be required as a condition for operating license issuance.

COMMISSIONER AHEARNE: Is there any significance to the word "or", "state or local emergency plan"?

MR. GOLLER: It is a typo.

At this point I would like to pause for a moment and point something out to the Commission. It was at least a new realization to myself, and that is, when one speaks of a concurred-in state plan one must necessarily talk of a state plan relative to a particular facility. There is no such thing, and I think there can be no such thing, as a general concurred-in state plan which would be appropriate for any and all facilities that might be built in that state. Therefore, a re-review and a concurrence in the state, and particularly the local plans, is something that will have to go on each and every time a new facility is proposed in any state.

COMMISSIONER GILINSKY: My impression is that at least the early plans that we reviewed were in fact of this general type and didn't specifically relate to one particularly tied to an individual facility. Am I wrong in this?

MR. GOLLER: I think so. I think they must

necessarily be tied to a particular facility, certainly --

COMMISSIONER GILINSKY: I think they should be.

MR. GOLLER: Once a state plan is developed and concurred in, it would serve as an umbrella and would make the next time much easier. But particularly because of the local government plans and the necessary relationship between those and the state plans, the coordination that must take place, the notification, the agreements of responsibility and so on, this must be developed specific to each plant.

COMMISSIONER AHEARNE: Nobody is disagreeing with the logic, Karl. It is a question of history. Is there anybody from State Programs? Could you answer that?

MR. SANDERS: I think basically what we have done up until recently, the post-TMI era, is to concur in the state plan and to have at least one local plan or one county plan that was adequate in connection with that concurrence of the state plan. It did not mean that we had plans for localities to cover all sites.

I think this is one of the deficiencies in our concurrence process up until recently.

COMMISSIONER BRADFORD: If the state plan plus the plan of any one town?

MR. SANDERS: It would be a county, yes.

COMMISSIONER BRADFORD: Any one county.

MR. SANDERS: That's right. And the assumption was

that the state then would go to, if there were other counties, other sites involved, that the state would then go to the o her jurisdiction or jurisdictions and assure that a similar plan for that jurisdiction or jurisdictions was prepared.

COMMISSIONER BRADFORD: But if that didn't happen and the wind were blowing the wrong way, you would in effect -- you would have a county with conceivably no plan at all?

MR. SANDERS: That's right, but not certainly one that we had reviewed.

COMMISSIONER GILINSKY: You were approving a model.

MR. SANDERS: Yes, sir.

COMMISSIONER GILINSKY: Rather than a plan that covered the dangers --

MR. SANDERS: As far as the local situation was concerned.

COMMISSIONER AHEARNE: It was more a generic local-state plan.

MR. GOLLER: I think perhaps the thing that makes the point is that we actually had the situation where we had concurred-in state and local plans for a particular facility in a state, we do not have that for another facility in the same state.

COMMISSIONER AHEARNE: None of us were arguing the logic of what should be done. I was trying to clarify the history of what had been done.

MR. GOLLER: There are two subparts to this first basic concept of approval of state and local government emergency plans. The first, 1.A on the slide, is that currently operating plants will be required — must also develop state and local government plans that are concurred in by the NRC, and that they would probably be required to cease operation if these plans are not concurred in by some fixed time.

COMMISSIONER BRADFORD: As to 1.A under the proposed rule, when does that requirement become effective?

MR. GOLLER: One moment on that, sir.

COMMISSIONER AHEARNE: This is 591, not 591C.

MR. GOLLER: Similarly, under B -- and this is primarily a consideration in the future -- that haven't a concurred-in program will probably be required to cease operation -- excuse me, I will go back and answer your question. I will get into some more detail on this later. I thought for the moment Part B addressed this also. But that did not change. That still requires the submittal of concurred-in plans within four months if plans should ever lose their concurrence.

COMMISSIONER BRADFORD: Are you going to come back to A now?

MR. GOLLER: Yes. This was 180 days in the basic document, 591. We would propose to change this to January 1, 1981. I will get into a little more detail on this later when

I bring out some of the differences between the two submittals.

I also want to note that I used the word "will probably require ceasing operation." I will explain that a little bit more in a moment, also.

Right now I am just trying to refresh your memories of what you had in mind, what these rules proposed in the basic document, and what you discussed with Congress. The point is that the rule as now proposed would provide some flexibility to the requirements of 1, 1.A and 1.B.

The second major change in the rules is a requirement for emergency planning zones. These are identified to be about 10 and 50 miles. This is consistent with the rule as you first saw it. It is also consistent with your policy statement that you recently issued and which you know you gave careful thought to, and specifically decided to go with that flexibility, the about 10 to 50 miles.

I should mention that there are some differences of opinion about this point still existing within the staff. There are the questions of how the Congress and the public will perceive this flexibility rather than a firm number; and there are foreseen problems of difficulty of application. What would be the basis for particularly reducing the 10-mile value?

COMMISSIONER AHEARNE: Would both of those sets of problems go away if the words were, quote, "no less than"?

MR. GOLLER: That is one of the specific suggestions that some people have made. It wouldn't completely go away, but I think 80 percent of it would. It would be easier as far as the application is concerned, certainly. However, you would lose some of the advantages of that flexibility, which were the reasons for going with the "about" in the first place. It is conceivable that you could run into particular cases where you might want to shave this some by a fraction of a mile or a mile, possibly more, as a result of demographics or geographic considerations, or even political.

If, for example, a state boundary were 9-1/2 miles, there might be a basis for reducing this. Just as it is well known that there was no very strong reason for picking precisely 10 miles. It could just as well have been 9 or 11. 10 is a nice round number, and there are arguments on both sides.

I just wanted to call to your attention that there are some differences of opinion within the staff on this point.

COMMISSIONER BRADFORD: Basically, if there were two states involved, we would require the plans of both states to be submitted.

MR. GOLLER: Yes, if they fall within --

COMMISSIONER BRADFORD: Leaving aside the question of the 9-3/4 mile boundary.

MR. GOLLER: Yes. But this might change the kind of plan that you would need. Suppose a state boundary were at 9-1/2 miles. You would need one kind of a plan for the shorter emergency planning zone and a different kind of plan for the longer distance. It might simplify things as far as that particular facility is concerned. It might make more sense to --

COMMISSIONER BRADFORD: Do we have any plants within 50 miles of Canada?

CHAIRMAN HENDRIE: I imagine.

MR. MINOGUE: I think it is important to recognize that in this context there really are significant differences in demography and topography of the area and the meteorological patterns and so on. It is important to keep the element of that kind of variation among sites in developing emergency plans.

MR. GOLLER: The third basic proposed rule change would be to require the submittal and review by the NRC of the applicant licensee's detailed -- and I want to emphasize detailed -- implementing procedures. I will have more to say about this a little bit later also.

And lastly, the changes involve the clarification and expansion of 10 CFR Part 50, Appendix E, on emergency planning and preparedness. As I noted previously, these changes are in general simply a codification of the

current Appendix E requirements that are now in the process of being applied to operating plants by the NRC review teams. It is portions of Appendix E, including the proposed changes therein, that are the part of the rule changes being proposed that are applicable to non-power reactors and Part 70 fuel cycle facilities.

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(Slide.)

I would now like to point out --

CHAIRMAN HENDRIE: Before you launch, you have been talking in the last ten minutes about some changes. We understand, if I am correct, that those are changes from the existing regulatory scheme to 591.

DR. GOLLER: The changes that I have been talking about are that and, in fact, four -- 591 A, B, and C.

CHAIRMAN HENDRIE: Now you will talk specifically about what is before the House, currently before the House in 591C?

DR. GOLLER: Yes, sir. What I have just mentioned to you is before the House. I carefully presented that in general enough terms that that is still the case.

I am now going to go into the fine structure to point out the changes that we will propose to make between 591 and C, and I think you will see that they are not particularly significant or substantive.

Firstly, there were considerable changes for clarification and editorial changes in the statement of considerations, the statement that goes with the proposed changes in the Federal Register notice. It was significantly rewritten, reworded.

Examples are that it now clarifies the -- and correctly indicates -- the full range of considerations that

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went into formulating the proposed rule. That is to say primarily that this was a self-initiated effort and was not a reaction to outside efforts alone, as the previous text might have indicated to the reader.

It also now clarifies the recognition of state and local government responsibilities for assuring public health and safety as well as that of the NRC. It incorporates an acknowledgement of the transfer of lead for radiological emergency response planning and preparedness of NRC to FEMA and acknowledges that we are in a transition period in this effort and that coordinated concurrences of state and local plans will take place between FEMA and the NRC.

I note that at the Chairman's request, OPE has prepared some revised words for that particular paragraph which, I think, have been placed before you this afternoon which better state exactly what agreements have been made between the NRC and FEMA.

COMMISSIONER AHEARNE: I would point out that I think that it is still too weak a statement in the proposed rule of the role that FEMA should have, I believe, not only in the introductory part but in the rule pieces itself. It ought to explicitly say that it will be an NRC and FEMA concurrence.

DR. GOLLER: We had the opportunity to discuss this before, Commissioner Ahearne. Perhaps, for the benefit

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of the other Commissioners, I should point out that FEMA is not specifically mentioned in the rule. In the rule changes, it requires only concurrence by NRC. The statement of connsiderations, however, acknowledge FEMA's lead role and the fact that actually both organizations will completely concur. We are talking about the publication of a proposed rule for comment.

Hopefully, by the time we finalize this rule as an effective rule, this situation will be clarified, and we will be able to speak more directly to it.

MR. MINOGUE: I think the recognition in the statement of considerations of this factor would provide the rationale to make such a change in the final rule.

COMMISSIONER AHEARNE: I understand that. What I am saying is that what I would prefer to see in the proposed rule is a more explicit statement.

CHAIRMAN HENDRIE: There is a draft paragraph from OPE which is here in the array of papers someplace. It seems to me it is a trifly more explicit.

COMMISSIONER AHEARNE: Yes. It still falls short, though, of how far I would prefer to see it.

MR. MINOGUE: I don't think any of us would have any reason not to do that. The rule as drafted in the context of trying to reflect the current situation — this is changing rapidly until FEMA gets itself organized.

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COMMISSIONER AHEARNE: Certainly, and I prefer to put down what I believe will and should be the case in the next year when the rule goes into effect.

MR. MINOGUE: We can make a change -- such a change if that is the general consensus.

DR. GOLLER: The changes I just mentioned were intended to be examples of the clarification and editorial changes that were made in the statement of considerations and also in the rule wording itself.

The other five changes that I indicated on the slide, you will recognize as Items A through E in the position paper, 591C. I might say just a few words about each of these.

The first one is the one we already mentioned before. In that, we have proposed a change in the period for obtaining concurrence for operating plants from 180 days to January 1, 1981. The primary significance of this change is that the 180 days was mentioned to Congress and could possibly be perceived by the Congress or the public as a delay in implementation of the requirement.

Actually, as Commissioner Ahearne already alluded to, this will probably come out about the same, as you will see when I get into the proposed schedule for these activities a little bit later. The reason for the change was to make it consistent with the schedule of the NRC

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review teams that are currently upgrading the operating reactor emergency plans, which will not be completed until about that time, and this date was changed at the request of NRR.

If you would like any further explanation of why the change and what the options are, they are present and would be able to speak to this.

COMMISSIONER AHEARNE: I would like to hear a little explanation, because putting aside my semi-facetious comment -- and I recognize the practicalities may end up being, if we stick to the 180 days, it could be later than January 1, 1981, but nevertheless, I am interested in why the NRR review team schedule should drive that particular issue.

MR. GRIMES: The review team schedules are to try to complete the actual reviews by mid-summer; however, going back to SECY-79-450, the intent was to get emergency plans in place immediately around the facilities in the very near future, and then extend those plans, jurisdiction by jurisdiction, out to about a ten mile distance and 50 miles for the ingestion pathway by January, 1981. And that was the date stated in that information paper and the date we have been telling people. And it also is important in the sense that State Programs has been telling states that the Hart Bill would allow concurrences to take place based on

NUREG 75/111, which does not include the emergency planning zone concept to ten miles, so we were afraid that putting 180 days in, if we were so fortunate as to get a rule out in January or February, would contradict some of the guidance we had been giving the states and utilities, that the -- and might be in contradiction to the Hart Bill if that passed also, requiring the EPZs in a much shorter time than we had previously indicated.

We think that a lot of time is going to be required to complete all of the plans out to ten miles.

COMMISSIONER AHEARNE: Let me separate those three pieces, if I can.

There is the NRR review going on. There is what State Programs may have told about 75/111, and then there is the Hart Bill.

MR. GRIMES: The last two are directly connected. State Programs has based what they have told states on the expectation that something like the Hart Bill would pass, and State Programs statements on whether or not they could get the concurrences done by the Regional Advisory Committee is based on current criteria which does not include the emergency planning zones.

COMMISSIONER AHEARNE: But I would think whether or not the Hart Bill passes or what version passes, when something passes it will affect what we are doing once it

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becomes the law of the land.?

MR. GRIMES: Yes. But it is now affecting what we are doing, in that the Regional Advisory Committees have been told to proceed with their concurrence reviews, based on 75/111.

COMMISSIONER AHEARNE: We have also, I thought, recently gone out with policy statements that as far as the NRC policy is concerned, the EPZ is the item.

MR. GRIMES: Correct. We have just recognized that can't be done overnight. It can't be perfected overnight.

COMMISSIONER AHEARNE: We are not really asking for overnight. We are asking for six months following, some X months of still process that we have underway.

MR. GRIMES: My judgment is based on the information I have gotten from feedback from the team reviews and also from State Programs. It is going to take most of next year to get the ten mile zones in place and the plans written and approved.

COMMISSIONER AHEARNE: Do you set the date at the time in which you think everyone will be able to meet it, or do you set the date on a time in which you think most and certainly perhaps the most critical should meet it and then recognize you may have to, then, review on a case by case basis the others?

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MR. GRIMES: I think it is more of the former, although I hadn't thought about it really in that context. We are out pushing very hard for people to move as fast as they feasibly can. I think --

COMMISSIONER AHEARNE: Your review teams are, in a sense, going on a priority basis?

MR. GRIMES: Yes.

COMMISSIONER AHEARNE: Thank you.

DR. GOLLER: If I could move on, then, to the third bullet on this slide.

Both versions of the paper submitted to the Commission -- that is, 591 and 591C -- envision that -- and provided for the Commission making a determination as to whether a license should be granted, depending upon whether state and local plans have been concurred in or not, whether a license should be allowed to continue operating if a -- if plans are not concurred in by certain time periods, and whether a plant should be required to cease operation is a state or local plan should ever lose concurrence.

But the revised version, 591C, is more specific in providing a basis for the Commission allowing continued operation, in that it specifically provides for applicant licensees having the opportunity to demonstrate that the deficiencies in the state and local plans are not significant or that compensating actions have been or will

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be taken.

COMMISSIONER GILINSKY: I wonder if I could ask you at this point what you mean by the statement, "The Commission specifically does not find that operation of a nuclear power facility in the absence of a plan is unsafe. The Commission only finds that the public can best be protected within the framework of the Atomic Energy Act if additional attention is given to emergency response planning."

COMMISSIONER AHEARNE: What would be lost if you just eliminated that?

DR. GOLLER: This is intended to give the perception of a matter of degree. Emergency planning is another layer of protection.

COMMISSIONER GILINSKY: I understand that. But you just got done in the preceding paragraph saying that formerly emergency planning was looked upon as sort of a secondary source of protection, and now it's going to be put on an equal basis with design review and siting.

DR. GOLLER: There are plants operating now. There will be plants operating for some period of time, 180 days, January 1.

COMMISSIONER GILINSKY: I understand that. But there is a transition problem that we face every time we lay on some increased requirement. We require — well, whatever

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it is -- increased instrumentation, and we simply accept the fact that it can't be put in instantly even though we think it ought to be there.

That strikes me as a separate problem. But the way you have put it, it seems to continue to leave it in a subsidiary category. As I said, you just finished in a preceding paragraph, putting it on an equivalent level with design review and siting.

I don't think you would say that without adequate design review or siting you can have an acceptable state of affairs.

DR. GOLLER: The intent was to say that during this interim period that these plants are not unsafe, and also that in the future, if the Commission should ever see fit to allow plants to continue to operate without concurred in state or local emergency plans, that there, too, those plants are not unsafe.

COMMISSIONER GILINSKY: I wonder if the word "safe" is what you want here. It is not a word that is not in the regulations or in the law. It gets us into all sorts of difficulties.

The fact is -- as I said, we live with this transition problem every time we increase a requirement. It seems to me that is something that can be handled separately. We all realize you can't have these new plans

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over night.

CHAIRMAN HENDRIE: Maybe "unsafe" is not quite the right word. What you are trying to say specifically is, to cover the transition period in particular, but that the absence of an emergency plan that conforms to this rule does not mean that the plant doesn't meet the adequate protection requirements of the statute. If it did, it couldn't operate. That's clearcut.

What you are proposing here is that if the finding be that that is not the case, to allow an orderly transition.

COMMISSIONER AHEARNE: Is this put in because of a legal requirement? Is there a concern?

MR. BICKWIT: It is that way.

COMMISSIONER GILINSKY: It seems to me it is implicit in setting out a specific deadline.

MR. BICKWIT: I gather we are responsible for it.

COMMISSIONER AHEARNE: OGC is responsible.

MR. BICKWIT: You want to make sure that the statutory standard can be met without immediate changes as far as concurrence.

COMMISSIONER AHEARNE: But the problem, Len, is that one of the main reasons for this whole effort is because there is a growing concern that we, in the absence of those plans, we might not -- ought to let the plants

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operate. The presumption is shifting the other way.

MR. BICKWIT: I understand. It just seems that you need something in there to say we will not, because of the absence of a concurred in state plan on the day after these become effective, automatically find that the adequate protection standard is unmet.

COMMISSIONER AHEARNE: Why do we have to say that?

MR. BICKWIT: It is better to say it here than to have to litigate.

CHAIRMAN HENDRIE: So you may be litigating it anyway, but certainly without it --

COMMISSIONER AHEARNE: It is sort of a protection against litigation.

COMMISSIONER GILINSKY: What we are finding is that the adequate protection standard would not be met if you went on indefinitely without these plans, and you are simply saying --

MR. BICKWIT: I wasn't suggesting anything other than that.

COMMISSIONER GILINSKY: It is not going to happen overnight, and we are prepared to live with the situation where it takes six months to do it. It is as simple as that, it seems to me.

MR. MINOGUE: And during that transition, in no case do you have an absence of a plan. It is a question of

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degree — how much it has been upgraded. All of them have been upgraded to some degree. It has already happened.

I think that is part of the problem. It is not a no-go.

MR. BICKWIT: The statements are in conflict, and this can be corrected.

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DR. GOLLER: Another minor change was that the alternative of reducing, in the event the plans were not concurred in, we believe that is not a realistic viable option.

COMMISSIONER AHEARNE: You also don't seem to leave open though any other action, other than to say cessation of operation. It is almost —

DR. GOLLER: We thought operation -

COMMISSIONER AHEARNE: The Commission will make the determination whether the Licensee should cease operation, period.

DR. GOLLER: But with operation, it would go in a number of other changes to compensate.

COMMISSIONER AHEARNE: The recognition is only in that the Licensee may propose alternative compensating actions.

It is the Commission's determination, solely on the cessation of operation.

COMMISSIONER GILINSKY: As opposed to what?

COMMISSIONER AHEARNE: To other corrective actions.

I am asking more of the question, does that foreclose a determination that you could operate that?

DR. GOLLER: If you look at the proposed regulation itself, it says the Commission will make a

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determination whether --

COMMISSIONER AHEARNE: That is what I am reading from.

DR. GOLLER: The next sentence says, "In order to help the Commission make that decision, the Licensee may."

COMMISSIONER AHEARNE: It says "the Licensee may."

My concern is whether this forecloses tthe Commission telling the Licensee, rather than the Licensee helping us make the determination.

I can see, in that particular situation --

MR. MINOGUE: It is the burden of the Licensee to come up with an alternative proposal in detail, rather than us develop them for him.

COMMISSIONER AHEARNE: It does leave open that we could provide direction other than just --

DR. GOLLER: Other than shut down our operating. I am not clear.

COMMISSIONER AHEARNE: He has an operating license, which is in existence. There are requirements in that operating license. And I was concerned that the way the words indicated, that it foreclosed us from making modifications to that operating license.

It only said that you could either leave that operating license or shut the plant down, but there was no intermediate. And that is why I wanted to be clear that I

didn't foreclose them going to some intermediate step.

CHAIRMAN HENDRIE: The Commission can always impose conditions of a temporary nature or a permanent nature by making them license conditions, as it sees fit. And if there is any -- I guess I didn't seem to -- if there is any suggesting in the present language that is not the case, then I suggest a little --

COMMISSIONER AHEARNE: The difference that I thought I saw was that you have the plant operating with this set of conditions.

It seemed, the way I was reading it, is that from our side we had the option of leaving all of those conditions in place or shutting it down. And the Licensee, they have the option of coming in with some compensating actions that wouldn't be part of any requirement on them.

But in some sort of agreement on the compensating actions, we would leave the Licensee intact.

DR. GOLLER: The license would come in with compensating actions. Those would be imposed a license change; or, more specifically, as a technical specification.

MR. MINOGUE: I think the issue is more who would take on the burden of coming forward with the specific ideas.

(Commission Kennedy enters the hearing room at 2:26 p.m.)

DR. GOLLER: The flexibility built into these requirements is important and should be recognized as such.

Some of the background that led to this, such as the congressional proposed bills and so on, were a lot more absolute in this regard. They would have a said a plant will shut down if there was not concurrence.

To this extent, I want to mention that there are some differences of opinion within the Staff as to whether it is wise and proper to provide this flexibility; again, primarily because of the perception that this might give to the Congress and to the public as being a backing away of our hard line stand.

(Commission Bradford left the hearing room at 2:28 p.m.)

DR. GOLLER: The vast majority of the Staff feels that this flexibility provided to the Commission is appropriate and important and that we can't really foresee all of the possibilities and nuances that could come up relative to this kind of an action.

COMMISSIONER AHEARNE: I guess I would like somewhere though, maybe in the statement of considerations or summary or something, to carry through that the presumption nevertheless is that in the absence of the plans, we won't be allowing plants to start operation and, after some reasonable time, not allow them to continue

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operation.

I have no problem with the flexibilities you have there, but I am afraid — maybe it is just that I have all of these in consecutive order.

It does imply I do infer a backing away.

DR. GOLLER: I think there has been some of that as people have faced up to the realities of this more and are foreseeing problems that might occur if that were not provided.

I think in the end it will still be a Commission decision whether a plant should shut down, taking all matters into consideration that can be brought to bear at that time.

COMMISSIONER AHEARNE: It is certainly a very complex issue, because they involve the state-local government relationships and all that.

But I would like that a reader of the final rule would come away, if it is a utility or a state government or local government, that the effort ought to really be put on getting all of those plans in shape, as opposed to the effort going on, why ought not operation be allowed even though the plans aren't?

DR. GOLLER: That was the intent. That is one reason that we mentioned the two possible factors that might be important in this consideration; that is, whether the

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loss of concurrence for some significant reason or not, certainly why concurrence is not granted, or lost; and, secondly, what could be done to offset that.

I think the implication intended there was that plans will be required unless compensating -- compensations can be made.

MR. MINOGUE: One of the problems is a large number of jurisdictions. You can have some eighth order township playing a key role, and a distinct possibility of some alternative might be developed and folded into the plans of other governmental agencies.

The intent was to allow some flexibility to handle that.

DR. GOLLER: The next bullet on this slide was a change from between 591C and 591. It was that the latest versions considerably clarified the applicability to nonpower reactors. The applicability is limited to the Appendix E requirements. Appendix E does refer to the emergency planning zones.

The 10- and 50-mile zones and clearly not applicable to nonpower reactors.

Another proposed rule was published for comment in September which would require nonpower reactors to perform with Appendix E as proposed for the smaller facilities -- that is, those of 500 kilowatts thermal or less that have

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one year to conform; and for those larger than 500 kilowatts thermal -- I'm sorry I had it backwards -- for smaller than 500 kilowatts thermal, they have two years.

COMMISSIONER KENNEDY: To conform to what?

DR. GOLLER: Appendix E, including the figures we are proposing.

CHAIRMAN HENDRIE: The 10-mile zone?

DR. GOLLER: No, the emergency plan zones would be determined on a case-by-case basis for nonpower reactors. This is so stated in the proposed rule.

(Commissioner Bradford returned to the hearing room at 2:31 p.m.)

COMMISSIONER KENNEDY: Where does that leave the nonpower reactor operator? What does he think?

DR. GOLLER: This is an area that will have tobe worked out between the Staff and these Licensees almost on a case-by-case basis.

COMMISSIONER KENNEDY: What is the criteria on which that would be done?

MR. MINOGUE: The problem we have had for years with the nonpower reactors is there is such a wide variation among them, and so many of the hazards come about because of experimental facilities that are unique to those facilities. It doesn't lend itself very well to generic resolution.

The tendency has been to handle them on a case-by-case basis.

DR. GOLLER: There is some guidance provided in Regulatory Guide 2.6 on emergency plans for nonpower reactors for research and test reactors. There is no specific guidance as to emergency plans on sizing, but there is general guidance which could be used to develop these.

MR. MINOGUE: It is general principles that one would consider the specifics. There is so much variation from one reactor to another. It is very difficult to handle these generically.

It is also not an area where there is large potential growth in these facilities.

COMMISSIONER KENNEDY: No, I would think it would be the other way around. I am not sure that that is desirable.

MR. MINOGUE: The trend for years has been for the number of research and test reactors to come down from year to year.

DR. GOLLER: The next item, which was D, and the Commission paper, 591-C, acknowledged that we had proposed to change the comment period on the proposed rule from 45 days to 90 days. This was, at the time the paper was written, thought to be necessary to allow for the workshops, which I will be discussing more later, and to allow for

adequate consideration of the many comments that are expected to be received on this proposed rule change, especially from states and local governments.

However, on the basis of reconsidering, I would hereby like to produce reducing to 60 days. We think that that would be adequate.

And the last item that was identified in 591C —

CHAIRMAN HENDRIE: You want to bid 75?

COMMISSIONER KENNEDY: I like 90.

DR. GOLLER: — was to identify that the revised proposed rule incorporated the NRC's response to the Kemeny Commission report recommendations on public information.

More specifically, it provides for the Licensees to include the news media in their training programs, to advise the public of the radio stations that would carry news and information if there should ever be an incident or an accident, and to provide information to these radio stations in the event of an emergency.

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That pretty well identifies all of the significant or, if that, changes that were made between 591C and 591.

However, I would now like to identify one further l ne of cha ge. On the last page, page 26, which is section 5 on implementing procedures of Appendix E. We would like to propose simply requiring the submittal of 10 copies of the detailed implementing procedures and any changes thereto to NRC headquarters, in addition to the 10 copies to NRC regional offices. A minor administrative change.

MR. MINOGUE: One of the issues that underlies this — the staff has now formulated the proposal on this — is who is going to review the detailed procedures within the staff, whether it is done by I&E or NRR. This leaves that question open basically to be resolved.

MR. GOLLER: Additionally, it was recognized that it would be important to have copies of these detailed plans available at headquarters, particularly to the incident response center and other headquarters support activties in the event of an accident. With this last change it is now my understanding that all affected NRC offices, including OGC and OPE concur with the recommendation to publish these proposed amendments for public comment.

COMMISSIONER AHEARNE: Is this the time to ask, if I disagree, to speak up or forever hold one's peace?

MR. BICKWIT: I have some questions, and how they

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are answered wouldn't affect my recommendation to publish. There are a couple of things that weren't clear to me.

First of all, I wasn't clear whether the guidance in the NUREG documents referenced were to be part of this rule or simply to be referenced as guidance.

MR. MINOGUE: There is a lot of precedent that they are not part of the rule. This is a device that the commission has used over the last few years with some success. It provides a little standing to the NUREG more than if it was just issued as a staff document without giving force of law. Certainly, if some changes indicate in the regulatory guide, and if it is so referenced, we make the change without coming back to the commission. Unless it is a major thing, all of those documents referred to the commission should recognize are not in their final shape.

Out of the ongoing efforts to upgrade the licensee plans, we are going to learn a lot. I expect to find that the shape of the guidance documents will be different.

MR. BICKWIT: Fine. I think that should be made clear. It wasn't clear to me in reading it.

Secondly, the reference to comments, comment periods. Prior to the taking of various actions, I know was put in at OGC's request, but now that it has been determined that these matters are going to be litigated in hearing procedures, if people request hearings, I no longer see the

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need for any comment period either with respect to the concurrence or with respect to the withdrawal of concurrence.

In fact, if you have one, it may lengthen the process and get us into proceduralism to a degree that we would be uncomfortable with it.

MR. GOLLER: I can only respond to that that those were put in at the specific request of OGC.

MR. BICKWIT: I understand that.

MR. GOLLER: They were not —

MR. BICKWIT: They were put in with the understanding that you would not be litigating these issues, that emergency plans were to be written for the entire state and that it would be possible for the NRC to concur in an emergency plan and have that outside the ambit of the hearing. We felt if it was outside the ambit of the hearing, that you needed something in the way of process. If it is to come into the hearing, we don't think you need anything in addition to what you have in the normal process.

MR. GOLLER: We will be happy to refine that in any way that you see appropriate. But it is true that the fact that these plants and these activities would become part of each licensing action and they would be subject to litigation was discussed in detail in the development of

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this last draft with OGC representatives participation.

MR. BICKWIT: Just as you had a misconception as to what an emergency plan was, so did OGC. Now that that is cleared away, we would prefer to take —

MR. GOLLER: That could easily be accomplished.

COMMISSIONER GILINSKY: You may have covered this, but I wonder if you would repeat it if you did. What criteria are these plans going to be approved on the basis of?

MR. GOLLER: The same ones as we have been using, essentially, which are set forth in NUREG-75/111 and the supplement thereto.

COMMISSIONER AHEARNE: That doesn't address local plans very much.

COMMISSIONER GILINSKY: Right. And what I am asking is are you going to be interpreting that more vigorously than in the past?

MR. GOLLER: I will have to let the representative from state programs speak to that. They have done this in the past and would be doing it in the future.

COMMISSIONER GILINSKY: In future they are going to be participating on an group which will be headed by FEMA, as I understand it. Is that not right?

MR. GOLLER: Right.

MR. MINOGUE: That appears to be the direction

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things are going.

MR. SANDERS: I think we also recognize that as a result of what I indicated to you earlier, our guidance checklist, even though it has in the title both state and local plans, that it is not applicable in every respect to both levels of government.

We are now in the process of reviewing and refining that document, and part of the review and refinement and eventual revision of it will take care of this problem. In other words, to separate out those planning elements that are applicable to state government plans only and those that are applicable to local plans only. And of course, there will be a number of planning elements where they will apply to both levels of planning.

COMMISSIONER GILINSKY: What is it that we are requiring? Is there some document that lays it out, or is it the old document together with a new interpretation, or what?

MR. SANDERS: Right now, the only thing we have for the use of both state and local people is the NUREG-75/111.

COMMISSIONER GILINSKY: What standards are we using to approve the plans? The same standards —

MR. SANDERS: That's right.

COMMISSIONER GILINSKY: — That we have been using

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for years?

MR. SANDERS: Right.

MR. BICKWIT: New ones are coming, aren't they?

MR. SANDERS: That's right.

MR. BICKWIT: When?

MR. SANDERS: I would say that probably early in the year we will have our review completed and a new document ready.

MR. GOLLER: But you are taking into consideration emergency planning zones. You are going out greater distances than you did before.

MR. SANDERS: That's right.

MR. GOLLER: You are going out to 10 miles, whereas before you went out to the LPZ, which was typically more like two or three miles.

COMMISSIONER GILINSKY: And you are talking all of the local governments in the area within that zone?

MR. SANDERS: We will be, yes, sir.

COMMISSIONER GILINSKY: You were not before?

MR. SANDERS: That's right. And we are in the process now of not considering the emergency planning zones. We are also requiring the states to have local plans for the host jurisdiction — that is, the host jurisdiction Of the plant, each plant, within the state. So that differs from what I described earlier about practice roughly prior

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to the Three Mile Island accident.

COMMISSIONER GILINSKY: Who is developing the new criteria?

MR. SANDERS: We are, in concert -- that is, state programs is doing it -- in concert with the other national or other fededral representatives who have been cooperating with us in our assistance efforts to state and local governments. And we have also got some comments back from a variety of states.

COMMISSIONER GILINSKY: Are those going to go out for public comment at some point?

MR. SANDERS: Yes, sir, that's right.

COMMISSIONER GILINSKY: Is that what you are planning for?

MR. SANDERS: Yes, sir.

COMMISSIONER AHEARNE: To what extent does FEMA's increased role affect our process?

MR. SANDERS: I think we will be working very closely with them. As a matter of fact, we are doing that now. And of course, we might really be getting into another step here: namely, to codify these voluntary guidelines in the event that we are required to by the legislation. If the Hart bill were passed as it is now standing, we would be required to codify those voluntary guidelines.

COMMISSIONER AHEARNE: At some point we have to

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codify them anyway, if we are going to place a requirement to get a license, getting a concurred-in plan, aren't we? Out of consistency, we have to codify what it takes to get a concurred-in plan?

MR. GOLLER: Yes, as soon as these are developed, we will do just that rather than to refer to them in a footnote as they are now and are not part of the rule as was discussed earlier. These would be put into the body of the rules.

MR. MINOGUE: That is, the guidelines for the state programs rather than the licensee programs.

COMMISSIONER AHEARNE: Yes.

MR. SANDERS: I visualize that those also could take the form of a regulatory guide. In other words, you have Reg Guide 1.101, which is an extension of Appendix E in terms of the licensee's emergeny plan, and we could have a regulatory guide which would incorporate the voluntary guidelines that we now have in NUREG-75/111.

COMMISSIONER GILINSKY: Can I just ask another question. Do you envisage major changes in your requirements or just a kind of a tuneup?

MR. SANDERS: Are you speaking to me, sir?

COMMISSIONER GILINSKY: Yes.

MR. SANDERS: We do not. I think our experience with the voluntary guidelines is that they have by and large

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been pretty well accepted by all who have used them both at the federal level and at the state and local level. So, we do not expect to see any dramatic changes.

COMMISSIONER GILINSKY: You are basically satisfied with the criteria as they are now, of course, taking account of the fact that you think there are some changes that need to be made, but nothing major?

MR. SANDERS: That's right. I think that we will not see any dramatic or drastic changes as a result of our review.

COMMISSIONER AHEARNE: It would be fair to say that while in general you are satisfied with the criteria, you are not completely satisfied with how well they have been put in place?

MR. SANDERS: That is probably a better way of putting it. In other words, how we apply them. In other words, the criteria for applying the planning elements. I think this is understandable because you see we have had roughly eight different federal representatives at the regional advisory committee level working on these things. It is a difficult process to get that many people, and you have got 10 regions involved, all thinking about a planning element for which they might be responsible in the same way. This is where we have been placing a lot of emphasis.

COMMISSIONER GILINSKY: Is the concurrence of the

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interagency group a formal thing, a majority vote, or does every single one of them have to concur?

MR. SANDERS: Yes, every single one of them has to concur. That is, they have to recommend concurrence to us because it is our job in the final analysis to make the concurrence.

COMMISSIONER GILINSKY: But that is the way the process works? It has to be unanimous?

MR. SANDERS: That's right.

COMMISSIONER GILINSKY: Is this written down, or is this just a matter of practice or custom?

MR. SANDERS: I think we do in our handbook. I am not sure about that.

VOICE: A clarification on that. There is a handbook, NUREG-0093/1, which is a workbook for the feds doing the reviews. There are certain agencies assigned specific review responsibilities for the elements in their area of expertise. Those agencies must unanimously agree that the particular element is addressed satisfactorily.

That does not preclude other agencies from reviewing the same element. However, the other agencies not listed as specifically responsible for that would not have to concur, and we would still approve that particular element.

COMMISSIONER GILINSKY: There are eight agencies?

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VOICE: There used to be. There are six now. With FEMA taking into account FDA, A&D, CPA. Those three became one.

COMMISSIONER GILINSKY: There are six agencies reviewing each of these plans or part of them?

VOICE: EPA, DOT, us, DOE, HEW, Food and Drug Administration, and FEMA.

COMMISSIONER GILINSKY: And the changes taking place, with FEMA taking over the chairmanship, is that they run the meeting, I take it, or will they be the ones concurring now?

MR. SANDERS: As far as I know, the only thing that we have formally agreed to is for FEMA to take over the chairmanship of the interagency coordinating committee at the Washington level.

COMMISSIONER GILINSKY: What is the significance of that?

MR. SANDERS: I think the significance is that they would be gradually moving into taking a greater or assuming a greater role in the concurrence process and in the whole assistance effort to state and local government.

COMMISSIONER GILINSKY: Thank you.

I cut you off, Boo. I am sorry.

MR. MINOGUE: I want to make two comments pertinent to what has been discussed.

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I think the commission recognizes that the level of quality of the guidance documents that have been developed in this area far exceeds the level of implementation. So, the fact that some of the guidance documents referred to have been around for a while does not mean that they are not good stuff.

COMMISSIONER AHEARNE: Right.

MR. MINOGUE: Second, I have to comment on the business of codifying the state guidelines. In a reg guide, I don't see that at all. Reg guides are into the licensees and they can get invoked through licensing conditions. I think that the ultimate codification that the guidelines would have to be by whatever agency gave the formal concurrence as this thing finally develops, whether it is FEMA or NRC, to be codified in some way by regulations.

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COMMISSIONER AHEARNE: I have some questions on the rule itself if this is the right place.

DR. GOLLER: I guess this is a good place.

CHAIRMAN HENDRIE: As good as any. Plunge ahead.

COMMISSIONER AHEARNE: Okay.

What is the — you mentioned you have a — what is the right way to — Joe, how would you like to run this process?

CHAIRMAN HENDRIE: Expeditiously.

(Laughter.)

CHAIRMAN HENDRIE: How many more slides do you have to go through?

DR. GOLLER: Three.

COMMISSIONER GILINSKY: Why don't we see the slides?

CHAIRMAN HENDRIE: Let's do a fast flash on the slides, and then let loose with questions.

DR. GOLLER: Next slide, please.

(Slide.)

As we indicated from the beginning, we think it is desirable to have some workshops on this proposed rule. This is true particularly because of the need for cooperation from the state and local governments. These workshops would enable us to present the proposed rule to these governments, to the utilities, and other interested

parties. Most important, it would enable us to obtain comments concerning the costs, impacts, and practicalities of the proposed rule changes, especially from states and local governments.

We tentatively plan to have from three to five workshops in late January or early February. These would be geographically distributed, probably associated with the NRC Regions and probably one in Washington.

COMMISSIONER BRADFORD: These are going to be on this proposed rule, or on the proposed changes as a whole?

DR. GOLLER: On this proposed rule.

COMMISSIONER BRADFORD: Won't you have to do the same thing all over again, once you change the basic criteria for approval?

MR. MINOGUE: Possibly yes. This is a technique the staff has used a number of times with good success.

COMMISSIONER BRADFORD: I am not disputing that workshops are a good idea, but I'm wondering if it doesn't make sense to do them all at once, given that you are going to have two sets of workshops on emergency preparedness within a period of, I assume, a couple of months.

DR. GOLLER: I'm not sure what the other set of workshops is you are talking about.

COMMISSIONER BRADFORD: We just established that the groundrules for NRC concurrence are going to be the old

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ones under this framework, and meanwhile we are developing a new set of groundrules for NRC concurrence as part of a rulemaking to be published for comment in January. Right?

DR. GOLLER: No. We don't really envision a great many changes in those criteria. Those will come about probably as a result of applying this proposed rule during the next year or so.

MR. MINOGUE: Except for the State Programs plan to reissue the checklist in January, as I understand it.

COMMISSIONER AHEARNE: I thought Marshall said early next year.

COMMISSIONER BRADFORD: I was assuming January.

COMMISSIONER AHEARNE: January is early next year, although early next year is not necessarily January.

MR. SANDERS: Give us a quarter, anyway.

MR. MINOGUE: I would visualize the feedback from these workshops as having a big impact on all of the guidance documents for the state and NRC alike.

DR. GOLLER: We have started to make preliminary arrangements for these workshops. The logistics associated with this are significant.

Could I have the next slide, please.

COMMISSIONER BRADFORD: Let me ask the same question differently. We have solicited public comments, and you have summarized them, and they have now come up to

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us. Is this rulemaking our sole response to those public comments?

DR. GOLLER: No, sir. It's not.

COMMISSIONER BRADFORD: What is the further response to the public comments?

DR. GOLLER: As I have already indicated, this is an interim response to those comments.

COMMISSIONER BRADFORD: Right.

DR. GOLLER: We find that this proposed rule is responsive to the bulk of the comments that were received on your advanced notice for rulemaking. There are, however, some areas that are not covered by this proposed rule which were identified in the advanced notice, and there will be some further rulemaking necessary, but that is probably at least a year off.

MR. MINOGUE: Also, I think that the interfaces between NRR and State Programs, as they upgrade licensee and state plans, is going to result in a great deal of improved insights and a better understanding of how to make this rule better in its final version. That is another element of feedback in the current process of upgrading.

MR. BICKWIT: Maybe I am missing something here, but in your earlier SECY paper, it says that the Office of State Programs is conducting a review, and when the review is complete, NUREG-75/111 will be revised, and the

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requirements will be codified.

Does that mean a rulemaking?

MR. MINOGUE: The ultimate codification for state requirements would have to be in rulemaking, whatever federal agency —

MR. BICKWIT: I thought the reference here appeared to be the reference to what would be completed in January. I assumed we would have another rulemaking in January.

MR. MINOGUE: That wasn't the way I took it. I might have misunderstood.

DR. GOLLER: Since this question has come up now, let's skip ahead to the next slide. We will come back to this one immediately thereafter.

(Slide.)

The next slide, labeled "On-going Rulemaking", was intended to point out that the proposed rule is only an interim upgrade. It certainly covers the major deficiencies that have been identified; however, there are other areas. Some of these were identified in the Commission's advance notice of rulemaking, including financial assistance to state and local governments, the federal interface with state and local governments, public participation in radiological emergency response drills, and several others which were questions that were posed to the public and on

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which comments were received.

Other changes that may indicate further rulemaking may be suggested by the NRC Special Inquiry. That is the Rogovin Task Force report and results. The implementation and experience obtained thereby of this proposed rule will undoubtedly be a major contributor to further rule changes. The transfer of lead responsibility to FEMA could likely lead to a need for further rule changes.

The experience from implementing Lessons Learned Task Force recommendations may well indicate further rulemaking. And last, but perhaps most important, will be the development of related documents and activities, including the Hart Bill. The Authorization Bill could put some additional requirements on us or cause us to change the specificity of the requirements as proposed.

Revision 2 of Reg Guide 1.97 on instrumentation to asses plant and environment conditions during and following an accident — development of that Reg Guide could suggest additional rule changes and requirements. The development and application of NUREG-0610 on emergency action levels could suggest changes. Development of Part 70, 30, and 40 facility requirements for emergency planning, I mentioned that these proposed rules apply to the facilities or at least to the Part 70 fuel cycle facilities in part.

But in general, the emergency planning

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requirements for these materials type licensees are just about to be developed with any detail. The development of EPA and FDA requirements, relative to the food chain, the ingestion pathway, thyroid blocking agent requirements could cause changes.

The application and reevaluation of NUREG-75/111 on the development of state and local government plans we have already mentioned is only one.

Now to go back to Slide Seven.

(Slide.)

This is on schedule. I think it is apparent that we cannot make January 1, 1980, for publication of an effective rule change as was proposed a few months ago by —

COMMISSIONER AHEARNE: I guessed it.

(Laughter.)

DR. GOLLER: There will be one possibility, and that would be to publish this, not as a proposed rule but as an effective rule. We are not recommending that. We don't think that that would be appropriate. We think it would upset the states and local governments to a point that would be intolerable.

But perhaps most importantly, we don't think it is necessary that the requirements of this proposed rule are by and large being imposed on the operating plants now by the teams that are out in the field doing this.

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COMMISSIONER BRADFORD: What does that mean with regard to future operating licenses? Will we or will we not be in a posture in which concurred in emergency response plans are required before we issue another operating license?

DR. GOLLER: The answer is that for all practicality, that we would require this before we would issue another operating license in any case; however, we go forward with this schedule that is indicated here. It is also likely we would have an effective rule here which would require that by rule before we would issue another operating license.

COMMISSIONER BRADFORD: You say, "issue another operating license." Not until when, on that schedule?

DR. GOLLER: April or May of next year or later, anytime after this rule is published effective, which according to this schedule would be some time next spring — would require the concurrence of those state and local programs as a condition of issuing the license.

CHAIRMAN HENDRIE: But a condition of issuing the license is not having an effective rule in place. What ought to be a condition of license is whether or not the emergency planning provisions on that particular project meet the requirements that are in these documents and whether we have managed to implement and make effective the

rule that says that by that time is rather another matter, it seems to me.

DR. GOLLER: But here, for example, we pointed out another reason why some of us think that that flexibility that this rule would give the Commission as to whether the plans must be concurred in or not before a license can be issued, or whether a plant must cease to operate, and so on.

I think one can come up with an infinite array of possibilities that would result in a facility being ready for a license, adequate emergency plans being in place. But for some reason, some administrative reason, possibly some financial reason, they are not concurred in, and that detail would preclude issuance of that operating license if this flexibility were not built into the rule.

The rule as proposed would allow the Commission to make that decision for good cause if indicated.

COMMISSIONER BRADFORD: I would have thought that we had told one or more Congressional Committees in the not too far distant plans, that we didn't plan to issue any more operating licenses without concurred in response plans. Am I wrong in that?

COMMISSIONER AHEARNE: Well we told one Congressional — that is all five of us agreed to — quite recently, November 1 — that we would not allow a new plant to be built anywhere where people within the ten mile zone

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can't be evacuated in time of an emergency.

COMMISSIONER KENNEDY: That was the answer to a different question.

COMMISSIONER BRADFORD: But that, in fact, would go further. But the question would be, how do you know, if you haven't concurred in the response plan whether you can do that or not.

CHAIRMAN HENDRIE: I don't remember. It is possible we have, and I must say as I look down the line at the near-term OLs, I don't see that being a problem.

COMMISSIONER BRADFORD: It may well not be. I do want to make clear, be sure that we are reconciling what we are proposing to do here with what we have recently testified.

MR. MINOGUE: I read through the transcripts of the various testimony that the Commission has given. I don't recollect that exact statement being made as a Commission statement. I recollect vaguely a reference to a staff proposal to that effect, which is not the same thing.

COMMISSIONER GILINSKY: Even if it is not a problem for any of the upcoming operating plants that are seeking operating licenses, I am still a little concerned about the way you describe the approval process for emergency plans, as if it somehow is a formality which doesn't necessarily have to be carried through fully. I

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mean, I understand leaving some flexibility, and after all, we have exceptions from regulations and exercise them occasionally, but you just got through saying that from now on emergency planning is going to be on a par with the design review and the siting, and you wouldn't speak about parts of that review and approval process in quite the same way, I wouldn't think.

DR. GOLLER: Well, the regulation specifically states that no operating license will be issued unless the emergency response plans within the plume exposure, EPZ, have been concurred in by the NRC unless the applicant can demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken.

COMMISSIONER AHEARNE: For an example, one way that — just an example of the way that I think it would come across clearer is if you put a period at the end of "no license will be issued", and then go on to say that in the absence of the concurred in plan, the licensee may come to the Commission to demonstrate this. It just wouldn't go automatically into the licensee having —

DR. GOLLER: I think we can do that. I might point out that in the other two options, A and B, that is exactly the way we did it, if you recall.

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MR. MINOGUE: There is a lot of stuff in this rule. There is one piece of it you can pull out and look at in very simple terms, and that is the requirement to concur in the state plans, and that can be said just as strongly as you want to say it without the reservations that some of us feel when they begin to look at the details or what the plans look like and the changes in Appendix E. That is where you begin to be a little less sure of yourself.

But the idea of saying we are not going to license unless you have a concurred in state and local plan seems to me manageably a second issue and one that can be moved forward quite promptly to rulemaking. And you can dispose of that question without having every i dotted and ever t crossed and all of the other detailed elements.

The reason we are all uncomfortable in this discussion is because we are looking at this enormous problem. In the middle of it is one that is fairly manageable which is the question of the concurrence rule.

DR. GOLLER: The next slide, please.

(Slide.)

In conclusion, in order to further the ongoing rulemaking process on emergency planning and preparedness that we are in, we would recommend and request that the Commission approve publishing the proposed interim rule changes in the Federal Register for public comment, the point being that we are going out for public comment. This is a proposed rule. We will have an opportunity to make refinements, not only as indicated by public comment but as perceived and identified by the staff and others in the next few months.

CHAIRMAN HENDRIE: Very good. John?

COMMISSIONER AHEARNE: Starting on page one, I think we have — let's start with 591C. That is the latest version. The point that we have just been talking about in 1 where you say "require that appropriate" -- "be reviewed and concurred in", I would prefer that to be two separate sentences, to separate out that part. Under 1.a you have a state —

MR. BICKWIT: Excuse me. You are looking at the statement of considerations.

COMMISSIONER AHEARNE: I am looking at 591C. The first page of 591C is a paper from Robert Minogue. The second one is a page that is signed by Robert Minogue. The

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third page which is number 1, enclosure (a), is what I am looking at.

DR. GOLLER: I understand. I want to see whether it was the way you wanted it in the rule itself. It is not as far as issuing an operating license is concerned. I believe it is in the others. Yes. If I can ask you to look at pages 14 and 15, here we are talking about plants that are operating now that have to submit such plans.

Toward the bottom of the page, there it says --

COMMISSIONER AHEARNE: It is that type of separation that I was also looking for up there.

DR. GOLLER: Fine. We can do that.

MR. MINOGUE: Yes.

COMMISSIONER AHEARNE: I believe myself that it should be the NRC and FEMA concurring in the plan.

DR. GOLLER: I have to wonder to what extent we would have to get FEMA's formal agreement to do this and what might be involved, particularly time-wise, in doing that.

COMMISSIONER KENNEDY: As a practical matter in the way these things work in the Interagency Committee, if we do not, FEMA will not. Isn't that correct?

DR. GOLLER: Yes, sir.

COMMISSIONER AHEARNE: Similarly, I think if FEMA does not, we will not, and therefore we might as well say

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NRC and FEMA. If your point is that we shouldn't commit FEMA, I would be certainly -- my position would then be to ask the Chairman to call Mr. Macy, and if Mr. Macy says he has great problems with us putting it in and if he says fine, then would that eliminate your concern?

MR. BICKWIT: We are not committing FEMA.

MR. MINOGUE: There are several ways to do it. The way we had in mind was not to speak to FEMA but to identify them to leave the door open. If they are willing to put themselves in the rule, I certainly would.

DR. GOLLER: It seems to me this is your intent, to do this, but again, you could get into the situation sometime in the future -- and I can dream up many scenarios where FEMA, for whatever reason, might not be in a position to concur in these plans. And for some reasons, if you want to move forward, then you would have yourself locked yourself out.

CHAIRMAN HENDRIE: I think the OPE statement of consideration paragraph, to go in on page five, elaborates sufficiently for the purposes of this rule. At this stage, I would be reluctant to try to draft into the rule itself precisely FEMA concurrence without knowing what John Macy and his people -- how they want to treat it. What would concurrence mean from their side? The regional councils, whatever.

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COMMISSIONER GILINSKY: Isn't that something that can get explored during the comment period?

CHAIRMAN HENDRIE: I would think so.

DR. GOLLER: Because it was identified in the statement of considerations, it would seem to me that that would not be a major change. It is something that could be worked in.

COMMISSIONER AHEARNE: Can I ask the lawyers? Or maybe Bob probably knows more about writing standards than the lawyers.

MR. BICKWIT: Wait a minute.

(Laughter.)

COMMISSIONER AHEARNE: The question is, given the way it is worded now with the OPE paragraph, if during a comment period we and FEMA agree that it should be a joint concurrence, could we just make that -- could we make that change in the rule and going final with this version of the proposed rule?

MR. MINOGUE: When I was signing this paper, that was a point that I looked for specifically to make sure that the latitude was there. I am not a lawyer, but I think the latitude is there.

MR. BICKWIT: I think so.

COMMISSIONER AHEARNE: My other comments on page one -- on 1.a, you have "state or local concurrence." I

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assume it is state "and" local?

DR. GOLLER: Yes, it is.

COMMISSIONER AHEARNE: And I would prefer the 180 days.

COMMISSIONER KENNEDY: 180?

COMMISSIONER AHEARNE: Yes, instead of January 1, 1981, primarily because I think we have now -- there are enough 180 day statements around that I feel a lot more comfortable with the statement, 180 days.

COMMISSIONER KENNEDY: When will the staff develop the proposed internal criteria that will be necessary to make the judgments that 1.a calls for?

MR. MINOGUE: State plans? The only document I am familiar with is what was discussed earlier. It would be ready early next year to be codified.

COMMISSIONER KENNEDY: That would be sometime in time to be applied when this document becomes effective.

MR. MINOGUE: You would have to have something like this in a more organized way before this could be an effective rule. That runs through the whole thing. There are similar needs to update some of the guidance for the licensees.

COMMISSIONER KENNEDY: It would be well if we had a chart which described those needs and precisely the dates on which they were going to be met.

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DR. GOLLER: Until that becomes available and this is going on now, the existing Reg Guide 70-something-III can be and is being used as was already brought out, the relevant NUREG document, the relatively small refinements thought to be necessary. These would be coming out early next year.

MR. MINOGUE: Reg Guide 101 speaks to the licensees — would depend on some of the Lessons Learned from Grimes. I don't foresee that much difficult doing this. It is basically a sound document.

COMMISSIONER AHEARNE: I have no other comments on page one.

COMMISSIONER BRADFORD: What is the status, then, of Item 1? Bob, you said I guess this is 1 period, without 1.a. You had said that it was possible to make this a discrete item.

MR. MINOGUE: What I was trying to say, I think that the level of backup detail that is needed for the Commission to take a final action on requiring this effective rule requiring the concurrence of the state in state plans is less of a difficult than getting all of the details, supportive material, dealing with the substantive content of licensee plans — the Appendix E type stuff.

I think there are levels of difficulty within this package, and the least difficult part of the package is the

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part that deals with the concurrence in licensee plans. I think that is also the one that has the strongest public feeling, that some real action is required.

COMMISSIONER BRADFORD: So we are proceeding on a basis in which this is the effective Commission policy for new licenses, even though it will not be finally in the rules until we have a final rule out of this proceeding?

MR. MINOGUE: The NRR people are working, and the State Programs people are working with the licensees and the states right now to upgrade their plans. Yes. In the general direction that this rule points.

COMMISSIONER BRADFORD: I have no objection to your other point. Are we going to vote one way or the other as we go along regarding 180 days?

COMMISSIONER AHEARNE: I would.

COMMISSIONER BRADFORD: Fine.

COMMISSIONER AHEARNE: Anyone else interested in 180 days versus January 1, 1981?

DR. GOLLER: You would be put in the situation where you would have to exercise this flexibility that we have been discussing so much this afternoon.

COMMISSIONER AHEARNE: I well understand that. I also recognize that the Congress may put us in a position where we will be —

CHAIRMAN HENDRIE: Let me ask, because there seem

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to be a large number of comments, whether a word -- questions about words and phrases and so on couldn't be circulated among the offices and we couldn't see for the remainder of this afternoon if we could not try to hit major points, as Commissioners may perceive those, to be sure?

COMMISSIONER AHEARNE: Fine.

CHAIRMAN HENDRIE: And then after this meeting, I would hope we could have an early exchange of any language changes proposed, and I will try to keep track of the situation and see if we need to come back to a meeting in a week or two to resolve differences, or whether the iteration around the floor can sort those out. How does that strike you?

COMMISSIONER AHEARNE: That sounds just fine.

CHAIRMAN HENDRIE: I am afraid, if we go a word at a time through this, we aren't going to get there this afternoon.

COMMISSIONER AHEARNE: That is agreeable to me. I think that narrows my questions down then to probably one general one and one specific one. The rest of it really -- in fact, most of my other questions were based one -- I think I sent all of you a list of questions and comments which were actually based upon the earlier 591, and many of them still reflect over into this.

Then I would only have two basic questions. One

would be, why not expand the concurrence to also the ingestion pathway with a recognition that the ingestion pathway requirements would be less specific and certainly any time action being required in that region would be over a longer duration of time.

The rule as written focuses specifically on the plume pathway rather than the food ingestion pathway.

COMMISSIONER KENNEDY: I also had that question.

MR. MINOGUE: The number of jurisdictions that are potentially involved —

COMMISSIONER AHEARNE: I recognize that there are an enormous number of jurisdictions. On the other hand, I am afraid that our requirement has to be not on how hard is it to be done, but rather should it be done.

COMMISSIONER KENNEDY: We have the NRC/EPA Task Force.

DR. GOLLER: Indirectly, the ingestion pathway is a requirement. It is pulled in in the requirements of Appendix E indirectly.

COMMISSIONER AHEARNE: But I didn't see any explicit recognition that we ought to be requiring those local jurisdictions that are in that 50 mile zone to have planning on the food ingestion problem.

DR. GOLLER: One of the reasons for that is that our guidance and criteria for that zone are in consideraoly

less final a state than they are for the ten mile. There are some important pieces still missing that are forthcoming from other federal agencies, particularly EPA and the Food and Drug Administration.

MR. MINOGUE: This could be addressed with the state government itself, at least to some extent, on a generic basis. It is a pretty large circle.

COMMISSIONER AHEARNE: I realize that. It is very large.

CHAIRMAN HENDRIE: I don't think you can deal with local, every village and county out to 50 miles around all of these sites. If anything ever happens that causes a release large enough to be of interest from an ingestion standpoint, it is state departments of health that have full powers to take the kinds of actions that are appropriate, and they are the appropriate level of government to do it when you talk about local planning for ingestion pathways in the village of Podunk, 47 miles from a site.

COMMISSIONER KENNEDY: If that is what we intend, that is what the rule ought to say.

MR. MINOGUE: I get the point. Let me ask Karl if we can put some clarifying wording that says we look to state plans out to 50 miles.

MR. JAMGOCHIAN: I would like to try to address that question. A number of comments have come up, at least

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one, and we did look to that question. Why not look for a concurred in plan out to 50 miles?

I would like you to focus not on the ten or 50 miles, not on the numbers. The word "concurred", what does that really mean?

Basically it means that 70 elements in a plan have been checked off, that the states and local governments meet those 70 elements. Within those 70 elements, there are one or two that talk about the ingestion pathway, the 50 miles. What you want is governmental entities within only 10 miles to meet 70 elements, one of which speaks to getting your ducks in line, the food pathway out to the 50 miles, so try not to focus on the numbers, ten or 50, in concurrence. But what do you get? What do you buy when you get the concurrence?

COMMISSIONER AHEARNE: When I started my question, I said recognizing that what would be required for the 50 mile zone would be different than for the ten mile zone. All I am trying to do is get the rule to say what it is that we are going to end up —

MR. MINOGUE: It says — I think saying "state" is clearer.

COMMISSIONER AHEARNE: If it is a state that people want to focus on for those, then I think we ought to say so. But I do believe that we have to address something

about that 50 mile zone. The way it could be read is that although elsewhere we have said that the 50 mile zone is important, as far as the rule is concerned, it is hard to see that.

MR. JAMGOCHIAN: In pointing to that, we have to restructure concurrence. You then have a concurrence for the plume exposure pathway, and you have a concurrence --

COMMISSIONER AHEARNE: We now have concurrence with plume exposure pathways --

MR. JAMGOCHIAN: Which encompasses the ingestion pathway.

COMMISSIONER AHEARNE: In the ten mile.

MR. JAMGOCHIAN: Right.

COMMISSIONER AHEARNE: The second question, the more specific one. I am concerned about the commitment that four of us made to Mr. Fithian. I would like to make sure that I understand if this proposed rule meets that commitment, because it wasn't that explicit to me, or whether your position is that that is to be met with some other mechanism?

MR. MINOGUE: Let me tell you what I think, what it means, and correct me if I'm wrong. I understood it to mean that within that circle, in any sector under some combination of circumstances or some combination of sectors, you would have to have the capability of appropriate

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evacuation on the necessary time frame -- not that you would be able to evacuate everybody within ten miles radius at exactly the same time regardless of the circumstances.

COMMISSIONER AHEARNE: My interpretation would be that you might have to evacuate the bulk of the people within ten miles in an emergency.

MR. MINOGUE: Over a 360 degree circle.

COMMISSIONER AHEARNE: If that was the appropriate action.

MR. MINOGUE: I am not sure this fully reflects this, then. This contemplates variations in meteorology, variations in population distributions, and so on.

COMMISSIONER AHEARNE: Sure. And the question was somewhat general, and I think our answer -- very explicit, yes -- was based on that being somewhat general. It still carries with it the idea that instead of talking about the LPZ, we are going out to the ten mile zone. If you can't evacuate a site in that ten miles in the time of emergency, these are reasonable type words, that we wouldn't allow a plant to be constructed there.

DR. GOLLER: There is certainly nothing in the proposed rule that precludes that.

COMMISSIONER AHEARNE: I understand that.

MR. MINOGUE: There is wording in here about variations in demographic factors and meteorology and access rights.

COMMISSIONER KENNEDY: If that is what you are going to require, that is what your objective is, then the licensee and the state and local jurisdictions ought to understand that. The rule ought to be clear that is the criteria. If you are going to measure it, then they ought to know that.

MR. GOLLER: I think the people from State Programs could be more specific on this. But I suspect that up until now, the intent has been to look more at area sectors with the capability of moving in the other direction as the wind would change. But time is all-important. That was not mentioned in any of the answers from Congressman Fithian.

COMMISSIONER AHEARNE: I understand that. But I guess one of the language changes I will be proposing is to try to put in there something that I think tracks with what our answer is.

MR. GOLLER: Another difference between what was discussed in that hearing was that the word "evacuation" was used, and I am not sure that that was used advisedly in every case, as opposed to "appropriate emergency planning measures."

COMMISSIONER AHEARNE: The question really was evacuation and the answer was evacuation, whether or not --

certainly I answered the question recognizing that the question was evacuation.

MR. GOLLER: Again, time is the answer. It can be done if there is adequate time. Conditions could be such that that might not be the appropriate thing to do. Some kind of sheltering or something, because there is not enough time, would be more desirable.

COMMISSIONER AHEARNE: The heart of the question is when the NRC considers a site, is it going to take into consideration as a major factor whether or not that site, for the ten miles, can be evacuated in an emergency.

MR. MINOGUE: The prospective question is fairly straightforward. The present demographic criteria in 4.7 already go a long way toward taking care of that automatically. The issue I am expressing concern on is that, back to the operating plants and the recognition that some of the sites that were reviewed and licensed in the late 60s and early 70s --

COMMISSIONER AHEARNE: One of the word changes I will be proposing, the way the rule is written, is that once a plant is now in the construction process, we aren't going to be reviewing it until it comes to the operating license. Previous versions had explicitly -- I think it is implicit in the present version of C, and I will be proposing a word change to say that. It may not be true on a case by case

basis. I think on some plants we have to review.

MR. MINOGUE: I would like to make a point. I think it is important that you recognize that the question we are discussing now has to be seen in the context of the revisions to the siting criteria. There is one element that is in this rule. The site-specific factors are now seen as being related to emergency planning and not as to site acceptability.

COMMISSIONER AHEARNE: Yes.

MR. MINOGUE: Some of the issues have transferred out of siting criteria into here.

COMMISSIONER AHEARNE: Yes, certainly.

By the way, I think you have done a very good job. I am very pleased with the progress. It is excellent.

COMMISSIONER GILINSKY: Does that cover both the general and specific points?

(Laughter.)

COMMISSIONER AHEARNE: Actually, yes.

COMMISSIONER KENNEDY: We are going to circulate comments. I won't have anything more to say.

COMMISSIONER GILINSKY: All right, good enough.

COMMISSIONER KENNEDY: I have several.

COMMISSIONER GILINSKY: I have only one question, which concerns implementation. You have a little section here on the actions, assessment actions. Are the requirements for the instrumentation that is essential for assessing

radiological releases and such things -- you count on that being laid out in the PSAR, FSAR?

MR. MINOGUE: That is covered in terms of the general requirement in here.

MR. GOLLER: You were given an advanced copy, draft of the reg guide --

MR. MINOGUE: No, no, the specific requirement that has to be covered is in this rule. The detailed guidance on the instrumentation is not in the Reg Guide 1.101 or the NUREGs that are referenced. It is in 1.97, which is a guide that we are quite far along on, that would look to questions as to how the person in charge of the emergency determines the condition of the facility as it might affect planning on any actions taken in an emergency response; and, second, the instrumentation required in the requirement to determine the extent of releases and public exposure.

The detailed requirements will be covered in Reg Guide 1.97. The general requirement is in this package.

MR. GOLLER: If you would look on page 21.

COMMISSIONER GILINSKY: The assessment actions.

MR. GOLLER: Those would be supported by this Reg Guide 1.97.

MR. MINOGUE: It speaks to in-plant conditions and also on-site and off-site environmental monitoring.

COMMISSIONER GILINSKY: It says the emergency

action levels will be based on in-plant conditions and instrumentation in addition to on-site and off-site monitoring.

MR. MINOGUE: Do you know the schedule of that? There is a draft that has gone as far as review and approval by the ACRS. It is about to go out for public comment.

MR. GOLLER: That is the status of it. You have a copy of it as Enclosure H to 591. There is a detailed reg guide on environmental monitoring instrumentation.

MR. MINOGUE: The quality is spotty in this sense. It is better in terms of the instrumentation to determine the condition of the plant than it is in the environmental monitoring. In terms of the detailed guidance in the licensee area, the environmental monitoring one is the one where we are probably the least far along.

COMMISSIONER GILINSKY: But it is covered in a separate document?

MR. MINOGUE: It is in a separate document. There is also a reg guide already out on meteorological models that we'll use to assess planned distribution of environmental monitoring networks. We put that out last June.

MR. GOLLER: The reg guide we are talking about is a revision. There is a reg guide out on this which does a pretty good job with Revision 2.

COMMISSIONER GILINSKY: Does the revision take into account, so to speak, the lessons of Three Mile Island?

MR. MINOGUE: The original 1.97 was watered down from an earlier guide that didn't go nearly far enough. Yes, the revision does take into account the Three Mile Island.

COMMISSIONER GILINSKY: I don't have any other comments.

MR. JAMGOCHIAN: Can I make a point?

COMMISSIONER GILINSKY: Yes.

MR. JAMGOCHIAN: Commissioner Ahearne, you focused on the Moffett testimony concerning the ability to evacuate out to ten miles. I was at that testimony and it concerned me and other members of the EPA/NRC Task Force. When the EPA/NRC Task Force was written, it specifically states in there that detailed evacuation plans are not necessarily out to ten miles.

COMMISSIONER AHEARNE: I understand that.

MR. JAMGOCHIAN: We focused on the ability to take protective measures, not evacuation.

COMMISSIONER AHEARNE: I understand that.

MR. JAMGOCHIAN: Thank you. That's it.

COMMISSIONER AHEARNE: I knew that when I answered the question.

MR. SANDERS: I don't know, Commissioner Gilinsky, whether you bought the idea of reducing the comment period to 60 days. If that is the sense of the Commission, I think State Programs would like to register some concern that we

probably will have difficulty in mounting the workshops, considering that you have got to line up state and local people in that period. So we would vote for the 90-day period.

COMMISSIONER GILINSKY: Thank you.

I suppose the situation is that we will exchange comments. I would suggest a week. Does that seem reasonable?

COMMISSIONER AHEARNE: Next Monday.

COMMISSIONER KENNEDY: A week for resolution of them or issuance of them?

COMMISSIONER GILINSKY: Sounds good to me.

COMMISSIONER KENNEDY: Which?

(Laughter.)

COMMISSIONER AHEARNE: You mean next Monday.

COMMISSIONER KENNEDY: Resolution of them by next Monday.

COMMISSIONER GILINSKY: Does that sound too tight, Peter?

COMMISSIONER BRADFORD: Remember, this is not a week between now and next Monday. It is a weak week, not a strong weak.

COMMISSIONER GILINSKY: I would still try for something like Tuesday.

COMMISSIONER AHEARNE: Monday we have the other issue.

COMMISSIONER KENNEDY: Tuesday.

COMMISSIONER AHEARNE: All right.

COMMISSIONER GILINSKY: Let's set it for then, and work hard to achieve that.

MR. GOLLER: On Mr. Sanders' last point, on the comment period, we would appreciate very much if we could get the Commission's guidance on this. It was --

COMMISSIONER GILINSKY: You will get it.

MR. GOLLER: The only reason for shortening it was we wanted to be responsive to the Commissioners' directions to expedite as much as possible. That was a minimal time. We would be happy to make it any time period you direct.

COMMISSIONER GILINSKY: Fine.

COMMISSIONER KENNEDY: If we got started tomorrow working on the workshops which are going to occur in any event, maybe that would be helpful. We have to wait for that.

MR. GOLLER: We have already started preliminary arrangements for this. One of the problems, as I understand, is finding the money. There is something like a quarter of a million dollars involved.

MR. HANRAHAN: One last point. I think a lot of discussion suggested needs for very strong continued coordination among the various staff elements involved in all this. In the review of the public comment, you have the putting the final rule in place, and then the implementation of that. I think that is something that needs to be sure that there is

attention to that coordination.

COMMISSIONER GILINSKY: I think that is great.

I would suggest we take a couple of minutes and then meet again to discuss Peter's memorandum on the citizens advisory committee.

e-12 (Whereupon, at 3:45 p.m., the meeting was adjourned.)

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changes

G. MAINTAINING EMERGENCY PREPAREDNESS

Provisions to be employed to ensure that the emergency plan, its implementing procedures and emergency equipment and supplies are maintained up to date shall be described.

H. RECOVERY

Criteria to be used to determine when to the extent possible, 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, 10 copies each of the applicant's detailed implementing procedures for its emergency plan shall be submitted to NRC Headquarters and to the appropriate NRC Regional Office. Within 60 days after the effective date of this amendment, licensees who are authorized to operate a nuclear power facility shall submit 10 copies each of the licensee's emergency plan implementing procedures to NRC Headquarters and to the appropriate NRC Regional Office. As necessary to maintain them up to date thereafter, 10 copies each of any changes to these implementing procedures shall be submitted to NRC Headquarters and to the same NRC Regional Office within 30 days of such changes.

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PUBLICATION OF PROPOSED RULE CHANGES

ON

PLANS FOR COPING WITH EMERGENCIES

AT

PRODUCTION AND UTILIZATION FACILITIES

IN

10 CFR PART 50, SECTIONS 50.33, 50.54 AND APPENDIX E

BACKGROUND MILESTONES

- EPA/NRC TASK FORCE REPORT
- GAO REPORT ON EMERGENCY PLANNING AROUND NUCLEAR FACILITIES
- NRC SITING POLICY TASK FORCE REPORT
- SENATE BILL S.562
- HOUSE REPORT 96-413 ON EMERGENCY PLANNING AROUND NUCLEAR FACILITIES
- NRC EMERGENCY PLANNING TASK FORCE REPORT
- COMMISSION POLICY STATEMENT

PAPERS TO COMMISSION

SECY-79-

591 - OCT. 26 - ORIGINAL PAPER WITH SUPPORTING ENCLOSURES (EXCEPT F)

591A - NOV. 3 - ADDED PROPOSED RULE TO CLARIFY APPLICATION OF 10 CFR 50 APPENDIX E TO OPERATING PLANTS

591B - NOV. 13- TRANSMITTED ANALYSIS OF PUBLIC COMMENTS ON ADVANCE NOTICE (ENCLOSURE F)

591C - NOV. 16- TRANSMITTED MODIFIED FEDERAL REGISTER NOTICE (ENCLOSURE A)

BASIC PROPOSED RULE CHANGES

1. NRC CONCURRENCE IN STATE OR LOCAL EMERGENCY PLANS

   A. OPERATING PLANTS CEASE OPERATION IF PLANS NOT CONCURRED IN

   B. PLANTS CEASE OPERATION IF PLANS EVER LOSE CONCURRENCE

2. REQUIRE EMERGENCY PLANNING ZONES (EPZ'S)

3. SUBMITTAL OF DETAILED IMPLEMENTING PROCEDURES

4. CLARIFICATION & EXPANSION OF 10 CFR 50 APPENDIX E

CHANGES IN SECY-79-591c FROM -591

- CLARIFICATION AND EDITORIAL CHANGES IN FEDERAL REGISTER NOTICE
- PERIOD FOR CONCURRENCE FOR OPERATING PLANTS CHANGED FROM 180 DAYS TO JANUARY 1, 1981
- IF PLANS NOT CONCURRED IN, APPLICANT/LICENSEE MAY ATTEMPT TO DEMONSTRATE DEFICIENCES NOT SIGNIFICANT OR COMPENSATING ACTIONS TAKEN
- CLARIFIES APPLICABILITY TO NON-POWER REACTORS
- EXTENDS COMMENT PERIOD ON PROPOSED RULE FROM 45 TO 90 DAYS
- INCORPORATES NRC RESPONSE TO KEMENY REPORT RECOMMENDATIONS CONCERNING PUBLIC INFORMATION

WORKSHOPS

- PRESENT THE PROPOSED RULE CHANGES TO STATE, UTILITIES AND PUBLIC
- OBTAIN COMMENTS CONCERNING COSTS, IMPACTS AND PRACTICABILITY
- NOW DEVELOPING DETAILS

SCHEDULE

DEC. '79	PUBLISH PROPOSED INTERIM UPGRADE OF RULES ON EMERGENCY PLANNING AND PREPAREDNESS IN FEDERAL REGISTER
JAN. FEB. '80	HOLD PUBLIC WORKSHOPS
FEB. '80	COMMENT PERIOD CLOSES (BASED ON 60 DAY PERIOD)
MAR. '80	ANALYZE COMMENTS & DEVELOP EFFECTIVE RULE CHANGES
APR. '80	SUBMIT EFFECTIVE RULE CHANGES TO COMMISSION

ONGOING RULEMAKING

PROPOSED RULE CHANGES WOULD PROVIDE INTERIM UPGRADE OF NRC EMERGENCY PLANNING REGULATIONS

WOULD ADDRESS MAJOR AREAS THAT HAVE BEEN IDENTIFIED AS DEFICIENT

ADDITIONAL AREAS IDENTIFIED IN ADVANCE NOTICE

OTHER APPROPRIATE CHANGES EXPECTED TO BE IDENTIFIED

REQUEST THAT THE COMMISSION APPROVE PUBLISHING THE PROPOSED

INTERIM RULE CHANGES ON EMERGENCY PLANNING & PREPAREDNESS

IN THE FEDERAL REGISTER FOR PUBLIC COMMENT

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

November 16, 1979 SECY-79-591C

INFORMATION REPORT

For: The Commissioners

Thru: Lee V. Gossick
Executive Director for Operations

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

Subject: A MODIFICATION TO THE FEDERAL REGISTER NOTICE AND THE PROPOSED AMENDMENTS TO 10 CFR PART 50, AND APPENDIX E, PLANS FOR COPING WITH EMERGENCIES AT PRODUCTION AND UTILIZATION FACILITIES

Purpose: To modify the wording in the Federal Register Notice and the proposed rule changes (SECY-79-591 and 591a) that would incorporate comments submitted to the staff by OGC, OPE and other Offices.

Discussion: SECY-79-591 contains proposed changes to 10 CFR Part 50, Section 50.33 and Section 50.54, as well as clarification and expansion changes to 10 CFR Part 50, Appendix E. SECY-79-591a added a requirement that the proposed new Appendix E be backfitted to all operating plants. SECY-79-591b, submitted Enclosure F to SECY-79-591, "Preliminary Analysis of Public Comments."

Since preparation of SECY-79-591, there has been considerable interaction between the staff and OGC and OPE. This interaction has resulted in overall agreement that the Federal Register Notice and the proposed rule changes should be reworded for clarification purposes. Therefore, Enclosure A is forwarded to provide a complete replacement to Enclosure A in SECY-79-591.

Other than clarification and editorial changes, the Commission should be aware of the following changes:

A. The 180 days that was originally specified as the time limit for State and local governments to have concurred in emergency response plans before the Commission would consider whether an operating plant should be shut down has been extended to January 1, 1981. This extension is a result of a more realistic assessment by NRR and OSP of the work effort necessary.

B. Both the previous and the modified proposed rule changes provided that if the appropriate State and local government emergency response plans around a nuclear power plant do not warrant NRC concurrence (or if NRC withdraws it), the Commission will make a determination whether operation will be licensed or

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SECY NOTE: This subject is scheduled for a Commission meeting on November 19, 1979. The response sheet provided for SECY-79-591 should be used to respond to Attachment A.

the licensee should cease operation. The modified proposed rule changes specifically provide that a licensee may attempt to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken.

C. The applicability of the proposed rule changes to non-power reactors has been clarified.

D. The comment period was extended from the 45 days previously suggested by the Commission to 90 days in order to allow time for the public workshops.

E. NRC response to the Kemeney Report recommendations concerning news media personnel have been incorporated.

Cost Estimates: This addition does not change the cost estimates projected in SECY-79-591.

Coordination: Representatives of the Offices of NRR, IE, SP, ELD, NMSS, OGC and OPE participated in the preparation of this modified proposed Federal Register Notice and rule changes. Time did not permit obtaining formal concurrences from these Offices on these modifications. The Office of Public Affairs will prepare a public announcement.

Robert B. Minogue

Robert B. Minogue, Director
Office of Standards Development

Enclosure:
"A" - Replacement Enclosure A
to Enclosure A in SECY-79-591

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NUCLEAR REGULATORY COMMISSION

[10 CFR Part 50]

EMERGENCY PLANNING

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Proposed Rule Changes

SUMMARY: The Nuclear Regulatory Commission, after considering the public record available concerning licensees, State and local government emergency preparedness and the need to enhance protection of the public's health and safety, is proposing to amend its regulations to provide an interim upgrade of NRC emergency planning regulations as follows:

1. Require that the appropriate State and local governmental emergency response plans, be reviewed and concurred in by the NRC as a condition of operating license issuance unless an applicant can demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken. Additionally:

    a. Requre a licensee to cease operation of a nuclear power reactor if appropriate State or local emergency response plans have not received NRC concurrence by January 1, 1981, unless the licensee can demonstrate to the satisfaction of the Commission that the deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken.

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b. Require a licensee to cease operation of a nuclear power reactor if appropriate State or local emergency response plans do not warrant continued NRC concurrence and the State or locality do not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal unless the licensee can demonstrate that the deficiencies in the plan are not significant for the plant in question or that alternative compensating actions have been or will be taken.

2. Require that emergency planning considerations be extended to "Emergency Planning Zones."

3. Require that applicants' and licensees' detailed emergency planning implementing procedures be submitted for NRC review.

4. Clarify and expand 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities."

DATES: Comments should be submitted on or before (90 days after publication).

ADDRESSES: Interested persons are invited to submit written comments and suggestions on the proposed rule changes and/or the supporting value/impact analysis to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch. Copies of the value/impact analysis and of comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C. and at local Public Document Rooms. Single copies of the value/impact analysis and the NRC staff analysis of the public comments received may be obtained on request.

1432 097

FOR FURTHER INFORMATION CONTACT: Mr. Michael T. Jamgochian, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 (phone: 301-443-5966)

SUPPLEMENTARY INFORMATION: In June 1979 the Nuclear Regulatory Commission began a formal reconsideration of the role of emergency planning in assuring the continued protection of the public health and safety in areas around nuclear power facilities. The Commission had begun this reconsideration in recognition of the need for more effective emergency planning and in response to reports issued by responsible offices of government and its Congressional oversight committees.

By memorandum dated July 31, 1979, the Commission requested that the NRC staff undertake expedited rulemaking
on the subject of State and local emergency response plans and those of licensees. The proposed rulemaking described in this notice responds to that request, and has been prepared on an expedited basis. Consequently, considerations related to the workability of the proposed rule changes may have been overlooked and significant impacts to NRC, applicants, licensees, and State and local governments may not have been identified. Therefore, the NRC particularly seeks comments addressed to these points and intends to hold workshops prior to preparing a final rule to (a) present the proposed rule changes to State and local governments, utilities, and other interested parties and (b) to obtain comments concerning the costs, impacts, and practicality of the proposed rule changes.

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The Nuclear Regulatory Commission is considering the adoption of amendments to its regulation, "Domestic Licensing of Production and Utilization Facilities," 10 CFR Part 50, that would require that emergency response planning considerations be extended to Emergency Planning Zones (discussed in NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants"). Both the Commission and EPA have formally endorsed the concepts in that EPA/NRC Report, 44 Federal Register 61123 (October 23, 1979). The amendments also include, as a condition of operating license issuance, that State and local governmental emergency response plans be submitted to and concurred in by the NRC. The proposed rule changes would also require a determination on operation of plants where relevant State and local emergency response plans have not received NRC concurrence. In addition, the Nuclear Regulatory Commission is considering revising 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's emergency planning regulations.

The NRC presently requires that power reactor licensees and applicants plan for radiological emergencies within their plant sites and make arrangements with State and local organizations to respond to accidents that might have consequences beyond the site boundary. In this way, offsite emergency response planning has been related to the nuclear licensing process.

To aid State and local governments in the development and implementation of adequate emergency response plans, the NRC, in conjunction with

several other Federal agencies, has attempted, on a cooperative and voluntary basis, to provide for training and instruction of State and local government personnel and to establish criteria to guide the preparation of emergency response plans. However, in the past, the NRC has not made NRC concurrence in State and local emergency response plans a condition of operation of a nuclear power plant; the proposed rule changes would do so. However, the proposed rule changes would permit a determination on continued operation of plants where relevant State and local emergency response plans have not received NRC concurrence.

Likewise, by Executive Order 12148, the Federal Emergency Management Agency (FEMA) was established. On September 11, 1979, NRC and FEMA agreed the NRC will no longer chair the Federal Interagency Central Coordinating Committee for Radiological Emergency Response Planning and Preparedness (FICCC) and will be replaced by FEMA. In light of these changes, it should be noted that FEMA is now in a transition period and therefore, for the near term, concurrences of State and local government emergency response plans will be a coordinated effort between NRC and FEMA. However, the Commission does not believe that this development should serve as a basis for delay in the proposed rule change.

At several places in the proposed amendments, the Commission refers to the roles of State and local governments. Indeed the main thrust of the proposed rule changes is that State and local emergency response plans will be reviewed by the Commission as a condition for licensing and operation of a private venture. The Commission recognizes that it cannot direct any governmental unit to prepare a plan, much less compel its adequacy. The

Commission also recognizes that it would not be able to understand fully, from its perspective in Washington, the delicate political relationships among the States and within States. The Commission, however, undertakes this rulemaking effort with the sincere desire that it can work with all governmental units in a cooperative venture to protect all citizens around nuclear power plants. While the State and local governments have the primary responsibility under their constitutional police powers to protect their public, the Commission, under authority granted to it by the Congress, also has an important responsibility to protect the public in matters of radiological health and safety. Accordingly, with an understanding of its limitations and with a sensitivity to the importance of all levels of governments working together, the Commission will commit, to the best of its ability, the necessary resources to make this venture work and hopes for corresponding commitments.

Rationale for Change

These proposed rule changes are predicated on the Commission's considered judgment in the aftermath of the accident at Three Mile Island that safe siting and design-engineered features alone do not optimize protection of the public health and safety. Before the accident it was thought that adequate siting in accordance with existing staff guidance coupled with the defense-in-depth approach to design would be the primary public protection. Emergency planning was conceived of as a secondary but additional measure to be exercised in the unlikely event that an accident would happen. The Commission's perspective was severely altered by the unexpected sequence of events that occurred at Three Mile Island. The accident showed clearly that the protection provided by siting and

engineered safety features must be bolstered by the ability to take protective measures during the course of an accident. The accident also showed clearly that on-site conditions and actions, even if they do not cause significant off-site radiological consequences, will affect the way the various State and local entities react to protect their public from dangers, real or imagined, associated with the accident. A conclusion the Commission draws from this is that in carrying out its statutory mandate to protect the public health and safety, the Commission must be in a position to know that off-site governmental plans have been reviewed and found adequate. The Commission specifically does not find that operation of a nuclear power facility in the absence of a plan is unsafe; the Commission only finds that the public can be best protected within the framework of the Atomic Energy Act if additional attention is given to emergency response planning.

The Commission recognizes that this proposal, to view emergency planning as equivalent to, rather than as secondary to, siting and design in public protection, departs from its prior regulatory approach to emergency planning. The Commission has studied the various proposals and believes that this course is the best available choice. In reaching this determination the Commission is guided by the findings of its Emergency Planning Task Force which found the need for intensive effort by NRC over the next few years to upgrade the regulatory program in this area. The Commission has also endorsed the findings of the EPA-NRC Joint Task Force for policy development in this area. Implementation of these reports by the NRC in its staff guidance is necessary for the NRC systems to be as effective as possible in assisting those governmental units and those utilities responsible for execution of the plans.

The Commission acknowledges the input of over one hundred commenters to date on the proposal to adopt new regulations. The staff evaluation of these comments is incorporated by reference herein as part of the record in this rulemaking proceeding.

In addition, the Commission acknowledges the important contributions made this year by various official commenters on the state of emergency planning around nuclear facilities, whose views are included as part of the basis for these regulations. The first of these was the report of the General Accounting Office issued coincident with the TMI accident which explicitly recommended that no new nuclear power plants be permitted to operate "unless offsite emergency plans have been concurred in by the NRC," as a way to insure better emergency protection. GAO Report, EMD-78-110, "Areas Around Nuclear Facilities Should Be Better Prepared for Radiological Emergencies" (March 30, 1979). In addition, the NRC Authorization Bill for FY 1980 (S.562) would amend the Atomic Energy Act to require a concurred-in State plan as a condition of operation. The policy consideration that underlies this provision would be consistent with the Commission's views of the health and safety significance of emergency planning. One of the Commission's House Oversight Subcommittees developed a comprehensive document on the status of emergency planning which recommended that NRC, in a leadership capacity, undertake efforts to upgrade its licensees' emergency plans and State and local plans. House Report No. 96-413, "Emergency Planning Around U.S. Nuclear Power Plants," 96th Cong., 1st Sess. (August 8, 1979). The Report's recommendations were significant and its findings about the need for improved emergency preparedness lends support to the NRC's own efforts to assure that

the public is protected. Finally, the President's Commission on the Accident at Three Mile Island has recently recommended approved State and local plans as a condition for resuming licensing. This Commission's Report and its supporting Staff Reports on emergency responses and preparedness are indicative of many of the problems which the NRC would address in this rule. In this regard the Commission notes that the already extensive record made on emergency planning improvements will be supplemented by the Report of its own Special Inquiry Group and other ongoing investigations, any requirements of the NRC Authorization Act, and, most importantly, by the public comments solicited by this proposed rule.

The proposed rule changes meet many of the concerns discussed in the above mentioned reports and publications. However, the Commission notes that the proposed rule changes are considered as an interim upgrade of NRC emergency planning regulations and, in essence, clarify and expand areas that have been perceived to be deficient as a result of past experiences. Because the Commission anticipates that further changes in the emergency planning regulations may be proposed as more experience is gained with implementing these revised regulations, as the various Three Mile Island investigations are concluded, and as the results become available from efforts in such areas as instrumentation and monitoring and generic studies of accident models, these proposed rules may require further modifications. Thus the proposed rule changes should be viewed as a first step in improving emergency planning.

Publication of these proposed rule changes in the Federal Register supersedes and thus eliminates the need to continue development of the proposed rule change to 10 CFR Part 50, Appendix E (43 FR 37473), published on August 23, 1978, regarding Emergency Planning considerations outside the Low Population Zone (LPZ).

In cases where a construction permit has already been issued, the permit proceeding will not be reopened at this time. For plants already operating, NRC teams are now meeting with licensees to upgrade licensee, State and local emergency plans and implementing procedures.

It is important to note that the proposed rules would not automatically preclude or suspend operations at nuclear power plants either during the initial conversion period, during start up or during any grace period thereafter should a plan lose its concurrence. This is not an area free from argument. However, the Commission believes that once a determination has been made that power is needed from a particular unit and that such a facility can be operated safely, it stands to reason that the facility cannot be simply shut down without some disruptive consequences to the people living there. Unless there is a compelling safety reasch that would prohibit operation, the Commission may properly weigh these consequences in deciding whether to ermit reactor operations. In this case, while the proposal is important for public health and safety, the Commission believes that the increment of risk involved in permitting operation in the absence of concurred in plans in every case is not undue.

1432 105

Therefore, operations need not be prohibited if the NRC can make one of two findings either (a) that the deficiencies are not significant for the plant in question or (b) that alternative compensating actions have been or will be taken. For example, a State might decide, for some reason, not to fund its specific emergency planning for radiological accidents and that might result in not warranting continued NRC concurrence. However, if the licensee can demonstrate that the deficiencies are not significant for the particular power plant or that some alternative to suspension of operations can assure adequate protection for the public health and safety (e.g., outstanding local emergency plans in conjunction with an augmented licensee response, etc.), the NRC may permit operation. If the deficiencies are significant, or no compensating means are available, the operating license will be denied; or the plant will be ordered to suspend operations by an order to show cause. (See 10 CFR 2.202.

Finally, because a license might also be denied or withdrawn based on a judgment that a State or local plan is inadequate to assure public protection, the NRC recognizes that some public process is required. The NRC contemplates that initial concurrence and subsequent withdrawal, if necessary, would be by notice and comment in the Federal Register and by notice in local newspapers. A preliminary determination that a license may be suspended will be noticed to an applicant in an order to show cause, pursuant to 10 CFR 2.202, which will permit a hearing on that determination. Operation may be suspended during the hearing period if determined appropriate by the NRC.

1432 106

Accordingly, in the discharge of its duties to assure the adequate protection of the public health and safety, the Commission has decided to issue proposed rules for public comment. The proposed changes to 10 CFR § 50.33, 50.47, and 50.54 apply to nuclear power reactors only. However, the proposed Appendix E to 10 CFR Part 50 applies to Production and Utilization Facilities in general except as noted in the proposed Appendix E. These proposals, comments, other official reports, and views expressed at the public workshops will be factored into the final rule, which the NRC now anticipates will be published in early 1980.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and section 553 of title 5 of the United States Code, notice is hereby given that adoption of the following amendments to 10 CFR Part 50 and Appendix E to 10 CFR Part 50 is contemplated.

Copies of comments received on the proposed amendments may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

1. Section 50.33, §50.33(g), is amended by deleting the word "Reserved" and by replacing it with the following:

§50.33 Contents of applications; general information.

* * * * *

(g) If the application is for an operating license for a nuclear power reactor, the applicant shall submit the State and local government radiological emergency response plans of governmental entities

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)[1]. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power plant shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

2. A new section 50.47 is added to read as follows:

§ 50.47 Emergency plans.

No operating license for a nuclear power reactor will be issued unless the emergency response plans of State and local governmental entities wholly or partially within the plume exposure pathway (EPZ),[1] have been reviewed and concurred in[2] by the NRC unless if the applicant can demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken.

Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The exact size and configuration of the EPZs surrounding a particular nuclear

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]Guidance for the preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

power plant shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

3. Section 50.54 is amended by adding four new paragraphs, (s), (t), (u) and (v) as follows:

§50.54 Conditions of licenses

* * * * * * *

(s) Each licensee who is authorized to possess and/or operate a nuclear power reactor shall submit within 60 days the State and local governments emergency response plans of governmental entities wholly or partially within the plume exposure pathway EPZ[1]. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The exact size and configuration of the EPZs for a particular nuclear power plant shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, and land characteristics, access routes, and local jurisdictional boundaries. If the appropriate State and local government emergency response plans have not been concurred in[2] by January 1, 1981, the Commission will make a determination

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]Guidance for the preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

whether the licensee should cease operation. In this case, the licensee may, pursuant to a proceeding under 10 CFR 2.202, demonstrate to the Commission's satisfaction that deficiencies in the plans are not significant for the plant in question or that alternative compensating actions have been or will be taken.

(t) After January 1, 1981, if during the operating license period of a nuclear power reactor the Commission determines that the appropriate State and local government emergency response plans do not warrant continued NRC concurrence and such State or local government(s) fail(s) to correct such deficiences within 4 months of the date of notification of the defects and until the plan(s) is(are) submitted and has(have) again received NRC review and concurrence, using the criteria set forth in subsection(s), supra, the Commission will make a determination whether the licensee shall cease operation. In this case, the licensee may, pursuant to a proceeding under 10 CFR 2.202, demonstrate to the Commission's satisfaction that deficiencies in the plan are not significant for the plant in question or alternative compensating actions have been or will be taken. The Commission shall cause such determination to be published in the Federal Register and in State and local newspapers of greatest circulation.

(u) The licensee of a nuclear power reactor shall provide for the development, revision, implementation and maintenance of its emergency preparedness program. To this end, the licensee shall provide for a review of its emergency preparedness program at least every 12 months by individuals independent of those who have direct responsibility for implementation of the emergency preparedness program. The review shall include a review and audit of licensee drills, exercises, capabilities, and procedures. The results of the review and audit, along with recommendations for improvements,

shall be documented, reported to the licensee's corporate and plant management, and kept available at the plant for inspection for a period of five years.

(v) Each licensee who is authorized to possess and/or operate a production or utilization facility shall have plans for coping with emergencies which meet the requirements of Appendix E of this Chapter.

3. 10 CFR Part 50, Appendix E, is amended as follows:

* * * * *

APPENDIX E--EMERGENCY PLANNING AND PREPAREDNESS [PLANS] FOR PRODUCTION AND UTILIZATION FACILITIES[1]

I. Introduction

Each applicant for a construction permit is required by §50.34(a) to include in its preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating license is required by §50.34(b) to include in its final safety analysis report plans for coping with emergencies.

This appendix establishes minimum requirements for emergency plans for use in attaining a state of emergency preparedness. These plans shall be described in the preliminary safety analysis report and submitted as a part of the final safety analysis report. The potential radiological

[1]The NRC staff has developed three regulatory guides: 1.101, "Emergency Planning for Nuclear Power Plants," 2.6, "Emergency Planning for Research Reactors," and 3.42, "Emergency Planning in Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70"; and NUREG-0610 "Draft Emergency Level Action Guidelines for Nuclear Power Plants" (September 1979) [~~a document entitled "Guide to the Preparation of Emergency Plans for Production and Utilization Facilities"~~] to help applicants establish adequate plans required pursuant to §50.34 and this Appendix for coping with emergencies. Copies of the guides [~~is~~] are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies of guides may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Publications Sales Manager.

hazards to the public associated with the operation of research and test reactors are considerably less than those involved with nuclear power reactor. Consequently, the size of the EPZs for Research and Test reactors and the degree to which compliance with the requirements of this section and sections II, III, IV and V will be determined on a case by case basis using Regulatory Guide 2.6 as a standard for acceptance. State and local government emergency response plans, which may include the plans of offsite support organizations, shall be submitted with the applicant's emergency plans. ~~[Procedures used in the detailed implementation of emergency plans need not be described in the preliminary or final safety analysis report.]~~

II. The Preliminary Safety Analysis Report

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

As a minimum, the following items shall be described:

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

[2]The size of the EPZs for a nuclear power plant shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles radius and the ingestion pathway EPZ an area about 50 miles in radius. EPZs are discussed in NUREG-0396. The size of the EPZ's for non-power reactors shall be determined on a case-by-case basis.

1432 112

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.

C. Protective measures to be taken in the event of an accident within and outside the site boundary to protect health and safety; corrective measures to prevent damage to onsite and offsite property; and the expected response, in the event of an emergency, of offsite agencies;

D. Features of the facility to be provided for onsite emergency first aid and decontamination, and for emergency transportation of onsite individuals to offsite treatment facilities;

E. Provisions to be made for emergency treatment ~~of-individuals~~ at offsite facilities of individuals injured as a result of licensed activities;

F. [~~The-training-program-for-employees-and-for-other-persons-not employees-of-the-licensee;-whose-services-may-be-required-in-coping with-and-emergency;~~] Provisions for a training program for employees of the licensee, including those who are assigned specific authority and responsibility in the event of an emergency, and for other persons whose assistance may be needed in the event of a radiological emergency;

G. Features of the facility to be provided to ensure the capability for actuating onsite protective measures [~~plant-evacuation~~] and the capability for facility reentry in order to mitigate the consequences of an accident or, if appropriate, to continue operation;

H. A preliminary analysis which projects the time and means to be employed in the notification of State and local governments and the public in the event of an emergency. A preliminary analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations.

1432 113

III. The Final Safety Analysis Report

The Final Safety Analysis Report shall contain the emergency plans for coping with emergencies. [~~The details of these plans and the details of their implementation need not be included; but~~] The plans shall be an expression of the overall concept of operation, which describe the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. The plans shall incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information shall be sufficient to provide assurance of coordination among the supporting groups and between them and the licensee.

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 minimize damage to property within the Emergency Planning Zones (EPZs).[2]

IV. Content of Emergency Plans

The applicant's emergency plans shall contain, but not necessarily be limited to, the following elements: organization for coping with radiation emergencies, assessment action, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery. The applicant shall also provide an analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations.

1432 114

A. ORGANIZATION

The organization for coping with radiological emergencies shall be described including definitions of authorities, responsibilities and duties of individuals assigned to licensee's emergency organization, and the means of notification of such individuals in the event of an emergency. Specifically, the following shall be included:

1. A description of the normal plant operating organization.
2. A description of the onsite emergency response organization with a detailed discussion of:
   a. Authorities, responsibilities and duties of the individual(s) who will take charge during an emergency;
   b. Plant staff emergency assignments;
   c. Authorities, responsibilities, and duties of an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures.
3. A description of the licensee headquarters personnel that will be sent to the plant site to provide augmentation of the onsite emergency organization.
4. Identification, by position and 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- or long-term emergencies shall also be identified. The special qualifications of these persons shall be described.

1432 115

5. A description of the local offsite services to be provided in support of the licensee emergency organization.

6. Identification of and expected assistance from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies.

B. ASSESSMENT ACTIONS

The means to be provided for determining the magnitude and continued assessment of the release of radioactive materials shall be described 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 along with appropriate meteorological information for determining when protective measures should be considered within and outside the site boundary to protect health and safety and prevent damage to property. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed upon by the applicant and State and local governmental authorities and approved by NRC. They shall also be reviewed with the State and local governmental authorities on an annual basis.

C. ACTIVATION OF EMERGENCY ORGANIZATION

The entire spectrum of emergency conditions which involve the alerting or activation of progressively larger segments of the total emergency organization shall be described. The communication steps taken to alert or activate emergency personnel under each class of emergency shall be

described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies.

D. NOTIFICATION PROCEDURES

[Procedures] Administrative and physical means 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~~] that become necessary, [~~or desirable~~] shall be described. This description shall include identification of the principal officials, by title and agencies, for the Emergency Planning Zones[2] (EPZs). Provisions shall be described for the yearly dissemination of basic emergency planning information such as the possibility of nuclear accidents, the potential human health effects of such accidents and their causes and the protection actions planned if an accident occurs as well as a listing of local broadcast network that will be used for dissemination of information during an emergency. A description of the proposed warning systems to the occupants of the plume exposure pathway Emergency Planning Zone.

Administrative and physical means, and the time required, for prompt alerting and providing of instructions to the public within the plume exposure pathway Emergency Planning Zone shall be described. It is the applicant's responsibility to ensure that such means exist, regardless of who implements this requirement.

1432 117

~~[E.--Provisions-for-maintaining-up-to-date---1.--The-organization for-coping-with-emergencies;-2.--the-procedures-for-use-in-emergencies; and-3.--the-lists-of-persons-with-special-qualifications-for-coping with-emergency-conditions;~~

E. EMERGENCY FACILITIES AND EQUIPMENT

Provisions shall be made and described for emergency facilities and equipment, including:

1. Equipment at the site for personnel monitoring;

2. Equipment for determining the magnitude of and for continuously assessing the release of radioactive materials to the environment;

3. Facilities and supplies at the site for decontamination of onsite individuals;

4. Facilities and medical supplies at the site for appropriate emergency first aid treatment;

5. Arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies;

6. Arrangements for transportation of injured or contaminated individuals from the site to treatment facilities outside the site boundary;

7. Arrangements for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary;

8. One onsite and one offsite Emergency Control Center from which effective direction can be given and effective control can be exercised during an emergency;

9. At least one onsite and one offsite communications system, including redundant power sources. This will include the communication

arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Where consistent with function of the governmental agency, these arrangements will include:

a. Provision for communications with contiguous State/local governments within the plume exposure pathway Emergency Planning Zone. Such communications shall be tested monthly.

b. Provision for communications with Federal emergency response organizations.

c. Provision for communications between the nuclear facility, State and/or local emergency operations centers, and field assessment teams.

F. TRAINING

The program to provide [~~Provisions~~] for (1) the training of employees and [~~testing~~] exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and [~~provisions for~~] (2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency shall be described. 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:

a. Directors or coordinators of the plant emergency organization.

b. Personnel responsible for accident assessment, including control room shift personnel.

c. Radiological monitoring teams.

d. Fire control teams (fire brigades).

e. Repair and damage control teams.

1432 119

f. First aid and rescue teams.

g. Local services personnel, e.g., local Civil Defense, local law enforcement personnel, and local news media persons.

h. Medical support personnel.

i. Licensee's headquarters support personnel.

j. Security personnel.

The plan shall describe provisions for the conduct of yearly drills and exercises to test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment and communication networks, and to ensure that emergency organization personnel are familiar with their duties. Such provisions shall specifically include participation by offsite personnel as described above as well as other State and local governmental agencies. The plan shall also describe provisions for a joint exercise involving the Federal, State, and local response organizations. The scope of such an exercise should test as much of the emergency plans as is reasonably achievable without involving full public participation. Definitive performance criteria shall be established for all levels of participation to ensure an objective evaluation. This joint Federal, State, and local exercise shall be scheduled once every five years.

All training provisions shall provide for formal critiques in order to evaluate the emergency plan's effectiveness and to correct weak areas through feedback with emphasis on schedules, lesson plans, practical training, and periodic examinations.

1432 120

G. MAINTAINING EMERGENCY PREPAREDNESS

Provisions to be employed to ensure that the emergency plan, its implementing procedures and emergency equipment and supplies are maintained up to date shall be described.

H. RECOVERY

Criteria to be used to determine when to the extent possible, 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, 10 copies of the applicant's detailed implementing procedures for its emergency plan shall be submitted to the appropriate NRC Regional Office. Within 60 days after the effective date of this amendment, licensees who are authorized to operate a nuclear power facility shall submit 10 copies of the licensee's emergency plan implementing procedures to the appropriate NRC Regional Office. As necessary to maintain them up to date thereafter, 10 copies of any changes to these implementing procedures shall be submitted to the same NRC Regional Office within 30 days of such changes.

1432 121

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

November 13, 1979

SECY-79-591B

INFORMATION REPORT

For: The Commissioners

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

Thru: Executive Director for Operations THR for L.V.G.

Subject: SUBMITTAL OF ENCLOSURE F TO SECY-79-591, "PRELIMINARY ANALYSIS OF PUBLIC COMMENTS"

Purpose: To provide the Commission with a summary analysis of public comments received in response to an advance notice of proposed rulemaking on emergency planning published on July 17, 1979.

Discussion: The enclosed report contains four sections. Section I, "Introduction," discusses the contents of the advance notice for proposed rulemaking and gives a general consensus of the public comments by categories. Section II, "Discussion of Emergency Planning Issues," contains a discussion of the 14 issues identified in the advance notice of proposed rulemaking, including current NRC practice, summary of public comments, and staff responses. Section III, "Comment Letters," includes copies of the 113 letters as well as an index of the letters by docket number, name of commenter, affiliation, and location (residence). Section IV, "Proposed Rule," contains Enclosure "A" to SECY-79-591, which includes the statement of considerations for the proposed rule changes and the annotated proposed rule changes.

This analysis has just now been completed by my staff and is being transmitted to you promptly in order to provide it prior to your acting on SECY-79-591.

Robert B. Minogue 11/13/79
Robert B. Minogue, Director
Office of Standards Development

Enclosure:
"F" - Preliminary Analysis of Public Comments

Contact:
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443-5981

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SECY NOTE: Reference is made to Section III "Comment Letters". A set of the letters received is available in SECY for review, but was not provided addressees, due to its bulk. Additional copies are available from SD.

1432 122

ENCLOSURE "F"

PRELIMINARY ANALYSIS OF PUBLIC COMMENTS

PRELIMINARY ANALYSIS PUBLIC COMMENTS

I. INTRODUCTION

Advance Notice of Rulemaking

On July 17, 1978, the Nuclear Regulatory Commission published an Advance Notice of Proposed Rulemaking on the subject of State and local emergency plans and those of licensees (see Attachment F-1). The purpose of the advance notice was to seek public comment on a broad range of emergency planning issues (14 questions), which would be considered in a systematic analysis of emergency response planning requirements and effectiveness. Thirteen (13) of these issues are dealt with in the proposed rule changes described in SECY 79-591, "Proposed Amendments to 10 CFR Part 50, Sections 50.33, 50.54, and Appendix E; Plans for Coping with Emergencies at Production and Utilization Facilities" (All issues except question 5, which deals with financial assistance). Some of the other issues will be considered for future rulemaking. Other issues, although not amenable to resolution through rulemaking, may be considered in policy statements, regulatory guides, and topical reports.

Public Comments Received

Over 113 public comment letters were received, which contained approximately 700 comments on the specific issues raised in the advance notice.

The comment letters were received in the following categories:

1432 124

43 individuals
17 State agencies
14 utilities
10 public interest groups
8 local governments
7 local citizens' groups
5 industry
3 consultants
2 Federal agencies
2 Congress
1 hospital
1 university.

An index is provided in the beginning of Section III, comment letters, listing all the letters received by (a) docket number, (b) name of commenter, (c) affiliation, and (d) location.

Organization of This Report

This report is divided into four sections:

- Section I is the introduction.
- Section II contains a discussion of the issues identified in the advance notice of rulemaking. Each issue is addressed as follows:

  A. Current NRC Practice, including present NRC regulations and guidance.

  B. Summary of Public Comments, including subordinate issues identified in the comment letters. Relevant comments are referenced by letter number (as docketed).

  C. Staff Response, which notes if the issue has been treated in the proposed rule or will possibly be the subject of future rulemaking action.

A separate discussion addresses general comments received (in addition to the 14 questions in the advance notice). Also, one subsection notes

1432 125

those letters received that are not applicable to the subject addressed in the advance notice.

- Section III contains the letters as docketed (Numbers 1 through 113).
- Section IV contains the proposed rule and the statement of considerations.

1432 126

II. DISCUSSION OF EMERGENCY PLANNING ISSUES

Question 1. What should be the basic objectives of em gency planning?

a. To reduce public radiation exposure?
b. To prevent public radiation exposure?
c. To be able to evacuate the public?

To what extent should these objectives be quantified?

CURRENT NRC PRACTICE

The broad objective of emer gency planning for offsite responses has been to provide reasonable assurance that appropriate measures can and will be taken, in the event of an emergency, to protect the public health and safety and to prevent damage to property. Appropriate offsite response measures can include evacuation, sheltering, restrictions on foodstuffs, administration of stable iodine to reduce the concentration of radioiodine in the thyroid, and controlled access to contaminated areas. Decisions as to which measure(s) may be appropriate in a particular emergency require consideration of (1) the actual or projected magnitude, type, and direction of the release of radioactive material, or possible pathways to the population at risk, (2) the time available to take action, and (3) the risks and benefits of possible alternative protective measures. Prior planning can be used to determine what protective measures would be appropriate in a variety of accident situations.

The benefits to be gained by taking protective actions as measured by the reduction in individual and population radiation exposures, which otherwise might occur if no offsite actions were taken at all, must be balanced against the risk to the population taking the protective action. Thus, it has been the basic objective of emergency planning to maximize this benefit to the extent reasonably achievable while minimizing the risk of taking the action.

The current NRC licensing requirements related to an applicant's emergency plans are set forth in Appendix E, "Emergency Plans for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," and in Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants." The guidance for preparation and evaluation of State and local emergency response plans by NRC is contained in NUREG-75/111 (December 1, 1974) and Supplement 1 (March 15, 1977).

SUMMARY OF PUBLIC COMMENTS

Fifty-eight (58) commenters responded to this question (see letters 5, 11, 16, 17, 18, 22, 23, 24, 25, 29, 34, 36, 40, 41, 43, 45, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 60, 61, 62, 66, 69, 71, 72, 73, 74, 75, 77, 79, 81, 82, 83, 84, 85, 86, 88, 90, 95, 96, 97, 98, 99, 101, 103, 104, 105, 106, 107, 109). Twelve (12) of the comments identified prevention of public exposure as the primary objective of emergency planning (see letters 17, 18, 22, 23, 36, 58, 60, 66, 72, 81, 86, 99). Fourteen (14) of the comments identified reduction of public exposure as the primary objective of emergency planning (see letters 5, 16, 48, 49, 51, 55, 61, 62, 71, 74, 75, 82, 84, 85). Four (4) of the comments identified evacuation of the public as the primary objective of emergency planning (see letters 11, 24, 34, 109).

Twenty-eight (28) of the comments identified all three basic objectives as being needed in any emergency planning in order to protect the health and safety of the public in the event of an accidental release of radioactivity from a nuclear power plant (see letters 25, 29, 40, 41, 43, 45, 50, 53, 54, 56, 57, 69, 73, 77, 79, 83, 88, 90, 95, 96, 97, 98, 101, 103, 104, 105, 106, 107).

1432 129

For those fifteen (15) commenters that addressed the question of quantification of these objectives, most referenced the EPA and FDA Protective Action Guides as reasonable criteria to be used for taking various protective actions. Some commenters addressed the NRC regulations of 10 CFR Part 20 as appropriate criteria as well as certain ICRP and NCRP recommendatons (see letters 5, 45, 49, 50, 61, 69, 71, 73, 75, 79, 81, 83, 84, 85, 88).

STAFF RESPONSE

The basic objectives of emergency planning underlie the present regulations as well as the proposed amendments to 10 CFR Part 50, Sections 50.33, 50.54, and Appendix E. For example, implicit in the Emergency Planning Zone (EPZ) concept are assumptions about the magnitude of the accident and conditions in the vicinity of a plant such as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. Appendix E to 10 CFR Part 50 has established minimum requirements for use in attaining a state of emergency preparedness. The proposed rule changes would strengthen these requirements in order to provide more assurance that effective protective measures (including evacuation) could be taken to protect the health and safety of persons within and outside the site boundary in the event of a radiological emergency. The proposed rule specifies more stringent requirements for ensuring effective coordination between the licensee and the local, State, and Federal groups that would have the responsibility for taking emergency response actions. The revision of Section IV, "Content of Emergency Plans," in Appendix E contains the additional requirements to ensure that emergency plans will meet these basic objectives.

1432 130

Question 2. What constitutes an effective emergency response plan for State and local agencies? For licensees? What are the essential elements that must be included in an effective plan? Do existing NRC requirements and guidance lack any of these essential elements? If so, how should NRC requirements and guidance be modified?

CURRENT NRC PRACTICE

Two characteristics of an emergency response plan are considered essential for the plan's effectiveness in meeting the basic emergency planning objectives identified in Question 1. First, the plan should contain essential planning elements that define the organizational and operational roles of the various agencies which comprise the emergency response organization. Second, the emergency response organization must be able to function, in an operational sense, during a real or simulated emergency. (This latter characteristic is further addressed under Question 9.)

For licensees, the necessary elements of emergency plans are identified in the regulations, Appendix E to 10 CFR Part 50, "Emergency Plans for Production and Utilization Facilities," and amplified by the staff's position statement in Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants" and Regulatory Guide 3.42 ("Emergency Planning for Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70") for material licensees. For State and local agencies, the planning elements that to date have been identified as important to an effective plan are found in the "Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities" (NUREG-75/111 and Supplement 1).

1432 131

SUMMARY OF PUBLIC COMMENTS

Forty-nine (49) commenters responded to this question (see letters 16, 17, 22, 23, 25, 29, 34, 38, 40, 41, 43, 45, 48, 49, 50, 51, 53, 55, 56, 57, 58, 60, 61, 62, 66, 69, 71, 73, 74, 75, 77, 79, 81, 82, 83, 84, 85, 86, 88, 95, 96, 97, 98, 99, 103, 104, 106, 107, 109). Eighteen (18) of the comments addressed primarily the broad issues of protecting the public health and safety, the need for coordination and communication among all parties concerned with emergency response, i.e., licensee and local, State, and Federal governments, and the need to develop emergency plans jointly (see letters 17, 23, 29, 51, 58, 61, 62, 74, 82, 83, 84, 85, 86, 88, 98, 99, 104, 107). Twenty-eight (28) of the comments addressed the actual elements for an effective emergency plan. Most of the comments listed the major elements to be: lines of communication; elements set forth in NUREG-75/111; training of personnel; education of the general public; evacuation routes; offsite monitoring; established lines of authority between State/local governments; and periodic review and testing of plans (see letters 16, 22, 25, 38, 40, 41, 43, 45, 48, 49, 50, 53, 55, 56, 57, 60, 66, 69, 71, 73, 75, 77, 81, 95, 96, 97, 103, 106). Three of the comments did not address the issues of the question (see letters 34, 79, 109).

STAFF RESPONSE

The proposed rule changes would elaborate existing Appendix E requirements for licensees by explicitly identifying organizatonal and operational parameters that need to be addressed in the licensee's emergency response plans, with special attention given to coordination between the licensee's and offsite agencies' emergency response organizations and operations. The proposed rule changes would also require licensees to submit their emergency response plan implementing procedures to NRC for review. In order to obtain better assurance

that the emergency response organizations can function, in an operational sense, during an emergency, the proposed rule changes require testing of communication links and joint drills and exercises.

The proposed rule changes do not place requirements on State and local government emergency response plans. However, they do affect them since the quality of these plans will be a factor in future NRC licensing decisions and in determinations as to whether a nuclear power plant will be allowed to continue operation. The present NRC guidelines for State and local emergency response planning are referenced as guidance in the proposed rule changes. The guidelines are presently undergoing examination for possible revision and conversion to regulatory requirements.

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

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

CURRENT NRC PRACTICE

Appendix E, "Emergency Plans for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," presently requires that licensee emergency plans include plans for coping with radiological emergencies within their plant sites and that arrangements be made with State and local organizations to respond to accidents that might have consequences beyond the site boundary. The current regulations do not require NRC concurrence of State and local emergency response plans as a condition of issuance or continued operation of a nuclear power facility.

SUMMARY OF PUBLIC COMMENTS

Sixty (60) commenters addressed either one or both of these issues (see letters 11, 16, 17, 22, 23, 24, 25, 28, 29, 31, 34, 38, 40, 41, 43, 44, 45, 48, 49, 50, 51, 54, 55, 56, 57, 58, 60, 61, 62, 63, 66, 69, 71, 73, 74, 75, 76, 77, 79, 80, 81, 82, 83, 84, 85, 86, 88, 89, 95, 96, 97, 98, 99, 101, 103, 104, 106, 107, 109, 113). Twenty (20) commenters stated that NRC concurrence in State and local emergency plans should NOT be required as a condition of license issuance or continued operation of nuclear power plants (see letters 25, 29, 41, 45, 49, 50, 55, 56, 69, 63, 71, 73, 75, 81, 84, 85, 86, 88, 95, 104). A number of these commenters indicated approval of the present voluntary and,

hence, informal process of NRC concurrence in State and local emergency plans (see letters 25, 41, 49, 50, 55, 56, 71, 73, 85, 86, 104).

Commenters expressed concern over the following issues as part of their disapproval: Federal Emergency Management Agency (FEMA) is a more appropriate agency for reviewing State/local emergency plans (see letters 75 and 69); radiological accidents are but one element of overall disaster planning (see letters 69, 75, 81); State and local political structures should allow flexibility in planning, which a formal versus voluntary program might diminish excessively (see letters 16, 25, 41, 50, 86); shut down could result arbitrarily through unilateral actions of State or local governments over which neither the licensee nor NRC has any control (see letters 45, 55, 85), especially since NRC has no legal authority over State/local emergency planning efforts (see letter 104); this is an issue which Congress and not the NRC should decide (see letters 45 and 81).

One commenter (see letter 16) believed that NRC concurrence should not be required as a condition of continued operation, but should be required for new licensees.

Thirty-six (36) commenters believed NRC concurrence should be required as a condition of either continued operation or issuance of a new license (see letters 11, 17, 22, 23, 24, 28, 31, 34, 40, 44, 48, 50, 54, 57, 58, 60, 61, 62, 66, 74, 76, 79, 80, 82, 83, 89, 96, 97, 98, 99, 101, 103, 106, 107, 108, 113).

Opinion varied as to how long a period of time should be allowed to achieve concurrence from immediately to when standards are developed. Three commenters

(see letters 44, 74, 107) expressed concern about the possibility of shutdowns because of artibrary actions on the part of State or local governments. At least one commenter (see letter 77) tied together the question of site suitability and the feasibility of evacuation; and at least one commenter called for State participation in developing standards for judging NRC concurrence (see letter 22).

STAFF RESPONSE

These comments are addressed in Sections 50.33(g), 50.54(s) and (t), and Section I of Appendix E to 10 CFR Part 50 of the proposed rule. The proposed rule requires NRC concurrence in State and local emergency response plans for new licenses and for continued operation of licensed nuclear power facilities.

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

CURRENT NRC PRACTICE

Currently, there is no specific staff practice regarding financial assistance to State and local governments for peacetime radiological emergency response planning and preparedness.

SUMMARY OF PUBLIC COMMENTS

Fifty-nine (59) commenters responded to this question (see letters 11, 13, 14, 16, 17, 22, 23, 24, 28, 29, 30, 36, 41, 43, 44, 45, 46, 47, 48, 49, 50, 53, 54, 55, 56, 57, 58, 60, 61, 62, 66, 68, 69, 71, 73, 75, 77, 79, 80, 81, 82, 83, 84, 85, 86, 88, 89, 95, 96, 97, 98, 99, 100, 101, 103, 104, 105, 106). All commenters agreed that some form of financial assistance would be desirable; but wide diversity existed in the comments as to the authority under which financial assistance should be conducted. Twenty-one (21) commenters said that utilities should carry the burden of financial assistance (see letters 11, 14, 16, 23, 24, 28, 36, 46, 47, 50, 54, 58, 60, 61, 68, 76, 96, 99, 100, 103, 106). Twenty-four (24) commenters said that the Federal government should finance any assistance (see letters 22, 30, 44, 45, 48, 49, 53, 56, 57, 69, 71, 73, 75, 77, 79, 80, 81, 82, 83, 85, 89, 98, 101, 104). Two (2) commenters believed that those States benefiting, i.e., receiving the power, should finance their own assistance (see letters 62, 95). Finally, seven (7) commenters said that financial assistance should be jointly funded by Federal, State, and local governments and the licensee (see letters 29, 41, 43, 66, 84, 86, 97).

1432 137

STAFF RESPONSE

This issue is not addressed in the proposed rulemaking. However, there is a staff review underway to determine the feasibility of providing financial assistance to State and local governments.

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

CURRENT NRC PRACTICE

Appendix E, "Emergency Plans for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," presently requires that licensees' emergency plans include provision 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 (Section IV.F). The identity of those persons is also a requirement (Section IV.A). The scenarios to be used in drills are not specified nor is the extent of involvement of offsite support groups or the fidelity of the exercises.

Generally, drills have been held on an annual basis. Most drills have not involved full-scale participation of offsite groups but have included simulated responses and communications checks with such groups. NRC inspectors sometimes observe such drills but do not participate actively.

SUMMARY OF PUBLIC COMMENTS

Forty-nine (49) letters responded to this question (see letters 16, 17, 22, 23, 24, 29, 41, 43, 45, 48, 49, 50, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 66, 69, 70, 71, 73, 74, 75, 77, 79, 80, 81, 82, 83, 84, 85, 86, 88, 95, 96, 98, 99, 101, 103, 104, 106, 107, 109). All commenters agreed that radiological response drills should be a requirement, but there was no agreement as to the

authority under which the drills should be conducted. Nine (9) commenters said drills should be conducted under State authority alone (see letters 22, 24, 29, 54, 55, 60, 62, 77, 98); two (2) commenters stated combined State and local authority (see letters 50, 66); two (2) commenters preferred combined State, local (offsite), and licensee (onsite) authority (see letters 7, 75),(letter 70 would have Federal authority exercised as well); six (6) commenters stated combined State, local, and Federal authority (see letters 17, 23, 56, 95, 96, 99); two (2) commenters said combined State and Federal authority (see letters 71 and 80); one (1) commenter stated licensee authority alone (see letter 61); five (5) commenters said under Federal authority alone (see letters 79, 86, 101, 106, 109); and five (5) commenters spoke to an observer role for the Federal government (see letters 22, 29, 57, 60, 70).

A number of commenters pointed out that drills are already a requirement under the present Appendix E to 10 CFR Part 50 (see letters 41, 45, 56, 63, 69, 73, 81, 84, 104).

While almost all commenters agreed on the desirability of the participation of the relevant State and local governmental agencies in emergency response drills, a number of commenters pointed out that a requirement in NRC regulations for State and local governmental participation could raise legal questions (see letters 41, 50, 69, 73, 81, 85). With respect to public participation in drills, four (4) commenters said "no" (see letters 50, 73, 74, 82); four (4) said "yes" (see letters 43, 53, 54, 58); two (2) gave a qualified "yes" (see letters 49 and 61).

1432 140

STAFF RESPONSE

The staff agrees with the need to upgrade requirements for drills. The proposed rule would require annual licensee drills with participation of State and local officials and Federal participation every 5 years. Public participation would not be required.

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

CURRENT NRC PRACTICE

Appendix E "Emergency Plans for Production and Utilization Facilities" to 10 CFR Part 50 "Domestic Licensing of Production and Utilization Facilities," requires the licensee to include "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;" (Section IV.D)

SUMMARY PUBLIC OF COMMENTS

Fifty-four (54) comments addressed this issue. There was unanimity among all 55 commenters that the public should be kept informed of, and prior to, any emergency (see letters 11, 13, 14, 16, 17, 18, 22, 23, 24, 29, 31, 34, 38, 40, 41, 42, 45, 48, 50, 53, 55, 56, 57, 60, 62, 66, 69, 70, 71, 73, 74, 75, 76, 77, 79, 80, 81, 83, 84, 85, 86, 88, 95, 96, 97, 98, 99, 100, 101, 103, 104, 106, 107, 109.) However, there is wide diversity among the commenters as to how best to inform the public. Fourteen (14) commenters cited the use of television, newspapers, radio and other news media (see letters 13, 16, 23, 24, 29, 34, 38, 40, 48, 53, 55, 98, 99, 100, 104); six (6) commenters suggested some sort of direct mailing scheme, i.e, newsletters, inserts into utility bills, or voter registration (see letters 43, 66, 97, 107); three (3) commenters suggested holding local public meetings (see letters 22, 66, 107).

1432 142

In addition to these more conventional methods, one (1) letter recommended using wardens as in air-raid warden, (see letter 34); one (1) letter suggested pre-placement of an emergency packet in each home to give advice upon the sounding of some special alarm (see letter 85), one (1) letter called for the installation of an alarm system in each home (see letter 109); one (1) commenter cited the use of tube horns, telephones, and/or helicopters with loud speakers (see letter 24). Finally, one (1) commenter suggested that it was unnecessary to inform everyone and that emergency plans be made available only on request to the general public (see letter 71).

STAFF RESPONSE

These comments are addressed in Section IV.D, paragraphs 1 and 2 of the proposed rule (Appendix E to 10 CFR Part 50). The proposed rule requires that a licensee disseminate emergency planning information to the public within the Emergency Planning Zone on a yearly basis.

1432 143

Question 8. What actions should be taken in response to the recommendations of the joint NRC/EPA Task Force Report (NUREG-0396/EPA 520/1-78-016)?

CURRENT NRC PRACTICE

Although a spectrum of design basis accidents are evaluated by the NRC staff in the safety evaluation review, only the accident resulting in the highest predicted exposures is used in the evaluation of emergency plans for nuclear power reactor sites. Since the results of the safety evaluation review determine the predicted exposures at the inner boundary of the low population zone (LPZ) (the exclusion area boundary) and the outer boundary of the LPZ, the review of emergency plans for the low population zone and beyond uses the predicted exposures and time of exposures evaluated for the design basis accidents. The existing guidance documents used in the review of emergency plans are NUREG-75/111, EPA-520/1-75-001, and Regulatory Guide 1.101.

The conclusions of the joint NRC/EPA Task Force were that:

1. A spectrum of accidents should be considered in developing a basis for emergency planning.

2. Emergency Planning Zones (EPZs) of about 10 miles for plume and 50 miles for ingestion are sufficient to scope planning areas for initiation of predetermined protective actions.

3. Time frames and radiological characteristics of releases should provide support for planning and preparedness.

1432 144

4. Establishment of EPZs should not result in large increases in costs if existing guidance for emergency planning has been considered.

SUMMARY OF PUBLIC COMMENTS

Thirty-seven (37) commenters responded to this question (see letters 17, 22, 24, 29, 30, 32, 34, 41, 45, 48, 49, 50, 54, 55, 56, 57, 61, 66, 69, 71, 73, 74, 75, 79, 81, 83, 84, 85, 88, 95, 96, 98, 103, 104, 104, 107.) Twenty (20) of the comments stated that the recommendations should be implemented; but the extent of implementation ranged from recommending guidance to State and local governments to Federal regulatory requirements. Also, the comments addressed the difference between the use of LPZ from Part 100, "Reactor Site Criteria," and the use of EPZ from the Task Force requiring further discussion. Eleven (11) of the comments stated the recommendations should not be implemented and that further evaluation of the EPZ concept was required before specific distances were recommended for emergency planning purposes. Also, the comments addressed the need for factoring many other important elements of emergency planning into EPZ distances for the different pathways. Six (6) of the comments did not address the specific issue but stated general conclusions regarding the Task Force or the report.

STAFF RESPONSE

The recommendations of the Task Force report have been endorsed by the Commission in a Policy Statement published in the Federal Register on October 18, 1979. The concept of EPZs has been incorporated into the proposed rule change to Sections 50.33, 50.54 and Appendix E to 10 CFR Part 50. The distances for the EPZs have been included as regulatory requirements in the proposed rule

changes. The remaining guidance documents have been referenced and not incorporated as regulatory requirements in the proposed rule changes. The remainder of the conclusions by the Task Force have not been implemented in the proposed rule change but will be used as guidance.

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

CURRENT NRC PRACTICE

Current regulations permit the release of low levels of radioactivity for activities regulated by the NRC. Licensees are presently prohibited from releasing to unrestricted areas amounts of radioactivity in excess of those limits specified in Appendix B, Table II, of 10 CFR Part 20, Section 20.106. Moreover, releases from nuclear power reactors in amounts lower than those specified in Table II are to be kept "as low as is reasonably achievable" ("ALARA") [10 CFR §§50.34a, 50.36a]. Numerical guidance interpreting the ALARA standard is provided in Appendix I to Part 50. Those low-level releases must be monitored by licensees, and the total reported to the Commission semiannually [10 CFR §50.36a(a)(2), 70.59, 40.65].

In contrast, the reporting requirements of §20.403 are triggered at significantly higher release levels. Those requirements are designed "to give the [Commission] prompt notice of potentially serious accidents involving licensed material, in order that appropriate steps may be taken to protect against further hazard to life or property" [22 FR 3389]. It is inconsistent with the purpose of §20.403 to trigger emergency reporting requirements, upon the release of the low levels of radioactivity now permitted under normal operating conditions.

1432 147

Section 20.403 requires immediate notification of incidents involving designated levels of radiation exposure by individuals, loss of operation of facilities, and property damage, as well as the release of radioactive materials.

Section 50.34(b)(6)(v) of the Commission's regulations requires that each application for an operating license for a production or utilization facility contain an emergency plan as part of the required final safety analysis report. Sections 70.22(i) and 70.23(a)(11) require that each application for a license to possess and use special nuclear material for processing and fuel fabrication, scrap recovery, or conversion to uranium hexafluoride shall contains plans for coping with radiological emergencies. Requirements for emergency plans are contained in Appendix E to Part 50. Emergency plans must contain arrangements for the notifications of appropriate State and local agencies in cases of emergency (10 CFR Part 50, App. E, Sections IV, A, C, and D).

Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants," recommends that appropriate offsite agencies should be notified in the case of an emergency, including some situations where it is unlikely that an offsite hazard will be created. Fires and explosions in the plant having no radiological consequences offsite will generally fall into this latter class. This recommendation, in some cases, has been made a part of nuclear power plant licensees' existing emergency plans.

Regulatory Guide 1.16, "Reporting of Operating Information -- Appendix A, Technical Specifications," recommends that the Director of the appropriate NRC Regional Office should be informed by telephone of events of potential public

1432 148

interest as soon as possible after the event has been discovered. This recommendation has been made a part of the technical specifications of all nuclear power plant licenses.

The following factors and constraints are applicable to consideration of this issue:

- Notification of State and local government agencies should provide early warning to provide more time on preparations for responding.
- Notification to public should emphasize the provision of understanding of the significance of what has happened and actions taken.
- Consideration might be given to establishing "information only" notification criteria outside the context of emergency plans.
- Notification of public must avoid any appearance of withholding substantive information.
- Notification of public must avoid unnecessary alarm (although this factor should not control whether notification is to be made).

Incidents occur at nuclear facilities that either do not result in any release of radioactivity or result only in releases that are within relevant license conditions. These, therefore, do not technically qualify as radiological emergencies. Some of these have been called "public interest occurrences" and have resulted in some anxiety on the part of the public and/or public officials who may initially be reluctant to rely solely on the licensee's assessment or are uncomfortable with learning of such occurrences through the news media. To the extent that notifications to the authorities of "public interest occurrences" events might be required, in the context of emergency plans, there is a

chance of creating a "cry wolf" attitude and thus adversely affect the potential benefit of the plans when a real emergency occurs.

SUMMARY OF PUBLIC COMMENTS

Fifty-one (51) letters responded to this question (see letters 13, 16, 17, 22, 24, 29, 31, 34, 38, 40, 41, 43, 45, 48-50, 54-58, 60-62, 66, 69, 71, 73-77, 79, 81-86, 88, 95, 96, 97, 98, 99, 101, 103, 104, 106, 107, and 109). The suggestions were highly varied with no significant number supporting any specific suggestion.

Circumstances and criteria suggested for notification of State, local, and Federal agencies of incidents, including emergencies are listed below:

1. Abnormal conditions, including actualism of automatic alarms within the facility (see letters 50 and 96).
2. Where there is a potential hazard to the public (see letters 16, 22 and 99).
3. Abnormal release of radioactivity (see letters 24 and 95).
4. Newsworthy events or events of public interest (see letters 24 and 103).
5. Any technical specification violation (see letters 29 and 101).
6. Present NRC and EPA guidance (see letter 40).
7. Regulatory Guide 1.101 (see letter 41).
8. Potential and general emergencies (see letters 45 and 98).
9. 10 CFR Part 20, Section 20.403 (see letter 45).
10. Radioactive releases over a specified level (see letter 48).
11. Radioactive releases in excess of EPA and FDA protective action guides (see letters 49 and 79).

1432 150

12. Accidents with potential for offsite exposures (see letter 55).
13. Accidents with a potential to exceed certain limits (see letter 56).
14. Potential emergencies (see letters 58, 62, 86 and 97).
15. Public threats (see letter 60).
16. Monitoring shows excess radiation (see letter 61).
17. Potential for excess radiological consequences (see letter 73).
18. To be determined by NRC onsite inspector or supervisor on a case-by-case basis (see letter 76).
19. Emergency with offsite release (see letter 79).
20. When emergency plan might reasonably be expected to be evoked (see letter 81).
21. Any threat of radiation exposure, including any SCRAM (see letter 82).
22. Present criterion (see letter 83 and 84).
23. Unusual incidents (see letter 85).
24. If event could lead to a release or public worry (see letter 107).
25. Set print trigger in independent sensors (see letter 109).

Suggestions for public notification of these incidents were as follows:

1. By single source (not NRC or licensee) giving reason for notice as determined by State and local government agencies, after being notified by licensee (see letters 50, 69, 85, 95, 96, 98, 99, 101 and 106).
2. By inter-nonprofit organization committee whenever there is a danger to public welfare (see letter 17).
3. By NRC's Public Information Office through radio and TV in emergencies after conferring with other agencies (see letter 29).
4. By State and/or local agencies (see letters 22, 49, 61, 62, 86, 97 and 103).

1432 151

5. Through sirens, police, and home dosimeters (see letters 48 and 60).
6. By Media Center (see letter 49).
7. By public lead agency, which weighs risk in reporting to public (see letter 54).
8. By one State official (see letters 55, 56, and 73).
9. By official spokesperson designated by NRC or State (see letter 57).
10. By utility, NRC, State, and local governments if public must take action (see letter 71).
11. By licensee in short term and by Coordinating Center over longer term (see letters 75 and 107).
12. By Governor in short term and by NRC/Governor over longer term (see letter 77).
13. By government agency responsible for the evacuation (see letter 81).
14. If needed to implement the emergency plan (See letter 82).
15. By agencies with authority to institute countermeasures (see letter 83).
16. Directly by licensee when immediate action is required (see letter 84).
17. Using system incorporating various levels of advisories (see letter 104).
18. By daily report of radiation levels and weather (see letter 109).
19. By onsite NRC inspection (see letter 58).

STAFF RESPONSE

Proposed amendments to Appendix E to 10 CFR Part 50 contain relevant requirements of the contents of applicants' emergency plans concerning notification of State, local, and Federal agencies. They must include descriptions of:

1. Emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the NRC, and other Federal agencies.

1432 152

2. Administrative and physical means 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 that become necessary. This description shall include identification of the principal officials, by title and agencies, for the Emergency Planning Zones.

3. Administrative and physical means and the time required for prompt alerting and providing instructions to the public within the plume exposure pathway Emergency Planning Zone. It is the applicant's responsibility to ensure that such means exist, regardless of who implements this.

1432 153

Question 10. How and to what extent should the concerns of State and local governments be incorporated into Federal radiological emergency response plans?

CURRENT NRC PRACTICE

In the past, the responsible Federal agencies that would respond in the event of a radiological emergency have not requested State and local government input concerning Federal response plans.

SUMMARY OF PUBLIC COMMENTS

Forty-six (46) commenters responded to this question (see letters 14, 16, 17, 22, 24, 29, 40, 41, 45, 46, 47, 48, 49, 50, 54, 55, 56, 57, 58, 60, 61, 62, 69, 71, 73, 75, 79, 80, 81, 82, 83, 84, 85, 86, 88, 95, 97, 98, 99, 101, 103, 104, 105, 106, 107, 109).

Most commenters (37) agreed that State and local concerns should be incorporated into Federal emergency planning, with NRC in the lead. Five (5) commenters said local and State government has the responsibility for implementing protective actions - not Federal government (letters 50, 56, 95, 97, and 98 because the local agency (or State) would be the first to respond during an emergency. Two commenters (letters 60 and 84) also pointed out that site-specific issues should definitely be excluded from Federal planning. One commenter (letter 81) questioned the legal authority of NRC to set standards for State and local plans.

One commenter said the Federal role should only be advisory (letter 55).

1432 154

Value impact and cost-benefit assessments are essential for any Federal agency in the emergency planning area, one commenter noted (letter 49). Another commenter (letter 57) pointed out that any new regulations should clearly delineate Federal, State, and local areas of responsibility.

Two commenters said that financial aid was the greatest need of local governments to carry out proper emergency planning and response (letters 61 and 103).

Meeting with local and State officials was suggested by one commenter (letter 88) as a way to maintain local and State concerns in Federal emergency planning.

One commenter noted (letter 83) that training sessions (for local, State, and Federal officials) are essential to prepare for proper response to emergencies.

Many commenters thought the Federal government could provide much more expertise, guidance, and manpower to local and State governments than they themselves could muster.

Two commenters said Federal planning should not preempt State and local plans (letters 71 and 85). They thought that because of wide variations in local conditions, over-planning by Federal agencies is not desirable.

One commenter stated that Federal regulations (not local/State) are needed to set rigid minimum national standards (letter 54).

Two (2) commenters (letters 50 and 56) suggested ways to involve local and State governments:

1432 155

1. State and local governments should be invited to participate at the earliest stages of emergency planning (i.e., pre-licensing).
2. State and local participation in drills should provide opportunities for corrections and adjustments.

STAFF RESPONSE

The proposed regulations recognize the need for coordination between Federal, State, and local governmental authorities and the licensee. This is emphasized in the organizational area of the proposed rule, which would require the licensee to provide "Identification of and expected assistance from appropriate State, local, and Federal agencies". Likewise, in the area of assessment actions the licensee must establish "... 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 Commission and other Federal agencies :...".

1432 156

Question 11. How should Federal agencies interface with State and local governments and the licensee during emergencies?

CURRENT NRC PRACTICE

Federal agencies are prepared to serve as advisors and provide technical assistance to State and local governments during an emergency. NRC exercises sole regulatory authority over onsite activities.

SUMMARY OF PUBLIC COMMENTS

Forty-two letters commented on this issue (see letters 5, 16, 17, 18, 22, 24, 29, 40, 41, 44, 45, 46, 48, 49, 50, 54. 56, 57, 58, 61, 62, 69, 59, 70, 71, 73, 75, 81, 84, 85, 86, 88, 89, 95, 98, 99, 101, 103, 104, 105, 106, 107, 109). The most frequent comments were (1) that emergency plans should describe the interfaces between agencies (see letters 5, 41, 45, 46, 48, 49, 50, 56, 57, 69, 73, 99, 103, 106), and (2) that State and local officials should exercise primary offsite authority, using Federal assistance as needed (see letters 17, 22, 29, 41, 44, 49, 50, 54, 56, 70, 75, 95, 98). Some letters included specific comments to the effect that local authorities should take charge during the first part of an emergency with the Federal government coming in later to provide assistance or to take charge (see letters 62, 71, 101, 105). Other letters suggested that a committee of Federal, State, local, and licensee officials should handle the emergency (see letters 16, 24, 40, 45).

For onsite emergency activities some letters stated that the licensee should have control under NRC supervision (see letters 22, 50, 69, 85). Four letters suggested that NRC be the lead in coordinating Federal agencies during an emergency (see letters 45, 49, 54, 57).

1432 157

STAFF RESPONSE

Current practice is consistent with most of the comments received. NRC plans to assist State and local governments as appropriate during emergencies, while regulating onsite activities as necessary to protect public health and safety. The proposed rule requires the licensees' emergency plan to include a description of local offsite services to be provided, including expected assistance from State, local, and Federal agencies. The emergency plan must identify emergency action levels and describe plans for notifying local, State, and Federal officials when an emergency occurs.

Question 12. Should the licensees be required to provide radiological emergency response training for State and local government personnel? If so, to what extent? Should the Federal government provide such training? If so, to what extent?

CURRENT NRC PRACTICE

Licensees are not required to provide radiological emergency response training to State and local officials. Federal agencies do provide some training to State and local officials.

SUMMARY OF PUBLIC COMMENTS

Forty-three (43) commenters address this question (see letters 16, 17, 22, 23, 24, 29, 40, 41, 45, 48, 49, 50, 54, 56, 57, 58, 60, 61, 62, 69, 70, 71, 73, 75, 79, 80, 81, 82, 83, 84, 85, 86, 88, 95, 98, 99, 101, 103, 104, 105, 106, 107, 108). Ten (10) commenters stated that the licensee should have the primary role in providing training (see letters 22, 23, 24, 40, 41, 70, 79, 99, 105, 109). Fifteen (15) commenters stated that the Federal government should have a major role (see letters 16, 22, 49, 57, 60, 61, 71, 85, 86, 88, 101, 103, 104, 105, 107). Fourteen (14) commenters said that the licensee and Federal government should have a combined role (see letters 48, 50, 54, 57, 60, 62, 69, 75, 80, 81, 82, 95, 98, 106). Two (2) commenters would assign the State a primary role (letters 24 and 84). Three (3) commenters stated that NRC should merely specify training requirements and not designate who should provide the training (letters 17, 56, 73).

Some commenters specified training content such as familiarization with onsite facilities and emergency procedures, licensee capabilities, identification of

hazards, damage assessment, protective action guides, monitoring, and decontamination.

STAFF RESPONSE

The proposed rule requires that emergency plans include training to be provided by the licensee for their employees and State and local officials. Federal agencies will also continue to provide training.

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

CURRENT NRC PRACTICE

As discussed in Question 12, with regard to NRC's role in an emergency, reliance in the past has been placed on the licensees to make projections of offsite consequences for guidance of local and State authorities. These projections rely on an assessment of system parameters to predict possible future releases and on measurement of actual plant effluents to form the basis for estimates of the offsite consequences of actual releases. Notification of local and State authorities by the licensee is based on predetermined action levels. However, these action levels are not uniform for operating plants and, in some cases, rely only on effluent release measurements rather than plant parameters, which could give advance warning of releases.

Should an incident continue for more than a few hours, other sources of information and evaluation can augment the licensee's projections. This was the case during both the Ft. St. Vrain incident and the Three Mile Island accident.

As in the discussion of the role of the NRC in Question 12, the timeliness of the response, the capability of the evaluating organization, and the ability to obtain information on which to base a decision are major considerations. The credibility of the licensee and the adequacy of predetermined action levels (both for the licensee and offsite authorities) are also major factors in

determining from what source a recommendation for offsite protective action should come.

SUMMARY OF PUBLIC COMMENTS

Forty-seven (47) commenters responded to this question (see letters 11, 16, 17, 22-24, 29, 40, 41, 45, 48-50, 54-57, 60-62, 69, 71, 73, 75, 77, 79-86, 88, 95, 96, 97, 98, 99, 100, 101, 103-107, 109).

Twenty-eight (28) commenters believed that the licensee should be involved in the initial assessment of any radiological assessment and that the appropriate State/local agencies should (1) be immediately informed and (2) have the ultimate responsibility for instituting any protective action (see letters 22, 24, 29, 40, 45, 50, 55, 56, 62, 69, 71, 73, 75, 80-85, 88, 95, 97, 104-107).

Eight (8) commenters stated that the NRC should be responsible for any initial assessment by having an NRC representative at the site (see letters 11, 23, 24, 48, 50, 79, 96, and 100).

One (1) commenter stated that assessment should be accomplished by a regional center (see letter 40).

Seven (7) commenters stated that any responsibility should be held jointly by the Federal, State, and local agencies (see letters 16, 17, 56, 77, 99, 100, and 109).

1432 162

Other comments were very broad and offered no specific suggestions (see letters 54, 60, 61, 86, and 103).

STAFF RESPONSE

Proposed amendments to Appendix E to 10 CFR Part 50 contain relevant requirements of the contents of applicant's emergency plans, as follows.

"The means to be provided for determining the magnitude and continued assessment of the release of radioactive materials shall be described, 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 Commission and other Federal agencies, and the emergency action levels that are to be used as criteria along with appropriate meteorological information for determining when protective measures should be considered within and outside the site boundary to protect health and safety and prevent damage to property. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed upon by the applicant and State and local governmental authorities. They shall also be reviewed with the State and local governmental authorities on an annual basis."

Question 14. Would public participation in radiological emergency response drills, including evacuation, serve a useful purpose? If so, what should be the extent of the public participation? If not, how should the public be informed of emergency actions it might be asked to take?

CURRENT NRC PRACTICE

Currently, NRC regulations do not require licensees to test public evacuation plans in realistic drills, but power reactor licensees' 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. No provisions exist for public participation. There are potential costs, in terms of deaths and injuries to the public, associated with public evacuation drills.

It is doubtful whether States have the legal right to compel citizen participation in a practice drill. Similarly it should be noted that evacuations are a relatively common occurrence resulting from accidents, floods, weather, etc. Evacuation experts have indicated, substantiated by a few governors' replies to the PRM 53-14 petition, that evacuations have been and will probably continue to be performed, approximately once a week within the United States, with no major problems anticipated.

SUMMARY OF PUBLIC COMMENTS

Fifty-one commenters responded to the question (see letters 5, 16, 17, 18, 23, 24, 29, 30, 40, 41, 45, 48, 49, 50, 54, 55, 56, 57, 58, 59, 60, 61, 62, 69, 70, 71, 73, 75, 80, 81, 82, 83, 84, 85, 86, 88, 95, 96, 97, 98, 99, 101, 103, 104, 105, 106, 107. 109). Twenty-seven (27) of the commenters recommended that some kind of public participation is desirable with most considering active

public participation in evacuation drills to be necessary (see letters 17, 18, 23, 24, 29, 30, 40, 48, 50, 54, 60, 61, 77, 80, 83, 84, 85, 86, 96, 97, 99, 100, 101, 103, 105, 107, 109). Twenty-three (23) of the commenters recommended that public participation should not be required in evacuation drills (see letters 5, 16, 41, 45, 49, 55, 56, 57, 59, 62, 69, 70, 71, 73, 75, 79, 81, 82, 88, 95, 98, 104, 106). Only one commenter did not address the issue. Generally, all commenters agreed that periodic drills, which involve the licensee and State and local governments, are necessary.

STAFF RESPONSE

Past public evacuations have been performed without benefit of prior public drills. On January 19, 1973, 3000 out of an overall population of 3,300 people were evacuated from Morgan City, Louisiana, in 4 hours. On June 2, 1972, 8700 out of an overall population of 9000 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 existing evacuation plans, but with no prior drills, involving the public. Because of an impending collapse of a dam, the Los Angeles evacuation was performed without the benefit of an evacuation plan.

Realizing that there are potential disadvantages of performing realistic public evacuation drills, it is important to look at the potential merits of such drills. In analyzing the merits of this concept, one should note whether realistic evacuation drills involving the public were performed in the past and if they were beneficial. Also, if they were not undertaken in the past, consideration should be given as to whether public evacuations have been successfully conducted without

such drills. To the staff's knowledge, no public evacuation drills have ever been performed before an actual evacuation. Furthermore, public evacuations that were relatively successful were performed without prior drills.

Responsible State authorities and/or governors were asked to evaluate this concept of public participation in evacuation drills, on the basis of experience and judgment, to the PRA 50-14 status report. 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."

For these reasons, the proposed rule change does not require public participation in emergency response drills but does require periodic drills by the licensee and State and local governments as well as Federal organizations. The revision of Section IV.F., "Training", in Appendix E to 10 CFR Part 50 contains these additional requirements for testing of the emergency plan.

1432 166

Question 15. Miscellaneous Comments.

Many comments were received that did not relate directly to the fourteen issues listed in the Advance Notice of Proposed Rulemaking. These comments are discussed below.

a. Need for rule changes

Many letters suggested efforts to upgrade emergency plans through additional regulatory requirements. Several other letters opposed changes, or at least opposed hasty changes. Based on evaluations of emergency planning by both external and internal groups, the NRC staff has concluded that improvements are necessary, and the proposed rule reflects these improvements.

b. Siting problems, low population zone (LPZ), and emergency planning zone (EPZ)

Many letters stated that it is necessary to consider siting and emergency planning together, that the use of the LPZ and the EPZ should be reexamined, and that plants should not be sited in populated areas because of evacuation problems. The staff agrees with the use of the EPZ, and this is included in the proposed rule. Population around proposed sites is considered in the siting process. However, emergency plans are not completed until after the site is chosen.

1432 167

c. NRC guidance

Some comments were received that asked NRC to provide accident scenarios and other guidance to aid in development of acceptable emergency plans.

The proposed rule contains additional guidance. Accident scenarios are being developed and will be provided in guidance to be issued at a later date.

d. Specific aspects of emergency plans

Many letters made specific suggestions on what should be described in emergency plans. These included evacuation methods, provisions for hospitals and shelters, radiation protection methods, alarms, communication networks, plans for avoiding spread of contamination, establishment of emergency centers, emergency monitoring, and State and local border problems. These factors will be included in licensee and State emergency plans. The level of detail will depend on the specific case.

e. Other comments

Many comments were received which did not relate directly to emergency planning. Many letters opposed specific nuclear power plants or nuclear power in general. Other letters called for stricter radiation protection standards. Other letters questioned the competence of NRC, State, and local officials. Other letters called for Class 9 accidents to be analyzed in the reactor licensing process. One letter called for plants to be protected against terrorists, and another called for emergency plans for transportation accidents. All these comments are outside the scope of rulemaking on emergency planning.

1132 168

Question 16. Letters Not Applicable.

There were 14 letters that were not considered in the staff evaluation of public comments (see letters 1, 2, 3, 7, 10, 12, 15, 19, 26, 27, 37, 89, 111 and 112). Three (3) letters were repeats of other docketed letters (see letters 3/10, 44/89, and 43/111). Five (5) letters addressed transportation of wastes rather than emergency plans for nuclear power reactors (see letters 1, 15, 19, 26, and 27). Four (4) letters did not address any specific issue (see letters 2, 3/10, and 37). One (1) letter discussed a specific reactor site (see letter 12). One (1) letter was responding to a rule change involving research reactors (see letter 112).

1432 169

III. COMMENT LETTERS

INDEX OF COMMENT LETTERS

Docket No.	Name	Affiliation	Location
1	Marvin I. Lewis	Individual	Philadelphia, PA
2	Helen Kelchner	Individual	Berwick, PA
3	Irene S. Schoutens	Individual	Santa Barbara, CA
4	Bo Yerra	Individual	So. Princeton, ME
5	Florida Dept. of Health and Rehabilitative Services	State agency	Orlando, FL
6	Okeechabee County Civil Defense	Local government	Okeechabee, FL
7	Charles Seveca	Individual	Atascadero, CA
8	Ocala-Marion County Civil Preparedness	Local government	Ocola-Marion, FL
9	Richard Manzer	Individual	San Luis Obispo, CA
10	Irene S. Schoutens	Individual	Santa Barbara, CA
11	Mr./Mrs. D. Elliott	Individual	San Luis Obispo, CA
12	Edgecomb Citizens Comm. Concerned about Nuclear Power	Local government	North Edgecomb, ME
13	Guy F. Hunt	Individual	Portland, ME
14	Rodney and Elizabeth Orr	Individual	Portland, ME
15	J. A. Brown	Individual	Muncy, PA
16	Racine County Office of Emergency Govt.	Local government	Racine, WI
17	Mt. Lavrel Workshops	Private consultant	Coburn, PA
18	Roberta A. Broda	Individual	Omaha, NB
19	David A. Stine	Individual	Muncy, PA
20	Livingston College Dept. of Community Development Rutgers University	Individual	New Brunswick, NJ
21	Niagara Mohawk Power Corp.	Utility	Syracuse, NY
22	Virginia Office of Emergency and Energy Services	State agency	Richmond, VA
23	H. L. Lock and F. J. Orlando	Individuals	Steuben, ME
24	Sensible Maine Power	Local citizens	Boothbay, ME
25	Indiana State Bd. of Health	State agency	Indianapolis, IN
26	Office of the Governor	State agency	Raleigh, NC
27	Citizens Against Nuclear Dangers	Public interest group	Berwick, PA
28	Bergen Energy Action Network	Local citizens	Montvale, NJ
29	Alabama Dept. of Public Health	State agency	Montgomery, AL
30	Connecticut College (Michael Burlingame)	Individual	New London, CT
31	California League of Women Voters	Public interest group	San Francisco, CA
32	Floyd J. Fithian	Congress	2nd District, Indiana
33	J. Sam Miller	Individual	Northwood, NH

1432 171

Docket No.	Name	Affiliation	Location
34	Ruth I. Taylor	Individual	Saco, ME
35	Patricia T. Felton	Individual	Portland, ME
36	Network	Local citizens	Santa Barbara, CA
37	Mothers Day Commitment and Concerned Citizens of York County	Local citizens	York County, PA
38	John Fales/Judy August	Individuals	Portland, ME
39	Ann Hedgcook	Individual	Boothbay, ME
40	Dale Evolf	Individual	Florence, AL
41	KMC	Utility	Washington, D.C.
42	Roberta C. Pevear	Individual (NH House of Representatives)	Hampton Falls, NH
43	League of Women Voters of San Luis Obispo	Public interest group	San Luis Obispo, CA
44	Southern States Energy Board	State agency	Atlanta, GA
45	Washington Public Power Supply System	Utility	Richland, WA
46	Hartsville Project Coor. Committee, Inc.	Local government	Hartsville, TN
47	Marvin I. Lewis	Individual	Philadelphia, PA
48	Katherine V. Thompson	Individual	Wiscasset, ME
49	Northeast Utilities	Utility	Hartford, CT
50	Edison Electric Institute	Industry	Wasnington, D.C.
51	Geauga County Board of Commissioners	Local government	Chardon, OH
52	Calif. Office of Emergency Services	State agency	Sacramento, CA
53	Town of Elon College	Local government	Elon College, NC
54	San Luis Obispo Task Force on Nuclear Power Issues	Local citizens	San Luis Obispo, CA
55	Houston Lighting and Power Co. and Texas Utilities Generation Co.	Utility	Washington, D.C.
56	LeBoeuf, Lamb, Leiby and MacRae for Edison Electric Institute	Industry	Washington, D.C.
57	U.S. EPA	Federal agency	Washington, D.C.
58	Paul H. Allen	Individual	San Luis Obispo, CA
59	Commonwealth Edison	Utility	Chicago, IL
60	Sheldon, Harmon, Rossman and Weiss for Concerned Citizens of Rhode Island	Public interest group	Washington, D.C.
61	Russell M. Bimber	Individual	Painesville, OH
62	Nebraska Dept. of Health	State agency	Lincoln, NB
63	Ann Herald	Individual	Waterville, NY
64	Betsy Neale	Individual	Raymond, ME
65	Westchester County Executive	Individual	White Plains, NY
66	Union Concerned Citizens	Public interest group	Washington, D.C.

1432 172

Docket No.	Name	Affiliation	Location
67	Maryland Dept. of National Resources	State agency	Annapolis, MD
68	Susquehanna Alliance	Local citizens	Lewisburg, PA
69	Yankee Atomic Electric Co.	Utility	Westborough, MA
70	Florida Power and Light Co.	Utility	Miami, FL
71	Duke Power Company	Utility	Charlotte, NC
72	Elaine Rosenfield	Individual	San Luis Obispo, CA
73	Exxon Nuclear Company, Inc.	Industry	Richland, WA
74	Citizens for a Better Environment	Public interest group	Chicago, IL
75	Atomic Industrial Forum	Industry	Washington, DC
76	Joanne Crowe	Individual	Lindenwood, IL
77	South Carolina Dept. of Consumer Affairs	State agency	Columbia, SC
78	Yankee Atomic Electric Co.	Utility	Westborough, MS
79	Environmental Policy Assoc.	Consultant group	Hirom, OH
80	Georgia Dept. of Nat. Res.	State agency	Atlanta, GA
81	Shaw, Pittman, Potts and Trowbridge	Utility	Washington, DC
82	Dames and Moore	Consultant firm	Los Angeles, CA
83	Union of Cincinatti Med. Center	University	Cincinatti, OH
84	Georgia Power Company	Utility	Atlanta, GA
85	Manicopa County Dept. of C.D. and Emergency Srvs.	Local government	Phoenix, AZ
86	New York Federation for Safe Energy	Public interest group	Saugerties, NY
87	Lorraine A. Koury	Individual	No address
88	Tennessee Valley Authority	Federal agency	Chattanooga, TN
89	Southern States Energy Board	State agency	Atlanta, GA
90	Walter N. Johansson	Individual	Pemaquid Harbor, ME
91	Eleanor G. Waren	Individual	Bath, ME
92	Hugh Chapman Crouch	Individual	Springvale, ME
93	Reynolds and Eleanor Miller	Individuals	Boothbay, ME
94	Monmouth Medical Center	Hospital	Long Branch, NJ
95	Power Authority of the State of New York	State agency	New York, NY
96	League of Women Voters of Rockford	Public interest group	Rockford, IL
97	Public Interest Research Group in Michigan	Public interest group	Lansing, MI
98	New York Dept. of Health	State agency	Albany, NY
99	Jane F. Doughty	Individual	Durham, NH
100	Katheryn Kearney	Individual	Lewiston, ME
101	Environmental Policy Inst.	Public interest group	Washington, DC
102	Kay R. H. Evans	Individual	Westport Island, ME
103	Town of Waterford	Local government	Waterford, CT
104	Middle South Services, Inc.	Utility	New Orleans, LA
105	Portland General Electric	Utility	Portland, OR

1432 173

Enclosure "F"

Docket No.	Name	Affiliation	Location
106	Illinois Commerce Comm.	State agency	Springfield, IL
107	Colorado Dept. of Health	State agency	Denver, CO
108	Charles H. Lamoneux III	Individual	No address
109	Barbara Boehler	Individual	Damariscotla, ME
110	Jane Lee	Individual	Etters, PA
111	Robert J. Lagomarsino	Congress	19th District, CA
112	Babcock and Wilcox	Industry	Lynchburg, VA
113	New Hampshire Attorney General	State agency	Concord, NH

IV. PROPOSED RULE

Enclosure "F"

NUCLEAR REGULATORY COMMISSION

[10 CFR Part 50 and
10 CFR Part 50, Appendix E]

EMERGENCY PLANNING

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Proposed Rule Changes

SUMMARY: The Nuclear Regulatory Commission is proposing to amend its regulations in order to provide an interim upgrade of NRC emergency planning regulations as follows:

a. Require that an applicant's emergency plans, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. Additionally:

   1. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan has not received NRC concurrence within 180 days of the effective date of the final amendments.

   2. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

b. Require that emergency planning considerations be extended to "Emergency Planning Zones."

c. Require that applicants' and licensees' detailed emergency planning implementing procadures be submitted for NRC review.

d. Revision of 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," to clarify and expand it.

DATES: Comments should be submitted on or before (45 days after publication).

ADDRESSES: Interested persons are invited to submit written comments and suggestions on the proposed rule changes and/or the supporting value/impact analysis to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch. Copies of the value/impact analysis and of comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C. Single copies of the value/impact analysis may be obtained on request.

FOR FURTHER INFORMATION CONTACT: Mr. I. C. Roberts, Assistant Director for Siting Standards, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 (phone: 301-443-5985).

SUPPLEMENTARY INFORMATION: By memorandum dated July 31, 1979, the Commission requested that the NRC staff undertake expedited rulemaking on the subject of State and local emergency response plans and those of licensees. The proposed rulemaking described in this notice responds to that request. Time constraints have precluded the careful review and consideration normally given to proposed rule changes before they are published for

comment. Consequently, considerations related to the workability of the proposed rule changes may have been overlooked and significant impacts to NRC, applicants, licensees, and State and local governments may not have been identified. Therefore, the NRC particularly seeks comments addressed to these points and intends to hold a workshop during the public comment period (to be announced) to (a) present the proposed rule changes to State and local governments, utilities, and other interested parties and (b) to obtain comments concerning the costs, impacts, and practicality of the proposed rule changes.

The Nuclear Regulatory Commission is considering the adoption of amendments to its regulation, "Domestic Licensing of Production and Utilization Facilities," 10 CFR Part 50, that would require that emergency response planning considerations be extended to Emergency Planning Zones (discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants"). The amendments also require, as a condition of operating license issuance, that State and local governmental emergency response plans be submitted to and concurred in by the NRC. The proposed rule changes would also require a determination on continued operations of plants where relevant State and local emergency response plans have not received NRC concurrence. In addition, the Nuclear Regulatory Commission is considering revising 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's emergency planning regulations.

The NRC presently requires that power reactor licensees and applicants plan for radiological emergencies within their plant sites and make arrangements with State and local organizations to respond to accidents that might have consequences beyond the site boundary. In this way, offsite emergency response planning has been related to the nuclear licensing process.

To aid State and local governments in the development and implementation of adequate emergency response plans, the NRC, in conjunction with several other Federal agencies, has attempted, on a cooperative and voluntary basis, to provide for training and instruction of State and local government personnel and to establish criteria to guide the preparation of emergency response plans. However, in the past, the NRC has not made NRC concurrence in State and local emergency response plans a condition of operating license issuance; the proposed rule changes would do so. They would also require a determination on continued operation of plants where relevant State and local emergency response plans have not received NRC concurrence.

The accident at Three Mile Island has raised a number of questions about the adequacy of radiological emergency response plans. Even before the accident the GAO had recommended that "NRC not license new power plants for operation unless offsite emergency plans have been concurred in by the NRC" (Report to the Congress by the Comptroller General, "Areas Around Nuclear Facilities Should Be Better Prepared For Radiological Emergencies," EMD-78-110, March 30, 1979). The proposed rule changes are responsive to that recommendation. The Commission is also proposing to incorporate

in its regulations the concept of the Emergency Planning Zone which is based on a joint NRC/EPA Task Force Report, "Planning Basis for Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," NUREG-0396/EPA 520/1-78-016, December 1978.

Furthermore, Congress has voiced its concern about the problems associated with the emergency preparedness area in Senate Bill S.562 as well as in House Report No. 96-413 titled, "Emergency Planning Around U.S. Nuclear Power Plants; Nuclear Regulatory Commission Oversight." The Commission's proposed rule changes address many of the concerns mentioned in these Congressional documents.

Advance Notice of Proposed Rulemaking

On July 17, 1979, the Commission published an Advance Notice of Proposed Rulemaking (44 FR 41483) on the subject of State and local emergency response plans and those of licensees. The Commission directed that an emergency planning rulemaking be considered a matter of high priority and that the rulemaking procedure be completed expeditiously. To date, approximately 110 comment letters have been received from the public in response to the Advance Notice of Proposed Rulemaking. A NUREG report containing preliminary staff analyses of these comments will be published shortly.

The proposed rule changes meet many of the concerns discussed in the above mentioned reports and publications. However, the Commission notes that the proposed rule changes are considered as an interim upgrade of NRC emergency planning regulations and, in essence, clarify and expand areas that have been perceived to be deficient as a result of past experiences.

These proposed rule changes are deemed interim because the Commission anticipates that further changes in the emergency planning regulations may be proposed as more experience is gained with implementing these revised regulations, as the various Three Mile Island investigations are concluded, and as the results become available from efforts in such areas as instrumentation and monitoring and generic studies of accident models.

Publication of these proposed rule changes in the Federal Register supersedes and thus eliminates the need to continue development of the proposed rule change to 10 CFR Part 50, Appendix E (43 FR 37473), published on August 23, 1978, regarding Emergency Planning considerations outside the Low Population Zone (LPZ).

In cases where a construction permit has already been issued, the emergency plans will be reviewed at the operating license stage. The Commission regards dealing with this matter at the operating license stage, as opposed to reopening construction permit reviews, to be appropriate.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and section 553 of title 5 of the United States Code, notice is hereby given that adoption of the following amendments to 10 CFR Part 50 and Appendix E to 10 CFR Part 50 is contemplated.

Copies of comments received on the proposed amendments may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

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

1432 181

§50.33 Contents of applications; general information.

* * * * * * *

(g) If the application is for an operating license, the State and local government radiological emergency response plans of governmental entities wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)[1] that have been reviewed and concurred in[2] by NRC shall be submitted. If the State and local government plans have not been concurred in by NRC, no operating license will be issued. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs surrounding a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

2. Section 50.54 is amended by adding four new paragraphs, (s), (t), (u) and (v) as follows:

§50.54 Conditions of licenses

* * * * * * *

(s) Each licensee who is authorized to possess and/or operate a nuclear power facility shall submit within 180 days from the effective

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear

date of this amendment the State and local governments emergency response plans of governmental entities wholly or partially within the plume exposure pathway EPZ[1] that have been reviewed and concurred in[2] by NRC. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs for a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, and land characteristics, access routes, and local jurisdictional boundaries. If the State and local government emergency response plans have not been concurred in within 180 days from the effective date of this amendment, the Commission will determine whether the licensee should cease operation or reduce the maximum power level of operation until such plans have received NRC concurrence.

(t) If during the life of a nuclear power facility, the Commission determines that the State and local government emergency response plans do not warrant continued NRC concurrence and such State or local government(s) fail(s) to correct such deficiences within 4 months of the date of notification of NRC concurrence withdrawal, the Commission will cause such determination to be published in the newspaper of greatest circulation in such State(s) and will determine whether each such facility should cease operation or reduce the maximum power level of operation until the plan(s) is(are) submitted and has(have) again received NRC review and concurrence.

1432 183

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

(u) The licensee shall provide for the development, revision, implementation and maintenance of its emergency preparedness program. To this end, the licensee shall provide for a review of its emergency preparedness program at least every 12 months by individuals independent of those who have direct responsibility for implementation of the emergency preparedness program. The review shall include a review and audit of licensee drills, exercises, capabilities, and procedures. The results of the review and audit, along with recommendations for improvements, shall be documented, reported to the licensee's corporate and plant management, and kept available at the plant for inspection for a period of five years.

(v) Each licensee who is authorized to possess and/or operate a production and utilization facility shall have plans for coping with emergencies which meet the requirements of Appendix E of this Chapter.

3. 10 CFR Part 50, Appendix E, is amended as follows:

* * * * * * *

APPENDIX E--EMERGENCY PLANNING AND PREPAREDNESS [PLANS] FOR PRODUCTION AND UTILIZATION FACILITIES[1]

I. Introduction

Each applicant for a construction permit is required by §50.34(a) to include in its preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating

1432 184

[1]The NRC staff has developed three regulatory guides: 1.101, "Emergency Planning for Nuclear Power Plants," 2.6, "Emergency Planning for Research Reactors," and 3.42, "Emergency Planning in Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70"; and NUREG-0610 "Draft Emergency Level Action Guidelines for Nuclear Power Plants" (September 1979) [a document entitled "Guide to the Preparation of Emergency Plans for Production and Utilization Facilities"] to help applicants establish adequate plans required pursuant to §50.34 and this Appendix for coping with emergencies. The guides [is] are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies of guides may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Publications Sales Manager.

license is required by §50.34(b) to include in its final safety analysis report plans for coping with emergencies.

This appendix establishes minimum requirements for emergency plans for use in attaining a state of emergency preparedness. These plans shall be described in the preliminary safety analysis report and submitted as a part of the final safety analysis report. Emergency response plans of offsite organizations, including State and local governments, shall be submitted with the applicant's emergency plans. ~~(Procedures used in the detailed implementation of emergency plans need not be described in the preliminary or final safety analysis reports.)~~

II. The Preliminary Safety Analysis Report

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

As a minimum, the following items shall be described:

A. Onsite and offsite [The] 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

1432 185

[2]The size of the EPZs for a nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles radius and the ingestion pathway EPZ an area about 50 miles in radius. EPZs are discussed in NUREG-0396.

for coping with emergencies, including identification of the principal agencies.

C. Protective measures to be taken in the event of an accident within and outside the site boundary to protect health and safety; corrective measures to prevent damage to onsite and offsite property; and the expected response, in the event of an emergency, of offsite agencies;

D. Features of the facility to be provided for onsite emergency first aid and decontamination, and for emergency transportation of onsite individuals to offsite treatment facilities;

E. Provisions to be made for emergency treatment ~~of individuals~~ at offsite facilities of individuals injured as a result of licensed activities;

F. ~~[The training program for employees and for other persons not employees of the licensee, whose services may be required in coping with an emergency;]~~ Provisions for a training program for employees of the licensee, including those who are assigned specific authority and responsibility in the event of an emergency, and for other persons whose assistance may be needed in the event of a radiological emergency;

G. Features of the facility to be provided to ensure the capability for actuating onsite protective measures ~~[plant evacuation]~~ and the capability for facility reentry in order to mitigate the consequences of an accident or, if appropriate, to continue operation;

H. Preliminary analysis which projects the time and means to be employed in the notification of State and local governments and the public in the event of an emergency. A preliminary evacuation feasibility analysis shall also be submitted for projected transient and permanent populations within the plume exposure pathway EPZ.

1432 186

III. The Final Safety Analysis Report

The Final Safety Analysis Report shall contain the emergency plan for coping with emergencies. [The details of these plans and the details of their implementation need not be included, but] The plans shall be an expression of the overall concept of operation, which describe the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. The plans shall incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information shall be sufficient to provide assurance of coordination among the supporting groups and between them and the licensee.

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 within the Emergency Planning Zones (EPZs).[2]

IV. Content of Emergency Plans

The applicant's emergency plans shall contain, but not necessarily be limited to, the following elements: organization for coping with radiation emergencies, assessment action, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery.

A. ORGANIZATION

The organization for coping with radiological emergencies shall be described including definitions of authorities, responsibilities and duties of individuals assigned to licensee's emergency organization.

and the means of notification of such individuals in the event of an emergency. Specifically, the following shall be included:

1. A description of the normal plant operating organization.
2. A description of the onsite emergency response organization with a detailed discussion of:
   a. Authorities, responsibilities and duties of the individual(s) who will take charge during an emergency;
   b. Plant staff emergency assignments;
   c. Authorities, responsibilities, and duties of an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures.
3. A description of the licensee headquarters personnel that will be sent to the plant site to provide augmentation of the onsite emergency organization.
4. Identification, by position and 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- or long-term emergencies shall also be identified. The special qualifications of these persons shall be described.
5. A description of the local offsite services to be provided in support of the licensee emergency organization.
6. Identification of and expected assistance from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies.

B. ASSESSMENT ACTIONS

The means to be provided for determining the magnitude and continued assessment of the release of radioactive materials shall be described 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 along with appropriate meteorological information for determining when protective measures should be considered within and outside the site boundary to protect health and safety and prevent damage to property. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed upon by the applicant and State and local governmental authorities. They shall also be reviewed with the State and local governmental authorities on an annual basis.

C. ACTIVATION OF EMERGENCY ORGANIZATION

The entire spectrum of emergency conditions which involve the alerting or activation of progressively larger segments of the total emergency organization shall be described. The communication steps taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies.

1432 189

D. NOTIFICATION PROCEDURES

[Procedures] Administrative and physical means 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] that become necessary, [or desirable] shall be described. This description shall include identification of the principal officials, by title and agencies, for the Emergency Planning Zones[2] (EPZs). Provisions shall be described for the yearly dissemination of basic emergency planning information and a description of the proposed warning systems to the occupants of the plume exposure pathway Emergency Planning Zone.

Administrative and physical means, and the time required, for prompt alerting and providing instructions to the public within the plume exposure pathway Emergency Planning Zone shall be described. It is the applicant's responsibility to ensure that such means exist, regardless of who implements this.

[F. Provisions for maintaining up-to-date maps. The organization for coping with emergencies; G. The procedures for use in emergencies; and H. The lists of persons with special qualifications for coping with emergency conditions;

E. EMERGENCY FACILITIES AND EQUIPMENT

Provisions shall be made and described for emergency facilities and equipment, including:

1. Equipment at the site for personnel monitoring;

2. Equipment for determining the magnitude and for continuously assessing the release of radioactive materials to the environment;

Enclosure (1)

3. Facilities and supplies at the site for decontamination of onsite individuals;

4. Facilities and medical supplies at the site for appropriate emergency first aid treatment;

5. Arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies;

6. Arrangements for transportation of injured or contaminated individuals from the site to treatment facilities outside the site boundary;

7. Arrangements for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary;

8. One onsite and one offsite Emergency Control Center from which effective direction can be given and effective control can be exercised during an emergency;

9. At least one onsite and one offsite communications system, including redundant power sources. This will include the communication arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Where consistent with function of the governmental agency, these arrangements will include:

a. Provision for communications with contiguous State/local governments within the plume exposure pathway Emergency Planning Zone. Such communications shall be tested monthly.

b. Provision for communications with Federal emergency response organizations.

c. Provision for communications between the nuclear facility, State and/or local emergency operations centers, and field assessment teams.

1432 191

F. TRAINING

The program to provide [~~Provisions~~] for (1) the training of employees and [testing] exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and [~~provisions for~~] (2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency shall be described. 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:

a. Directors or coordinators of the plant emergency organization.

b. Personnel responsible for accident assessment, including control room shift personnel.

c. Radiological monitoring teams.

d. Fire control teams (fire brigades).

e. Repair and damage control teams.

f. First aid and rescue teams.

g. Local services personnel, e.g., local Civil Defense and local law enforcement personnel.

h. Medical support personnel.

i. Licensee's headquarters support personnel.

j. Security personnel.

The plan shall describe provisions for the conduct of yearly drills and exercises to test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment and communication networks, and to ensure that emergency organization personnel are familiar

with their duties. Such provisions shall specifically include participation by offsite personnel as described above as well as other State and local governmental agencies. The plan shall also describe provisions for a joint exercise involving the Federal, State, and local response organizations. The scope of such an exercise should test as much of the emergency plans as is reasonably achievable without involving full public participation. Definitive performance criteria shall be established for all levels of participation to ensure an objective evaluation. This joint Federal, State, and local exercise shall be scheduled once every five years.

All training provisions shall provide for formal critiques in order to evaluate the emergency plan's effectiveness and to correct weak areas through feedback with emphasis on schedules, lesson plans, practical training, and periodic examinations.

G. MAINTAINING EMERGENCY PREPAREDNESS

Provisions to be employed to ensure that the emergency plan, its implementing procedures and emergency equipment and supplies are maintained up to date shall be described.

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, 10 copies of the applicant's detailed implementing procedures for its emergency plan shall be submitted to the appropriate NRC Regional Office.

Within 30 days after the effective date of this amendment, licensees who are authorized to operate a nuclear power facility shall submit 10 copies of the licensee's emergency plan implementing procedures to the appropriate NRC Regional Office. As necessary to maintain them up to date thereafter, 10 copies of any changes to these implementing procedures shall be submitted to the same NRC Regional Office within 15 days of such changes.

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

November 8, 1979 SECY-79-591A

INFORMATION REPORT

For: The Commissioners

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

Thru: Executive Director for Operations

Subject: AN ADDITION TO THE PROPOSED AMENDMENTS TO 10 CFR PART 50, SECTIONS 50.33, 50.54, AND APPENDIX E, PLANS FOR COPING WITH EMERGENCIES AT PRODUCTION AND UTILIZATION FACILITIES

Purpose: To add a requirement to proposed rule changes (SECY-79-591) that would codify applicability of Appendix E changes to all operating plants.

Discussion: SECY-79-591 contains proposed changes to 10 CFR Part 50, §50.33 and §50.54, as well as clarification and expansion changes to 10 CFR Part 50, Appendix E. The proposed changes to Appendix E would expand requirements for specification of emergency action levels, dissemination of information, alerting the public, establishment of control centers, communications systems, training, and maintenance of emergency plans. Since preparation of SECY-79-591, it has come to the staff's attention that the aspect of backfitting the new proposed Appendix E requirements to operating plants is not specifically addressed in SECY-79-591 in the rule changes proposed by that paper. This point was not included in proposed changes because all operating reactors are currently being required by NRR to upgrade their emergency planning. An action plan for this activity was forwarded to the Commission on July 23, 1979 (SECY-79-450), and a progress report was submitted on September 12, 1979 (SECY-79-450A). Licensees' emergency planning is being required to be brought into conformance with the provisions of Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants." The changes to Appendix E proposed in SECY-79-591 derive from Regulatory Guide 1.101 and are consistent with NRR's current emergency planning upgrade activity.

Upon further consideration, however, it is the staff view that codification of the applicability of the Appendix E changes would eliminate possible misunderstandings and facilitate their application. Therefore, a new Section (v) is added to §50.54 which requires each licensee of an operating plant to have plans for coping with an emergency which meet the requirements of Appendix E.

Enclosure A is forwarded to provide replacement pages 7, 8, and 9 to Enclosure A in SECY-79-591 which adds paragraph (v) to Section 50.54.

Cost Estimates: This addition does not change the cost estimates projected in SECY-79-591.

Contact:
M.T. Jamgochian
443-5981

Coordination: The Offices of Nuclear Reactor Regulation, Inspection and Enforcement, State Programs, Research, and Nuclear Material Safety and Safeguards concur in the recommendation to publish for public comment the proposed rule changes. The Executive Legal Director has no legal objection to this recommendation. The Office of Public Affairs is preparing a public announcement.

Robert B Minogue

Robert B. Minogue, Director
Office of Standards Development

Enclosure:
"A" - Replacement pages 7, 8, and 9
to Enclosure A in SECY-79-591

SECY NOTE: SECY-79-591 is tentatively scheduled for a discussion meeting on Wednesday, November 14, 1979 at 1:30 p.m.

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1432 196

§50.33 Contents of applications; general information.

* * * * * * *

(g) If the application is for an operating license, the State and local government radiological emergency response plans of governmental entities wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)[1] that have been reviewed and concurred in[2] by NRC shall be submitted. If the State and local government plans have not been concurred in by NRC, no operating license will be issued. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs surrounding a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

2. Section 50.54 is amended by adding four new paragraphs, (s), (t), (u) and (v) as follows:

§50.54 Conditions of licenses

* * * * * * *

(s) Each licensee who is authorized to possess and/or operate a nuclear power facility shall submit within 180 days from the effective

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear

date of this amendment the State and local governments emergency response plans of governmental entities wholly or partially within the plume exposure pathway EPZ[1] that have been reviewed and concurred in[2] by NRC. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs for a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, and land characteristics, access routes, and local jurisdictional boundaries. If the State and local government emergency response plans have not been concurred in within 180 days from the effective date of this amendment, the Commission will determine whether the licensee should cease operation or reduce the maximum power level of operation until such plans have received NRC concurrence.

(t) If during the life of a nuclear power facility, the Commission determines that the State and local government emergency response plans do not warrant continued NRC concurrence and such State or local government(s) fail(s) to correct such deficiences within 4 months of the date of notification of NRC concurrence withdrawal, the Commission will cause such determination to be published in the newspaper of greatest circulation in such State(s) and will determine whether each such facility should cease operation or reduce the maximum power level of operation until the plan(s) is(are) submitted and has(have) again received NRC review and concurrence.

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."
[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

(u) The licensee shall provide for the development, revision, implementation and maintenance of its emergency preparedness program. To this end, the licensee shall provide for a review of its emergency preparedness program at least every 12 months by individuals independent of those who have direct responsibility for implementation of the emergency preparedness program. The review shall include a review and audit of licensee drills, exercises, capabilities, and procedures. The results of the review and audit, along with recommendations for improvements, shall be documented, reported to the licensee's corporate and plant management, and kept available at the plant for inspection for a period of five years.

(v) Each licensee who is authorized to possess and/or operate a production and utilization facility shall have plans for coping with emergencies which meet the requirements of Appendix E of this Chapter.

3. 10 CFR Part 50, Appendix E, is amended as follows:

* * * * * * *

APPENDIX E--EMERGENCY PLANNING AND PREPAREDNESS [~~PLANS~~] FOR PRODUCTION AND UTILIZATION FACILITIES[1]

I. Introduction

Each applicant for a construction permit is required by §50.34(a) to include in its preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating

[1]The NRC staff has developed three regulatory guides: 1.101, "Emergency Planning for Nuclear Power Plants," 2.6, "Emergency Planning for Research Reactors," and 3.42, "Emergency Planning in Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70"; and NUREG-0610 "Draft Emergency Level Action Guidelines for Nuclear Power Plants" (September 1979) [~~a document entitled "Guide to the Preparation of Emergency Plans for Production and Utilization Facilities"~~] to help applicants establish adequate plans required pursuant to §50.34 and this Appendix for coping with emergencies. The guides [~~is~~] are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies of guides may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Publications Sales Manager.

October 26, 1979

SECY-79-591

COMMISSIONER ACTION

For: The Commissioners

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

Thru: Executive Director for Operations TMR for L.V.G.

Subject: PROPOSED AMENDMENTS TO 10 CFR PART 50, SECTIONS 50.33, 50.54 AND APPENDIX E; PLANS FOR COPING WITH EMERGENCIES AT PRODUCTION AND UTILIZATION FACILITIES

Purpose: To obtain Commission approval for publication of the subject proposed rule change in the Federal Register.

Category: This paper covers a major policy question.

Issue: How should emergency planning regulations be changed to respond to the concerns expressed by the Commission and to criticisms expressed by the GAO, Congressional committees, and others?

Discussion: By memorandum dated July 31, 1979,* the Commission requested expedited rulemaking on the subject of State and local emergency response plans and those of licensees. The rulemaking described in this paper is submitted in response to that request. The haste with which this paper was prepared precluded the critical review normally given to actions of comparable significance. Consequently, the staff is concerned that important considerations related to the workability of the proposed rule changes may have been overlooked and that all significant impacts to NRC, applicants, licensees, and State and local governments may not have been identified. Therefore, the staff intends to hold a public workshop during the public comment period to (a) present the proposed rule changes to State and local governments, utilities, and other interested parties and (b) to obtain comments concerning the costs, impacts, and workability of the proposed rule changes. The staff believes it is likely, as a result of expected public comment, that further changes may be indicated in the rule as proposed.

Proposed Changes Considered Interim Upgrade of Rule 1432 200

The proposed rule changes are considered as an interim upgrade of NRC emergency planning regulations to provide prompt clarification and expansion in areas that have been perceived to be deficient as a result of past experiences. These proposed rule changes are deemed interim because the staff anticipates that further changes in the emergency planning regulations may be proposed as more experience is gained by implementing these revised regulations. Also, changes may be proposed as the various Three Mile Island (TMI) investigations are concluded and the results become available from efforts in such areas as instrumentation and monitoring and generic studies of accident mo[illegible]

*SECY NOTE: Ref: Memorandum Chilk to Gossick dat[illegible] titled "Commission Guidance on Emergency Pl[illegible]

Three Major Changes

The proposed rule contains three major changes from current practices. The proposed rule would:

1. Require that an applicant's emergency plans, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. (NRC concurrence in State and local plans is not required at the construction permit stage.) Additionally:

   a. An operating plant may be required to cease operation or reduce power levels if a State or local emergency plan has not received NRC concurrence within 180 days of the effective date of the final amendments.

   b. An operating plant may be required to cease operation or reduce power levels if a State or local emergency plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

2. Require that emergency planning considerations be extended to "Emergency Planning Zones," as discussed in NUREG-0396.

3. Require that detailed emergency planning implementing procedures of both licensees and applicants for operating licenses be submitted to NRC for review. This review would determine the acceptability of such procedures in providing reasonable assurance that emergency measures can be taken to protect the public health and safety in the event of a radiological emergency. The Office of Inspection and Enforcement would perform this review, as it does for other implementing procedures. The proposed rule, as drafted, would not require approval of the procedures. Approval would represent a departure from the manner in which detailed implementing procedures in all other areas (e.g., operation, radiological protection, safeguards) are now examined and would require a considerable increase in staff resources.

It should be noted that these proposed amendents could enable State and local authorities to thwart the licensing process and possibly cause shutdown of facilities by refusing to develop emergency plans (a) that are acceptable for NRC concurrence and (b) that extend to acceptable distances (EPZ). A discussion of each of the above major changes is provided in Enclosure "C".

Additional Changes

In addition, the staff is proposing to revise 10 CFR Part 50, Appendix E "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's Emergency Planning regulations. Sections of Appendix E that would be expanded are:

1. Specification of "Emergency Action Levels" (Sections IV.B and C),

2. Dissemination to the public of basic emergency planning information (Section IV.D),

3. Provisions for prompt alerting of the public and instructions for public protection (Section IV.D),

4. Onsite and offsite emergency control centers (Section IV.E),

5. Redundant communications systems (Section IV.E),

6. Specialized training (Section IV.F), and

7. Provisions for up-to-date plan maintenance (Section IV.G).

Applicants for a construction permit would not be affected by the changes in Sections 50.33 and 50.54 but would be required to submit more information as required in the new Section II of Appendix E.

All operating reactors are currently being required by NRR to upgrade their emergency planning. An action plan for this activity was forwarded to the Commission on July 23, 1979 (SECY 79-450), and a progress report on September 12, 1979 (SECY 79-450A). Licensees' emergency planning is being required to be brought into conformance with the provisions of Regulatory Guide 1.101, "Emergency Planning For Nuclear Power Plants." The proposed amendments to Appendix E derive from Regulatory Guide 1.101 and are, therefore, consistent with NRR's current emergency planning upgrade activity. Furthermore, pending the receipt of comments and the promulgation of a final rule, NRR intends to use the proposed amendments to Appendix E in reviewing applicants' emergency plans for construction permits. In cases where a construction permit has already been issued, the emergency plans will be reviewed at the operating license stage in accordance with the proposed amendments or, depending on timing, the amendments as promulgated in final form. Dealing with this matter at the operating license stage, as opposed to reopening construction permit reviews, is thought to be appropriate.

Reports Containing Criticism of Present Emergency Planning

Criticisms in the emergency planning area have been identified in a number of recent reports by various organizations. Many of these

criticisms are dealt with in the context of this proposed rulemaking. Details of the staff's proposed resolving actions on the following reports are found in Enclosure "B":

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

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

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

4. Senate Bill S.562 - involves concurrence and adequacy of State and Local Emergency Plans.

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

Background Information:

The NRC presently requires that applicants for power reactor licenses include in their applications plans for coping with radiological emergencies within their plant sites and make arrangements with State and local organizations to respond to accidents that might have consequences beyond the site boundary.

To aid State and local governments in the development and implementation of adequate emergency plans, the NRC, in conjunction with several other Federal agencies, has attempted, on a cooperative and voluntary basis, to provide for training and instruction of State and local government personnel and to establish criteria to guide the preparation of emergency plans. However, in the past, the NRC has not made NRC concurrence in State and local emergency plans a condition of nuclear power plant operation. The proposed rule changes would make NRC concurrence in State and local emergency response plans a condition for issuing an operating license. They would also require a determination on continued operation of plants where relevant State and local plans have not received NRC concurrence.

On July 17, 1979, the Commission published an advance notice of proposed rulemaking on the subject of State and local emergency response plans and those of licensees. The Commission directed that rulemaking on the subject of emergency planning be considered a matter of high priority and that the rulemaking procedure be completed expeditiously. To date, approximately 90 comment letters have been received in response to the Advance Notice of Proposed Rulemaking (44 FR 41483). Preliminary staff analyses of these comments will be issued shortly

as a NUREG report. We intend to forward a draft of this report to the Commission to serve as Enclosure "F" to this paper the week of November 5.

No Alternative Proposals: No alternative proposals have been identified because Commission guidance on the content of the proposed rule was quite clear and because of the expedited nature of this rulemaking.

Cost Estimate: A preliminary, and probably low, estimate of the cost of implementing the proposed rule changes are:

a. 5 man-years per year of NRC staff effort

b. $70,000 per affected State for the first year and $20,000 per affected State per year thereafter

c. 3 man-years per year per licensee.

Recommendations: That the Commission:

1. Approve the notice of proposed rulemaking (Enclosure "A").

2. Note

a. That a letter such as that in Enclosure "D" will be sent to the Subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs, the Subcommittee on Energy and Power of the Committee on Interstate and Foreign Commerce, and the Subcommittee on Environment, Energy and Natural Resources of the Committee on Government Operations, of the U.S. House of Representatives, and the Subcommittee on Nuclear Regulation of the Committee on Environmental and Public Works of the U.S. Senate.

b. That the notice of proposed rulemaking in Enclosure "A" will be published in the Federal Register allowing 45 days for public comment; and that a copy of the Federal Register notice will be sent to all applicants, licensees, and State governmen

c. That pursuant to § 51.5(d) of Part 51 of the Commission's regu lations, neither an environmental impact statement nor a negative declaration need be prepared in connection with the proposed amendments since the proposed amendments are non-substantive and insignificant from the standpoint of environmental impact.

d. Publication of the subject proposed rule changes in the Federal Register would supersede and thus eliminate the need to continue development of the proposed rule change to 10 CFR

Part 50, Appendix E (43 FR 37473), published on August 23, 1978, regarding Emergency Planning considerations outside the Low Population Zone (LPZ).

Coordination: The Offices of Nuclear Reactor Regulation, Inspection and Enforcement, State Programs, and Nuclear Material Safety and Safeguards concur in the recommendation to publish for public comment the proposed rule changes. The Executive Legal Director has no legal objection to this recommendation. The Office of Public Affairs is preparing a public announcement.

Robert B. Minogue

Robert B. Minogue, Director
Office of Standards Development

Enclosures:
"A" - Federal Register Notice of Proposed Rulemaking
"B" - Staff Recommendations for Resolving Criticism of Emergency Planning as Found in Five Recent Reports
"C" - Discussion of Major Proposed Changes to the Emergency Planning Regulations
"D" - Draft Congressional Letter
"E" - Preliminary Value/Impact Analysis
"F" - Preliminary Analyses of Public Comments (to be supplied)
"G" - NUREG-0610
"H" - Proposed Revision 2 to Regulatory Guide 1.97

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Wednesday, November 7, 1979.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT November 1, 1979, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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1432 205

ENCLOSURE A

NUCLEAR REGULATORY COMMISSION

[10 CFR Part 50 and
10 CFR Part 50, Appendix E]

EMERGENCY PLANNING

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Proposed Rule Changes

SUMMARY: The Nuclear Regulatory Commission is proposing to amend its regulations in order to provide an interim upgrade of NRC emergency planning regulations as follows:

a. Require that an applicant's emergency plans, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. Additionally:

   1. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan has not received NRC concurrence within 180 days of the effective date of the final amendments.

   2. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

b. Require that emergency planning considerations be extended to "Emergency Planning Zones."

1432 207

c. Require that applicants' and licensees' detailed emergency planning implementing procedures be submitted for NRC review.

d. Revision of 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," to clarify and expand it.

DATES: Comments should be submitted on or before (45 days after publication).

ADDRESSES: Interested persons are invited to submit written comments and suggestions on the proposed rule changes and/or the supporting value/impact analysis to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch. Copies of the value/impact analysis and of comments received by the Commission may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C. Single copies of the value/impact analysis may be obtained on request.

FOR FURTHER INFORMATION CONTACT: Mr. I. C. Roberts, Assistant Director for Siting Standards, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 (phone: 301-443-5985).

SUPPLEMENTARY INFORMATION: By memorandum dated July 31, 1979, the Commission requested that the NRC staff undertake expedited rulemaking on the subject of State and local emergency response plans and those of licensees. The proposed rulemaking described in this notice responds to that request. Time constraints have precluded the careful review and consideration normally given to proposed rule changes before they are published for

1432 208

comment. Consequently, considerations related to the workability of the proposed rule changes may have been overlooked and significant impacts to NRC, applicants, licensees, and State and local governments may not have been identified. Therefore, the NRC particularly seeks comments addressed to these points and intends to hold a workshop during the public comment period (to be announced) to (a) present the proposed rule changes to State and local governments, utilities, and other interested parties and (b) to obtain comments concerning the costs, impacts, and practicality of the proposed rule changes.

The Nuclear Regulatory Commission is considering the adoption of amendments to its regulation, "Domestic Licensing of Production and Utilization Facilities," 10 CFR Part 50, that would require that emergency response planning considerations be extended to Emergency Planning Zones (discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants"). The amendments also require, as a condition of operating license issuance, that State and local governmental emergency response plans be submitted to and concurred in by the NRC. The proposed rule changes would also require a determination on continued operations of plants where relevant State and local emergency response plans have not received NRC concurrence. In addition, the Nuclear Regulatory Commission is considering revising 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's emergency planning regulations.

1432 209

The NRC presently requires that power reactor licensees and applicants plan for radiological emergencies within their plant sites and make arrangements with State and local organizations to respond to accidents that might have consequences beyond the site boundary. In this way, offsite emergency response planning has been related to the nuclear licensing process.

To aid State and local governments in the development and implementation of adequate emergency response plans, the NRC, in conjunction with several other Federal agencies, has attempted, on a cooperative and voluntary basis, to provide for training and instruction of State and local government personnel and to establish criteria to guide the preparation of emergency response plans. However, in the past, the NRC has not made NRC concurrence in State and local emergency response plans a condition of operating license issuance; the proposed rule changes would do so. They would also require a determination on continued operation of plants where relevant State and local emergency response plans have not received NRC concurrence.

The accident at Three Mile Island has raised a number of questions about the adequacy of radiological emergency response plans. Even before the accident the GAO had recommended that "NRC not license new power plants for operation unless offsite emergency plans have been concurred in by the NRC" (Report to the Congress by the Comptroller General, "Areas Around Nuclear Facilities Should Be Better Prepared For Radiological Emergencies," EMD-78-110, March 30, 1979). The proposed rule changes are responsive to that recommendation. The Commission is also proposing to incorporate

in its regulations the concept of the Emergency Planning Zone which is based on a joint NRC/EPA Task Force Report, "Planning Basis for Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," NUREG-0396/EPA 520/1-78-016, December 1978.

Furthermore, Congress has voiced its concern about the problems associated with the emergency preparedness area in Senate Bill S.562 as well as in House Report No. 96-413 titled, "Emergency Planning Around U.S. Nuclear Power Plants; Nuclear Regulatory Commission Oversight." The Commission's proposed rule changes address many of the concerns mentioned in these Congressional documents.

Advance Notice of Proposed Rulemaking

On July 17, 1979, the Commission published an Advance Notice of Proposed Rulemaking (44 FR 41483) on the subject of State and local emergency response plans and those of licensees. The Commission directed that an emergency planning rulemaking be considered a matter of high priority and that the rulemaking procedure be completed expeditiously. To date, approximately 110 comment letters have been received from the public in response to the Advance Notice of Proposed Rulemaking. A NUREG report containing preliminary staff analyses of these comments will be published shortly.

The proposed rule changes meet many of the concerns discussed in the above mentioned reports and publications. However, the Commission notes that the proposed rule changes are considered as an interim upgrade of NRC emergency planning regulations and, in essence, clarify and expand areas that have been perceived to be deficient as a result of past experiences.

1432 211

These proposed rule changes are deemed interim because the Commission anticipates that further changes in the emergency planning regulations may be proposed as more experience is gained with implementing these revised regulations, as the various Three Mile Island investigations are concluded, and as the results become available from efforts in such areas as instrumentation and monitoring and generic studies of accident models.

Publication of these proposed rule changes in the Federal Register supersedes and thus eliminates the need to continue development of the proposed rule change to 10 CFR Part 50, Appendix E (43 FR 37473), published on August 23, 1978, regarding Emergency Planning considerations outside the Low Population Zone (LPZ).

In cases where a construction permit has already been issued, the emergency plans will be reviewed at the operating license stage. The Commission regards dealing with this matter at the operating license stage, as opposed to reopening construction permit reviews, to be appropriate.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and section 553 of title 5 of the United States Code, notice is hereby given that adoption of the following amendments to 10 CFR Part 50 and Appendix E to 10 CFR Part 50 is contemplated.

Copies of comments received on the proposed amendments may be examined in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C.

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

1432 212

§50.33 Contents of applications; general information.

* * * * * * *

(g) If the application is for an operating license, the State and local government radiological emergency response plans of governmental entities wholly or partially within the plume exposure pathway Emergency Planning Zone (EPZ)[1] that have been reviewed and concurred in[2] by NRC shall be submitted. If the State and local government plans have not been concurred in by NRC, no operating license will be issued. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs surrounding a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

2. Section 50.54 is amended by adding three new paragraphs, (s), (t), and (u) as follows:

§50.54 Conditions of licenses

* * * * * * *

(s) Each licensee who is authorized to possess and/or operate a nuclear power facility shall submit within 180 days from the effective

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

1432 213

date of this amendment the State and local governments emergency response plans of governmental entities wholly or partially within the plume exposure pathway EPZ[1] that have been reviewed and concurred in[2] by NRC. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The size and configuration of the EPZs for a particular nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, and land characteristics, access routes, and local jurisdictional boundaries. If the State and local government emergency response plans have not been concurred in within 180 days from the effective date of this amendment, the Commission will determine whether the licensee should cease operation or reduce the maximum power level of operation until such plans have received NRC concurrence.

(t) If during the life of a nuclear power facility the Commission determines that the State and local government emergency response plans do not warrant continued NRC concurrence and such State or local government(s) fail(s) to correct such deficiences within 4 months of the date of notification of NRC concurrence withdrawal, the Commission will cause such determination to be published in the newspaper of greatest circulation in such

[1]Emergency Planning Zones (EPZs) are discussed in NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants."

[2]The guidance for preparation and evaluation of State and local emergency response plans leading to NRC concurrence is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 thereto dated March 15, 1977.

1432 214

State(s) and will determine whether each such facility should cease operation or reduce the maximum power level of operation until the plan(s) is(are) submitted and has(have) again received NRC review and concurrence.

(u) The licensee shall provide for the development, revision, implementation and maintenance of its emergency preparedness program. To this end, the licensee shall provide for a review of its emergency preparedness program at least every 12 months by individuals independent of those who have direct responsibility for implementation of the emergency preparedness program. The review shall include a review and audit of licensee drills, exercises, capabilities, and procedures. The results of the review and audit, along with recommendations for improvements, shall be documented, reported to the licensee's corporate and plant management, and kept available at the plant for inspection for a period of five years.

3. 10 CFR Part 50, Appendix E, is amended as follows:

* * * * * * *

APPENDIX E--EMERGENCY PLANNING AND PREPAREDNESS [PLANS] FOR PRODUCTION AND UTILIZATION FACILITIES[1]

I. Introduction

Each applicant for a construction permit is required by §50.34(a) to include in its preliminary safety analysis report a discussion of preliminary plans for coping with emergencies. Each applicant for an operating

[1]The NRC staff has developed three regulatory guides: 1.101, "Emergency Planning for Nuclear Power Plants," 2.6, "Emergency Planning for Research Reactors," and 3.42, "Emergency Planning in Fuel Cycle Facilities and Plants Licensed Under 10 CFR Parts 50 and 70"; and NUREG-0610 "Draft Emergency Level Action Guidelines for Nuclear Power Plants" (September 1979) [~~a document entitled "Guide to the Preparation of Emergency Plans for Production and Utilization Facilities"~~] to help applicants establish adequate plans required pursuant to §50.34 and this Appendix for coping with emergencies. The guides [~~is~~] are available at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555. Copies of guides may be purchased from the Government Printing Office. Information on current prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Publications Sales Manager.

license is required by §50.34(b) to include in its final safety analysis report plans for coping with emergencies.

This appendix establishes minimum requirements for emergency plans for use in attaining a state of emergency preparedness. These plans shall be described in the preliminary safety analysis report and submitted as a part of the final safety analysis report. Emergency response plans of offsite organizations, including State and local governments, shall be submitted with the applicant's emergency plans. (~~Procedures used in the detailed implementation of emergency plans need not be described in the preliminary or final safety analysis report.~~)

II. The Preliminary Safety Analysis Report

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

As a minimum, the following items shall be described:

A. Onsite and offsite [~~The~~] 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

[2]The size of the EPZs for a nuclear power plant shall be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. Generally, the plume exposure pathway EPZ for light water nuclear power plants shall consist of an area about 10 miles radius and the ingestion pathway EPZ an area about 50 miles in radius. EPZs are discussed in NUREG-0396.

for coping with emergencies, including identification of the principal agencies.

C. Protective measures to be taken in the event of an accident within and outside the site boundary to protect health and safety; corrective measures to prevent damage to onsite and offsite property; and the expected response, in the event of an emergency, of offsite agencies;

D. Features of the facility to be provided for onsite emergency first aid and decontamination, and for emergency transportation of onsite individuals to offsite treatment facilities;

E. Provisions to be made for emergency treatment ~~of individuals~~ at offsite facilities of individuals injured as a result of licensed activities;

F. [~~The training program for employees and for other persons not employees of the licensee, whose services may be required in coping with and emergency;~~] Provisions for a training program for employees of the licensee, including those who are assigned specific authority and responsibility in the event of an emergency, and for other persons whose assistance may be needed in the event of a radiological emergency;

G. Features of the facility to be provided to ensure the capability for actuating onsite protective measures [~~plant evacuation~~] and the capability for facility reentry in order to mitigate the consequences of an accident or, if appropriate, to continue operation;

H. Preliminary analysis which projects the time and means to be employed in the notification of State and local governments and the public in the event of an emergency. A preliminary evacuation feasibility analysis shall also be submitted for projected transient and permanent populations within the plume exposure pathway EPZ.

1432 217

III. The Final Safety Analysis Report

The Final Safety Analysis Report shall contain the emergency plan for coping with emergencies. [~~The details of these plans and the details of their implementation need not be included; but~~] The plans shall be an expression of the overall concept of operation, which describe the essential elements of advance planning that have been considered and the provisions that have been made to cope with emergency situations. The plans shall incorporate information about the emergency response roles of supporting organizations and offsite agencies. That information shall be sufficient to provide assurance of coordination among the supporting groups and between them and the licensee.

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 within the Emergency Planning Zones (EPZs).[2]

IV. Content of Emergency Plans

The applicant's emergency plans shall contain, but not necessarily be limited to, the following elements: organization for coping with radiation emergencies, assessment action, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery.

A. ORGANIZATION

The organization for coping with radiological emergencies shall be described including definitions of authorities, responsibilities and duties of individuals assigned to licensee's emergency organization,

1432 218

and the means of notification of such individuals in the event of an emergency. Specifically, the following shall be included:

1. A description of the normal plant operating organization.
2. A description of the onsite emergency response organization with a detailed discussion of:
   a. Authorities, responsibilities and duties of the individual(s) who will take charge during an emergency;
   b. Plant staff emergency assignments;
   c. Authorities, responsibilities, and duties of an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures.
3. A description of the licensee headquarters personnel that will be sent to the plant site to provide augmentation of the onsite emergency organization.
4. Identification, by position and 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- or long- erm emergencies shall also be identified. The special qualifications of these persons shall be described.
5. A description of the local offsite services to be provided in support of the licensee emergency organization.
6. Identification of and expected assistance from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies.

1432 219

B. ASSESSMENT ACTIONS

The means to be provided for determining the magnitude and continued assessment of the release of radioactive materials shall be described 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 along with appropriate meteorological information for determining when protective measures should be considered within and outside the site boundary to protect health and safety and prevent damage to property. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite and offsite monitoring. These emergency action levels shall be discussed and agreed upon by the applicant and State and local governmental authorities. They shall also be reviewed with the State and local governmental authorities on an annual basis.

C. ACTIVATION OF EMERGENCY ORGANIZATION

The entire spectrum of emergency conditions which involve the alerting or activation of progressively larger segments of the total emergency organization shall be described. The communication steps taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies.

1432 220

D. NOTIFICATION PROCEDURES

[Procedures] Administrative and physical means 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] that become necessary, [or-desirable] shall be described. This description shall include identification of the principal officials, by title and agencies, for the Emergency Planning Zones[2] (EPZs). Provisions shall be described for the yearly dissemination of basic emergency planning information and a description of the proposed warning systems to the occupants of the plume exposure pathway Emergency Planning Zone.

Administrative and physical means, and the time required, for prompt alerting and providing instructions to the public within the plume exposure pathway Emergency Planning Zone shall be described. It is the applicant's responsibility to ensure that such means exist, regardless of who implements this.

[E.--Provisions-for-maintaining-up-to-date---1.--The-organization for-coping-with-emergencies;-2.--the-procedures-for-use-in-emergencies; and-3.--the-lists-of-persons-with-special-qualifications-for-coping with-emergency-conditions;

E. EMERGENCY FACILITIES AND EQUIPMENT

Provisions shall be made and described for emergency facilities and equipment, including:

1. Equipment at the site for personnel monitoring;

2. Equipment for determining the magnitude and for continuously assessing the release of radioactive materials to the environment;

1432 221

3. Facilities and supplies at the site for decontamination of onsite individuals;

4. Facilities and medical supplies at the site for appropriate emergency first aid treatment;

5. Arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies;

6. Arrangements for transportation of injured or contaminated individuals from the site to treatment facilities outside the site boundary;

7. Arrangements for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary;

8. One onsite and one offsite Emergency Control Center from which effective direction can be given and effective control can be exercised during an emergency;

9. At least one onsite and one offsite communications system, including redundant power sources. This will include the communication arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Where consistent with function of the governmental agency, these arrangements will include:

a. Provision for communications with contiguous State/local governments within the plume exposure pathway Emergency Planning Zone. Such communications shall be tested monthly.

b. Provision for communications with Federal emergency response organizations.

c. Provision for communications between the nuclear facility, State and/or local emergency operations centers, and field assessment teams.

F. TRAINING

The program to provide [Provisions] for (1) the training of employees and [testing] exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and [provisions for] (2) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency shall be described. 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:

a. Directors or coordinators of the plant emergency organization.

b. Personnel responsible for accident assessment, including control room shift personnel.

c. Radiological monitoring teams.

d. Fire control teams (fire brigades).

e. Repair and damage control teams.

f. First aid and rescue teams.

g. Local services personnel, e.g., local Civil Defense and local law enforcement personnel.

h. Medical support personnel.

i. Licensee's headquarters support personnel.

j. Security personnel.

The plan shall describe provisions for the conduct of yearly drills and exercises to test the adequacy of timing and content of implementing procedures and methods, to test emergency equipment and communication networks, and to ensure that emergency organization personnel are familiar

1432 223

with their duties. Such provisions shall specifically include participation by offsite personnel as described above as well as other State and local governmental agencies. The plan shall also describe provisions for a joint exercise involving the Federal, State, and local response organizations. The scope of such an exercise should test as much of the emergency plans as is reasonably achievable without involving full public participation. Definitive performance criteria shall be established for all levels of participation to ensure an objective evaluation. This joint Federal, State, and local exercise shall be scheduled once every five years.

All training provisions shall provide for formal critiques in order to evaluate the emergency plan's effectiveness and to correct weak areas through feedback with emphasis on schedules, lesson plans, practical training, and periodic examinations.

G. MAINTAINING EMERGENCY PREPAREDNESS

Provisions to be employed to ensure that the emergency plan, its implementing procedures and emergency equipment and supplies are maintained up to date shall be described.

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, 10 copies of the applicant's detailed implementing procedures for its emergency plan shall be submitted to the appropriate NRC Regional Office.

1432 224

Within 30 days after the effective date of this amendment, licensees who are authorized to operate a nuclear power facility shall submit 10 copies of the licensee's emergency plan implementing procedures to the appropriate NRC Regional Office. As necessary to maintain them up to date thereafter, 10 copies of any changes to these implementing procedures shall be submitted to the same NRC Regional Office within 15 days of such changes.

ENCLOSURE B

DISCUSSION OF RECENT REPORTS

ON EMERGENCY PLANNING

A. EPA/NRC Task Force Report: "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (NUREG-0396, December 1978). This report recommended the use of "Emergency Planning Zones" (EPZs) as the basis for emergency planning. Generally, the plume exposure pathway EPZ for light water nuclear power plants would consist of an area about 10 miles in radius and an area of about 50 miles in radius for the ingestion pathway EPZ. However, the task force recommended that judgment be used in determining the exact size and configuration of the EPZs surrounding a particular nuclear power plant, with consideration given to such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. In its analysis, the Task Force took account of the possibility of some Class 9 accidents and concluded that the zones it recommended were of sufficient size to ensure that planning would be adequate to protect the public in the event of such accidents.

The proposed rule changes would adopt the use of EPZs as the basis for emergency planning. This is consistent with the Commission's recent policy statement on the use of EPZs for State and local emergency planning.

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

This report recommended that the NRC:

1. "Require that the people living near nuclear facilities be periodically provided with information about the potential hazard, emergency actions planned, and what to do in the event of an accidental radiological release."

2. "Allow nuclear power plants to begin operation only where State and local emergency response plans contain all of the Commission's essential planning elements. In addition, the Commission should require license applicants to make agreements with State and local agencies assuring their full participation in annual emergency drills over the life of the facility."

3. "Establish an emergency planning zone of about 10 miles around all nuclear power plants as recommended by the Environmental Protection Agency/ Nuclear Regulatory Commission Task Force, and require licensees to modify their emergency plans accordingly."

All recommendations made by the GAO report are incorporated in the proposed rule changes. (See Appendix E, Section IV, paragraph D for item 1.; see §§50.33, 50.54, and Appendix E for items 2. and 3.)

C. "NRC Siting Policy Task Force Report": (NUREG-0625, August 1979) recommended that Part 100 be modified to require that there be set a minimum distance to the outer boundary of a zone in which emergency planning is required. The Task Force recommended a minimum distance to the plume exposure pathway EPZ outer boundary in the range of 10 miles, as appropriate.

The proposed rule changes are generally comparable with the Siting Policy Task Force recommendation to use the EPZ concepts as the basis for emergency planning. For actual emergency planning purposes, in order to allow for needed flexibility in dealing with unique local conditions, the proposed rule changes to Part 50 would establish a plume exposure pathway EPZ of about 10 miles. For

purposes of site evaluation, presumably for comparative site evaluation of alternative sites, the Siting Policy Task Force has recommended a fixed plume exposure pathway EPZ of 10 miles. By fixing the distance in this manner, the burden would pass to the applicant to show why a lesser distance would be suitable for a proposed site. Further, the proposed rule changes would require that the size and configuration of the EPZs surrounding a particular nuclear power plant be reviewed in relation to the emergency response capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries.

D. Senate Bill S.562: The relevant areas in this Congressional Bill involve the "concurrence" and adequacy of State and local governmental emergency response plans and a requirement that the Commission promulgate by rule the requirements for State and local emergency plans.

Senate Bill S.562 concerns involving the NRC concurrence in State emergency plans as a condition of license issuance would be resolved by the proposed rule changes. (See §§50.33 and 50.54, and Appendix E.) However, should a State plan lose NRC concurrence, the rule changes, as proposed, would not require that the operating plant be shut down, but would require the Commission to make a determination as to whether to order the plant to cease operation or reduce power levels. The proposed rule changes would not promulgate the requirements for State and local emergency response plans. They reference the current guidance for the preparation and evaluation of State and local emergency response plans leading to NRC concurrence, which is contained in NUREG 75/111, "Guide and Checklist for Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Nuclear Facilities" (December 1, 1974) and Supplement 1 (March 15, 1977).

1432 229

E. Congressional Report: "Emergency Planning Around U.S. Nuclear Power Plants: Nuclear Regulatory Commission Oversight," (House Report 96-413, August 8, 1979) contained recommendations concerning the following: 1) NRC responsibility for leadership in the field of emergency planning; 2) plans required of utility companies operating nuclear power plants, including the upgrade of existing NRC standards for emergency planning as expressed by Appendix E and Regulatory Guide 1.101 to assure that compliance with them will, in fact, produce an effective emergency plan; 3) State and local planning for nuclear emergencies; 4) the planning basis for both State and utility plans; and 5) nuclear power plant siting and emergency response capability.

The first set of recommendations, related to NRC leadership responsibilities, is not the subject of this proposed rulemaking. The second set of recommendations, related to the plans of utility companies operating nuclear power plants, is the subject of this rulemaking as follows:

1. The proposed rule change makes explicit that the capability for accident assessment must exist (see Enclosure A, Appendix E, Section IV, Paragraph B). It does not, however, establish minimum specific monitoring instrumentation requirements because they will be contained in Regulatory Guide 1.97, which currently is being extensively revised and expanded to include onsite and offsite radiological and meteorological monitoring for emergency situations (See Enclosure H).

2. The proposed rule change makes explicit that administrative and physical means for notifying local, State, and Federal officials must exist (see Enclosure A, Appendix E, Section IV, Paragraph 1), but it does not establish the specific methods (direct phone lines and radio links) set forth in the Congressional report because such specifics are considered inappropriate for regulations;

1432 230

3. The proposed rule change would require annual drills of utility emergency plans with a condition that they be held jointly with State and local emergency plans (see Enclosure A, Appendix E, Section IV, Paragraph F);

4. The proposed rule change would require submission for NRC review during the licensing process of emergency plan implementing procedures (see Enclosure A, Appendix E, Paragraph IV), but it would not require approval;

5. The proposed rule change would provide improved means for informing the public both routinely through yearly dissemination of basic emergency planning information and in the event of a radiological emergency (see Enclosure A, Appendix E, Section IV, Paragraph D); however, specific requirements for notification through customers' electric bills are not included.

Periodic updating of emergency plans is already the subject of a proposed rulemaking (see 44 FR 54308).

With respect to the third set of recommendations related to State and local requirements:

1. The staff is presently reviewing current requirements for State and local plans, particularly with regard to the adequacy of planning by local governments and their demonstrated capabilities. The Office of State Programs is conducting this review, which is scheduled for completion in December 1979. When this review is complete, NUREG 75/111 will be revised and the requirements will be codified. In the interim, the proposed rule references the current guidance for the preparation and evaluation of State and local emergency response plans leading to NRC concurrence, which is contained in NUREG 75/111 and Supplement 1 thereto;

2. The staff is currently re-reviewing State plans in which it has concurred in order to determine if they provide effective emergency response capability;

1432 231

3. The proposed rule changes would not require as a condition for the issuance of a construction permit that State and local government emergency response plans have NRC concurrence, but would require applicants for construction permits to document in their PSARs contacts and arrangements made with State, local, and Federal governmental agencies with responsibility for coping with emergencies, including identification of the principal agencies;

4. The proposed rule change would require as a condition for the issuance of an operating license that State and local government emergency response plans have NRC concurrence (see §§50.33 and 50.54); and

5. The proposed rule changes state that existing operating plants may be required to discontinue operation if the State and local emergency response plans have not received NRC concurrence within 180 days from the effective date of these amendments.

With regard to the fourth set of recommendations on the planning basis for both State and Utility Emergency response plans, the proposed rule uses the concept of the Emergency Planning Zones. The proposed rule changes would not require that the State and local emergency plans for the plume and ingestion pathway Emergency Planning Zones around each nuclear power plant be concurred in by the NRC. However, as noted above, nuclear power plants might not be allowed to operate where emergency plans (with NRC concurrence) do not exist for the plume exposure pathway EPZ.

With regard to the fifth set of recommendations on nuclear power plant siting, the proposed rule changes do not address the requirement for a review, on a site-by-site basis, of existing emergency response capability. However, this is presently being carried out by an NRR task group. The rule changes do address the appropriate level of detail in the emergency plan that would be required as a prerequisite to issuance of a construction permit (see Appendix E, Section II).

1432 252

ENCLOSURE C

DISCUSSION OF MAJOR PROPOSED CHANGES TO THE

EMERGENCY PLANNING REGULATION

1. Major Proposed Change - That an applicant's emergency plans, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. Additionally:

   a. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan has not received NRC concurrence within 180 days of the effective date of the final amendments.

   b. An operating plant may be required to cease operation or reduce power levels if a State or local emergency response plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

In carrying out its mandate to protect the public health and safety, the NRC has, to date, focused its primary attention on the site characteristics and design features of nuclear facilities which are proposed by license applicants. Our licensing process has been structured accordingly, with a view toward ensuring substantial conservatisms in the design and operational safety margins of nuclear power plants. In addition to ensuring

1432 234

that the proposed facility site and design meet our licensing standards and criteria, we review the applicant's emergency plans, which are designed to provide an additional margin of protection for the public living in the vicinity of the facility.

The NRC's licensing requirements related to an applicant's emergency plans are set forth in Appendix E to 10 CFR Part 50, "Emergency Plans for Production and Utilization Facilities," and in Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants." In addition to establishing plans and procedures for coping with emergencies within the boundary of the nuclear power plant site, applicants have been required to make certain emergency readiness arrangements with State and local organizations to cope with plant-related emergencies outside the site boundary, with particular emphasis on the low population zone. In this context, offsite emergency response plans have been related to the nuclear licensing process.

The NRC, with the cooperation of several other Federal agencies, has had some success in assisting State and local governments in the preparation and evaluation of their radiological emergency response plans and in other activities to improve State and local preparedness efforts. This activity does not rest on any specific statutory authority, however, and has been accomplished on a cooperative and voluntary basis. Such plans are desirable since they do provide an added assurance to the State and local officials and to the general public in the vicinity of nuclear power plants that appropriate protective measures are available in the event of an accident with offsite consequences.

NRC has formulated basic guidance documents to assist State and local governments to improve their capabilities to respond to the offsite effects of a nuclear power plant radiological accident. However, until now, we have not considered it necessary to require that State and local radiological emergency response plans contain all the Commission's essential planning elements as a condition precedent to issuing a nuclear power plant operating license.

The GAO has recommended that the NRC should not license additional nuclear power plants for operation unless the associated State and local emergency response plans have been concurred in by the NRC.

On the other hand, some people can argue that a State that has an NRC "concurred-in" emergency response plan does not in itself necessarily provide significantly greater "...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

*The necessary finding pursuant to 10 CFR Part 50, Appendix E.

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.

The staff has also looked at the history of past evacuations and notes that evacuation of people is a common occurrence (about one per week) in our society. These evacuations occurred many times 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 requirements for and the adequacy of NRC's, licensees', and State and local governmental emergency response plans.

1432 237

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

Several arguments can be offered in support of changing the regulations to require, as a condition of operating license issuance, that an application include State and local emergency response plans concurred in by NRC and that the Commission determine whether to allow continued operation of plants where relevant State or local plans have not received NRC concurrence or such concurrence has been withdrawn. The following are supportive arguments:

- Significant improvement in coordination between State and local governments and the licensees response capabilities, especially in areas such as:
    a. Accident classification
    b. Previous agreements for those agencies and/o. individuals that will be resporsible for the taking of protective measures
    c. Development of emergency action levels for notification and participation of offsite agencies
    d. Establishment of the EPZs (distances that emergency planning considerations will be extended to).

- There is a growing sentiment in the Congress and elsewhere to require such concurrence.

- Better awareness on behalf of the State and local government of their responsibilities of initiating protective measures during a radiological emergencies.

1432 239

- The establishment of better communication between governmental entities within a 10-mile zone.

- Assurance of adequate response capabilities because of the required annual drills in order to maintain NRC concurrence.

The following are arguments for not supporting the recommendation:

- State and local authorities could thwart licensing process (and shut down facilities) by refusing to develop emergency plans, particularly those in States which have no nuclear power plants within their borders, but are adjacent to States having such facilities.

- The staff has not sufficiently evaluated implementation of the proposal to know enough of the implications and ramifications that are necessary for a knowledgeable decision. That is, the operational feasibility and practicability of the regulation have not been determined.

- The present voluntary procedure of dealing with the States is working reasonably well. States have shown increased and renewed interest in the preparation of emergency plans and NRC concurrence since TMI.

- NRC staff requirements would increase in order to implement the proposed changes.

- o Greater resource requirements will be placed on State and local governments to meet the requirements on them.

- o Further delays in licensing of plants could result.

2. Major Proposed Change - That applicants' and licensees' detailed emergency preparedness implementing procedures be submitted to NRC for review.

In the past, and at present, the licensee's detailed implementation information was not submitted for review along with the emergency response plans provided in the FSAR. These details have been kept on site where they could be reviewed by visiting NRC inspectors. This detailed information was provided to the staff (or in a hearing, if relevant) only if there was some special problem or question as to whether the applicant could actually carry out the plans set forth in the FSAR.

Implementing procedures maintained on site are routinely reviewed by the Office of Inspection and Enforcement (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 response plan and the implementing procedures. Assurance is provided through these inspections that the commitments made in the emergency response plan are, in fact, met, and reasonable assurance is obtained that appropriate measures can and will be taken in the event of

1432 240

an emergency. The inspection program includes verification that implementing procedures have been developed and representative procedures are reviewed by NRC personnel. Furthermore, the NRC inspection program verifies by observation and review of records that the implementing procedures are periodically tested and evaluated for adequacy and revised as necessary when tested.

The staff believes that effective review is provided by IE inspectors who are familiar with the individual site specifics. Accordingly, the staff is recommending that the only change in this procedure be that licensees' implementing procedures be submitted to the appropriate IE Regional Office for review. This submittal should occur at least 180 days prior to operating license issuance. For licensees holding operating licenses, this submittal should occur within 30 days of the effective date of the final amendments. The staff does not believe that approval of emergency planning implementing procedures as a condition of operating license issuance or continuance should be required, since other site-specific implementing procedures (e.g., in operations, radiological protection, safeguards) are not subject to approval as a condition of license issuance or continuance. This approach would result in only a minimal additional burden on the NRC staff, licensees, and State and local agencies. The small additional burden for the Office of Inspection and Enforcement (due to what would likely be a more detailed, disciplined review of these procedures in the future) will be largely offset by having the procedures available for review in the IE Regional Offices.

1432 241

3. Major Proposed Change - That emergency planning considerations be extended to Emergency Planning Zones.

In December 1978, the Joint NRC/EPA Task Force on Emergency Planning issued its report, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (NUREG-0396/EPA 520/1-78-016). The report provides a basis for Federal, State and local government emergency preparedness organizations to determine the appropriate degree of emergency response planning efforts in the environs of nuclear power plants.

This report introduces the concept of "Emergency Planning Zones" (EPZs) as a basis for the planning of response actions that would result in radiological dose savings in the environs of nuclear facilities in the event of a serious power reactor accident. Application of the Task Force guidance should result in the development of more uniform emergency plans from site to site. The EPZ concept provides a needed framework within which existing planning elements can be developed for State and local governmental authorities as well as applicants and licenses. The EPZ concept has received wide acceptance, and a number of States have indicated that such a planning basis is already being used in their current emergency preparedness efforts.

The Task Force concluded that both the design basis accidents and less severe core-melt accidents should be considered when selecting a basis for planning predetermined protective actions and that certain features

1432 242

of the more severe core-melt accidents should be considered in planning to ensure that some capability exists to reduce the consequences of even the most severe accidents.

A knowledge of the kinds of radioactive materials that could be released is necessary to decide the characteristics of monitoring instrumentation, to develop tools for estimating projected doses, and to identify the most important exposure pathways. For that reason, the staff believes that our emergency planning regulations should take into consideration the principal characteristics of a spectrum of design basis and core-melt accidents (such as nuclides released and distances likely to be involved). The use of EPZs in the emergency planning regulation is appropriate because of (a) the value of establishing the distance to which planning for the initiation of predetermined protective actions is warranted and (b) recognition of the capability to accommodate emergency situations beyond the design basis accidents used in plant and site evaluation. Furthermore, the staff believes that the use of judgment should be allowed in determining the distance and configuration of EPZs, so that effects peculiar to local conditions such as demography, topography, land characteristics, access routes, and local jurisdictional boundaries can be properly considered rather than setting a fixed distance for all sites.

1432 243

ENCLOSURE D

Draft Congressional Letter

Dear Mr. Chairman:

Enclosed for the information of the Subcommittee on _____ are copies of a notice of proposed rulemaking to be published in the Federal Register. Also, enclosed is a copy of the public announcement that will be released concerning this matter.

The Nuclear Regulatory Commission is considering the adoption of amendments to its regulation, "Domestic Licensing of Production and Utilization Facilities," 10 CFR Part 50, which would require that emergency planning considerations be extended to "Emergency Planning Zones" (discussed in NUREG-0336) and to require as a condition of operating license issuance that an applicant's emergency plan include State and local governmental emergency response plans that have been submitted to and concurred in by the NRC.

The proposed amendments would also require that:

a. An operating plant may be required to cease operation or to reduce the maximum level of power operation if a State or local emergency response plan has not received NRC concurrence within 180 days of the effective date of the final amendments.

b. An operating plant may be required to cease operation or to reduce the maximum level of power operation if a State or local emergency plan does not warrant continued NRC concurrence and the State or locality

1432 245

does not correct the deficiencies within 4 months of NRC notification of concurrence withdrawal.

In addition, the Nuclear Regulatory Commission is proposing to revise 10 CFR Part 50, Appendix E, "Emergency Plans for Production and Utilization Facilities," in order to clarify, expand, and upgrade the Commission's Emergency Planning regulations.

The accident at Three Mile Island has raised a number of questions about the adequacy of radiological emergency response plans. Even before the accident, the GAO had recommended that "NRC not license new power plants for operation unless off-site emergency plans have been concurred in by the NRC" (Report to the Congress by the Comptroller General, "Areas Around Nuclear Facilities Should Be Better Prepared For Radiological Emergencies," EDM-79-110, March 30, 1979). These proposed rule changes are responsive to that recommendation. The Commission is also proposing to incorporate in its regulations the concept of Emergency Planning Zones which is based on a joint NRC-EPA Task Force Report, "Planning Basis for Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," NUREG-0396/EPA 520/1-78-016, December 1978.

Congress voiced its concern about the problems associated with the emergency preparedness area in Senate Bill S.562 as well as in House Report No. 96-413

1432 246

titled "Emergency Planning Around U.S. Nuclear Powerplants; Nuclear Regulatory Commission Oversight." The Commission's proposed rule changes address many of the concerns mentioned in these Congressional documents.

Sincerely,

Robert B. Minogue, Director
Office of Standards Development

Enclosures:
1. Notice of Proposed Rulemaking
2. Public Announcement

1432 247

ENCLOSURE E

PRELIMINARY VALUE/IMPACT ANALYSIS

I. THE PROPOSED ACTION

A. Description

The proposed action would result in three major changes to current practices. These are:

1. Require that an applicant's emergency plan, including State and local governmental emergency response plans, be submitted to and concurred in by the NRC as a condition of operating license issuance. Additionally:

   a. An operating plant may be required to cease operation or reduce power levels if a State or local emergency plan has not received NRC concurrence within 180 days of the effective date of the proposed rule.

   b. An operating plant may be required to cease operation or reduce power levels if a State or local emergency plan does not warrant continued NRC concurrence and the State or locality does not correct the deficiencies within 4 months of notification of NRC concurrence withdrawal.

2. Require that emergency planning considerations be extended to Emergency Planning Zones (EPZs).[1]

[1] EPZs are discussed in NUREG-0396. Generally, the plume exposure pathway EPZ for a light water reactor extends out to about 10 miles from the plant and the ingestion pathway EPZ out to about 50 miles.

1432 249

3. Require that detailed emergency planning implementing procedures be submitted to NRC for review.

Other elements of the proposed action would result in an interim upgrade of Appendix E of NRC emergency planning regulations, which in essence, would clarify and expand them.

B. Need for the Proposed Action

There have been numerous indications recently that current NRC regulations with respect to emergency planning are inadequate and also require clarification and expansion. For example, several reports have cited criticisms of emergency planning:

1. EPA/NRC Task Force Report - "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (NUREG-0396, December 1978)
2. GAO Report - "Areas Around Nuclear Facilities Should Be Better Prepared for Radiological Emergencies" (EMD-78-110, March 30, 1979)
3. "Report of the Siting Policy Task Force" - (NUREG-0625, August 1979)
4. Senate Bill S.562 - involves concurrence and adequacy of State and Local Emergency Plans.
5. Congressional Report - "Emergency Planning Around U.S. Nuclear Power Plants: Nuclear Regulatory Commission Oversight" (House Report 96-413, August 8, 1979).

1432 250

In addition, the accident at Three Mile Island has raised a number of questions about the adequacy of radiological emergency response plans. Accordingly, notice of the Commission's interest in adopting additional regulations was announced in the Federal Register (14 FR 41433, July 17, 1979).

The action of publishing these proposed rule changes to NRC's emergency planning regulations will provide needed public input as to the workability of these proposed rule changes along with associated impacts. While there is widespread agreement that the proposed rule changes are conceptually attractive, their workability and impacts have not been adequately evaluated.

C. Value/Impact of the Proposed Action

1. NRC

The value of improvements to the emergency planning regulations would be (1) to provide better assurance that the response capabilities of the licensee and State and local governments would function properly in the event of a radiological emergency in order to protect the public health and safety, and (2) to provide more clarified and expanded regulatory bases for the evaluation of applicants' and licensees' emergency planning efforts.

It is estimated that the proposed action will require approximately an additional 5 man-years per year of NRC effort. This

additional manpower requirement was identified in the Emergency Planning Task Force Report (SECY-79-499).

2. Other Government Agencies

Improvements to the emergency planning regulations would contribute to improved State and local emergency response around nuclear power reactors. The impact of implementing this proposed action on State and local agencies would be that a large majority of States would require substantial additional resources. The guidance may have very significant impacts for some local jurisdictions, particularly where planning of this sort has not previously been done. The staff estimates that it would cost a minimum of $70,000 per State (including local jurisdictions) for the first year and approximately $20,000 per State per year thereafter.

Implementation of the proposed rule changes would have special political, institutional, and economic impact at both State and local levels whenever the plume exposure pathway EPZ encompasses more than one State or locality. In such cases, the unilateral action of one State or locality not to develop an emergency response plan with NRC concurrence could prevent another State or locality from attracting electrical generating capacity needed for economic growth or from continuing to obtain electricity from operating nuclear facilities. The questions of regional impacts need special attention during the public comment period.

Applicant agencies (e.g., TVA, DOE) would be affected as presented under Section 3 below.

3. Industry

Improvements in the emergency planning regulations would provide more clarified and expanded guidance for the development of applicants' and licensees' emergency plans. It is estimated that the proposed action would require an additional 3 man-years per year per licensee of effort. A special potential impact of the proposed action is that licenses to operate nuclear power plants now under construction may be delayed and that operating plants may be required to shut down or reduce power levels should relevant State and local plans not be concurred in by NRC. Further, the proposed rule changes would heighten the uncertainty concerning nuclear power as a viable energy alternative.

4. Public

Improvements to the emergency planning regulations would provide increased confidence that the health and safety of the public would be protected during a radiological emergency because the response capabilities of the licensee and State and local governments would be in place. A potential impact of the proposed action may be higher costs of electricity when replacement power must be found for nuclear power plants that are not allowed to operate or when industry opts to provide needed capacity with more costly but less controversial energy alternatives.

D. Decision on the Proposed Action

The proposed rule changes should be published in the Federal Register to obtain public comments thereon.

II. TECHNICAL ALTERNATIVES

Because the proposed rule change is being undertaken to address and resolve the concerns of the Commission, GAO, and Congress, no technical alternatives to their recommendations have been considered.

III. PROCEDURAL ALTERNATIVES

Potential NRC procedures that could be used to promulgate the proposed action of a proposed rule change include the following:

. Policy Statement

. Rule Change.

The staff is responding to a Commission directive that a rule change be undertaken and promulgated.

IV. STATUTORY CONSIDERATIONS

A. NRC Authority

The rule change is intended to implement the Atomic Energy Act as amended.

B. Need for NEPA Assessment

Since the rule change does not represent a major action, defined by 10 CFR 51.5(a)(10), implementation of the proposed rule change does not require a NEPA assessment.

1432 254

V. RELATIONSHIP TO OTHER EXISTING OR PROPOSED REGULATIONS OR POLICY

These proposed amendments to existing rules are a part of a broader rulemaking activity announced in the Federal Register (44 FR 41433, July 17, 1979) in the subject area of emergency planning. Also, certain aspects of the proposed rulemaking, especially the establishment of EPZs, bear a relationship to reactor site criteria (10 CFR Part 100). The Siting Policy Task Force Report, in fact, recommended fixed-distance EPZs. By memorandum dated September 25, 1979, Commissioner Ahearne requested staff views on flexible versus fixed EPZs. H. Denton's memo in response to that request indicated that emergency planning related to siting should be considered in any rulemaking proceeding leading to revision of 10 CFR Part 100.

Publication of the subject proposed rule changes in the Federal Register would supersede and thus eliminate the need to continue development of the proposed rule change to 10 CFR Part 50, Appendix E (43 FR 37473), published on August 23, 1978, regarding Emergency Planning considerations outside the Low Population Zone (LPZ).

VI. SUMMARY AND CONCLUSIONS

To proceed expeditiously with rulemaking.

1432 255

ENCLOSURE F

PRELIMINARY ANALYSES OF PUBLIC COMMENTS (To be supplied)

ENCLOSURE G

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

SEP 19 1979

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US NRC
SD
OFFICE DIRECTOR
NL5650
WASHINGTON DC 20555

The USNRC Office of Nuclear Reactor Regulation has developed draft Emergency Action Level Guidelines to improve the emergency preparedness capabilities around operating nuclear power plants. The enclosed draft guidelines for interim use, published as NUREG-0610, establishes four classes of Emergency Action Levels replacing the classes in Regulatory Guide 1.101. The new classes are Notification of Unusal Event, Alert, Site Emergency, and General Emergency.

Public comments on these draft guidelines are solicited. All comments sent to:

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, DC 20555
Attention: Docketing and Service Branch

and received by December 1, 1979, will be considered by the Commission.

Sincerely,

Harold R. Denton

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

1432 258

ENCLOSURE "C"

NUREG-0610

U.S. NUCLEAR REGULATORY COMMISSION

DRAFT EMERGENCY ACTION LEVEL GUIDELINES FOR NUCLEAR POWER PLANTS

September 1979

OFFICE OF NUCLEAR REACTOR REGULATION

U.S. NUCLEAR REGULATORY COMMISSION

For interim use and comment - 9/14/79

BASIS FOR EMERGENCY ACTION LEVELS FOR NUCLEAR POWER FACILITIES

This document is provided for interim use during the initial phases of the NRC effort to promptly improve emergency preparedness at operating nuclear power plants. Changes to the document can be expected as experience is gained in its use and public comments are received. Further, the Commission has initiated a rulemaking procedure, now scheduled for completion in January 1980 in the area of Emergency Planning and Preparedness. Additional requirements are to be expected when rulemaking is completed and some modifications to this document may be necessary.

Four classes of Emergency Action Levels are established which replace the classes in Regulatory Guide 1.101, each with associated examples of initiating conditions. The classes are:

Notification of Unusual Event

Alert

Site Emergency

General Emergency

The rationale for the notification and alert classes is to provide early and prompt notification of minor events which could lead to more serious consequences given operator error or equipment failure or which might be indicative of more serious conditions which are not yet fully realized. A gradation is provided to assure fuller response preparations for more serious indicators. The site emergency class reflects conditions where some significant releases are likely or are occurring but where a core melt situation is not indicated based on current information. In this situation full mobilization of emergency personnel in the near site environs is indicated as well as dispatch of monitoring teams and associated communications. The general emergency class involves actual or imminent substantial core degradation or melting with the potential for loss of containment. The immediate action for this class is sheltering (staying inside) rather than evacuation until an assessment can be made that (1) an evacuation is indicated and (2) an evacuation, if indicated, can be completed prior to significant release and transport of radioactive material to the affected areas.

The example initiating conditions listed after the immediate actions for each class are to form the basis for establishment by each licensee of the specific plant instrumentation readings which, if exceeded, will initiate the emergency class.

F432 260

Some background information on release potential and expected frequencies for the various classes is provided in this material. Note that there is a wide band of uncertainty associated with the frequency estimates. The release potential given reflects the amount that could be released over a long time period or under favorable meteorological conditions without exceeding the exposure criteria of a more severe class. Release of these amounts in a short time period under unfavorable meteorological dispersion conditions might trigger the criteria of a more severe class.

Class	Licensee Actions	State and/or Local Offsite Authority Actions
Notification of unusual event	1. Promptly inform State and/or local offsite authorities of nature of unusual condition as soon as discovered	1. Provide fire or security assistance if requested
Class Description	2. Augment on-shift resources	2. Standby until verbal closeout
Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant.	3. Assess and respond	or
Purpose	4. Close out with verbal summary to offsite authorities; followed by written summary within 24 hours	3. Escalate to a more severe class
Purpose of offsite notification is to (1) assure that the first step in any response later found to be necessary has been carried out, (2) provide current information on unusual events, and (3) provide a periodic unscheduled test of the offsite communication link.	or	
Release Potential	5. Escalate to a more severe class	
No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.		
Expected Frequency		
Once or twice per year per unit.		

EXAMPLE INITIATING CONDITIONS: NOTIFICATION OF UNUSUAL EVENT

1. ECCS initiated

2. Radiological effluent technical specification limits exceeded

3. Fuel damage indication. Examples:

   a. High offgas at BWR air ejector monitor (greater than 500,000 µci/sec; corresponding to 16 isotopes decayed to 30 minutes; or an increase of 100,000 µci/sec within a 30 minute time period)
   b. High coolant activity sample (e.g., exceeding coolant technical specifications for iodine spike)

   c. Failed fuel monitor (PWR) indicates increase greater than 0.1% equivalent fuel failures within 30 minutes.

4. Abnormal coolant temperature and/or pressure or abnormal fuel temperatures

5. Exceeding either primary/secondary leak rate technical specification or primary system leak rate technical specification

6. Failure of a safety or relief valve to close

7. Loss of offsite power or loss of onsite AC power capability

8. Loss of containment integrity requiring shutdown by technical specifications

9. Loss of engineered safety feature or fire protection system function requiring shutdown by technical specifications (e.g., because of malfunction, personnel error or procedural inadequacy)

10. Fire lasting more than 10 minutes

11. Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown or other significant loss of assessment or communication capability (e.g., plant computer, all meteorological instrumentation)

12. Security threat or attempted entry or attempted sabotage

13. Natural phenomenon being experienced or projected beyond usual levels

    a. Any earthquake

    b. 50 year flood or low water, tsunami, hurricane surge, seiche

    c. Any tornado near site

    d. Any hurricane

14. Other hazards being experienced or projected

    a. Aircraft crash on-site or unusual aircraft activity over facility

    b. Train derailment on-site

    c. Near or onsite explosion

    d. Near or onsite toxic or flammable gas release

    e. Turbine failure

15. Other plant conditions exist that warrant increased awareness on the part of State and/or local offsite authorities or require plant shutdown under technical specification requirements or involve other than normal controlled shutdown (e.g., cooldown rate exceeding technical specification limits, pipe cracking found during operation)

16. Transportation of contaminated injured individual from site to offsite hospital

17. Rapid depressurization of PWR secondary side.

1432 264

Class

Alert

Class Description

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.

Purpose

Purpose of offsite alert is to (1) assure that emergency personnel are readily available to respond if situation becomes more serious or to perform confirmatory radiation monitoring if required, (2) provide offsite authorities current status information, and (3) provide possible unscheduled tests of response center activation.

Release Potential

Limited releases of up to 10 curies of I-131 equivalent or up to 10^4 curies of Xe-133 equivalent.

Expected Frequency

Once in 10 to 100 years per unit.

Licensee Actions

1. Promptly inform State and/or local authorities of alert status and reason for alert as soon as discovered
2. Augment resources by activating on-site technical support center, on-site operations center and near-site emergency operations center (EOC)
3. Assess and respond
4. Dispatch on-site monitoring teams and associated communications
5. Provide periodic plant status updates to offsite authorities (at least every 15 minutes)
6. Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases
7. Close out by verbal summary to offsite authorities followed by written summary within 8 hours

or

8. Escalate to a more severe class

State and/or Local Offsite Authority Actions

1. Provide fire or security assistance if requested
2. Augment resources by activating near-site EOC and any other primary response centers
3. Alert to standby status key emergency personnel including monitoring teams and associated communications
4. Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed technical specification limits
5. Maintain alert status until verbal closeout

or

6. Escalate to a more severe class

EXAMPLE INITIATING CONDITIONS: ALERT

1. Severe loss of fuel cladding

   a. High offgas at BWR air ejector monitor (greater than 5 ci/sec; corresponding to 16 isotopes decayed 30 minutes)

   b. Very high coolant activity sample (e.g., 300 µci/cc equivalent of I-131)

   c. Failed fuel monitor (PWR) indicates increase greater than 1% fuel failures within 30 minutes or 5% total fuel failures.

2. Rapid gross failure of one steam generator tube with loss of offsite power

3. Rapid failure of more than 10 steam generator tubes (e.g., several hundred gpm primary to secondary leak rate)

4. Steam line break with significant (e.g., greater than 10 gpm) primary to secondary leak rate or MSIV malfunction

5. Primary coolant leak rate greater than 50 gpm

6. High radiation levels or high airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g., increase of factor of 1000 in direct radiation readings)

7. Loss of offsite power and loss of all onsite AC power

8. Loss of all onsite DC power

9. Coolant pump seizure leading to fuel failure

10. Loss of functions needed for plant cold shutdown

11. Failure of the reactor protection system to initiate and complete a scram which brings the reactor subcritical

12. Fuel damage accident with release of radioactivity to containment or fuel handling building

13. Fire potentially affecting safety systems

14. All alarms (annunciators) lost

15. Radiological effluents greater than 10 times technical specification instantaneous limits (an instantaneous rate which, if continued over 2 hours, would result in about 1 mr at the site boundary under average meteorological conditions)

16. Ongoing security compromise

17. Severe natural phenomena being experienced or projected

    a. Earthquake greater than OBE levels

    b. Flood, low water, tsunami, hurricane surge, seiche near design levels

    c. Any tornado striking facility

    d. Hurricane winds near design basis level

18. Other hazards being experienced or projected

    a. Aircraft crash on facility

    b. Missile impacts from whatever source on facility

    c. Known explosion damage to facility affecting plant operation

    d. Entry into facility environs of toxic or flammable gases

    e. Turbine failure causing casing penetration

19. Other plant conditions exist that warrant precautionary activation of technical support center and near-site emergency operations center

20. Evacuation of control room anticipated or required with control of shutdown systems established from local stations

Class	Licensee Actions	State and/or Local Offsite Authority Actions
Site Emergency Class Description Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Purpose Purpose of the site emergency warning is to (1) assure that response centers are manned, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious, (4) provide current information for and consultation with offsite authorities and public, and (5) provide possible unscheduled test of response capabilities in U. S. Release Potential Releases of up to 1000 ci of I-131 equivalent or up to 10^6 ci of Xe-133 equivalent. Expected Frequency Once in one hundred to once in 5000 years per unit.	1. Promptly inform State and/or local offsite authorities of site emergency status and reason for emergency as soon as discovered. 2. Augment resources by activating on-site technical support center, on-site emergency operations center and near-site emergency operations center (EOC) 3. Assess and respond 4. Dispatch on-site and offsite monitoring teams and associated communications 5. Provide a dedicated individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities) 6. Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis 7. Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission 8. Provide release and dose projections based on available plant condition information and foreseeable contingencies 9. Close out or recommend reduction in emergency class by briefing of offsite authorities at EOC and by phone followed by written summary within 8 hours or 10. Escalate to general emergency class	1. Provide any assistance requested 2. Activate immediate public notification of emergency status and provide public periodic updates 3. Augment resources by activating near-site EOC and any other primary response centers 4. Dispatch key emergency personnel including monitoring teams and associated communications 5. Alert to standby status other emergency personnel (e.g., those needed for evacuation) and dispatch personnel to near-site duty stations 6. Provide offsite monitoring results to licensee and others and jointly assess them 7. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources 8. Recommend placing milk animals within 2 miles on stored feed and assess need to extend distance 9. Provide press briefings, perhaps with licensee 10. Maintain site emergency status until closeout or reduction of emergency class or 11. Escalate to general emergency class

EXAMPLE INITIATING CONDITIONS: SITE EMERGENCY

1. Known loss of coolant accident greater than makeup pump capacity

2. Degraded core with possible loss of coolable geometry (indicators should include instrumentation to detect inadequate core cooling, coolant activity and/or containment radioactivity levels)

3. Rapid failure of more than 10 steam generator tubes with loss of offsite power

4. BWR steam line break outside containment without isolation

5. PWR steam line break with greater than 50 gpm primary to secondary leakage and indication of fuel damage

6. Loss of offsite power and loss of onsite AC power for more than 15 minutes

7. Loss of all vital onsite DC power for more than 15 minutes

8. Loss of functions needed for plant hot shutdown

9. Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level)

10. Fire affecting safety systems

11. All alarms (annunciators) lost for more than 15 minutes and plant is not in cold shutdown or plant transient initiated while all alarms lost

12. a. Effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour or greater than 500 mr/hr W.B. for two minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology

    b. These dose rates are projected based on other plant parameters (e.g., radiation level in containment with leak rate appropriate for existing containment pressure) or are measured in the environs

13. Imminent loss of physical control of the plant

14. Severe natural phenomena being experienced or projected with plant not in cold shutdown

    a. Earthquake greater than SSE levels

    b. Flood, low water, tsunami, hurricane surge, seiche greater than design levels or failure of protection of vital equipment at lower levels

    c. Winds in excess of design levels

15. Other hazards being experienced or projected with plant not in cold shutdown

    a. Aircraft crash affecting vital structures by impact or fire

    b. Severe damage to safe shutdown equipment from missiles or explosion

    c. Entry of toxic or flammable gases into vital areas

16. Other plant conditions exist that warrant activation of emergency centers and monitoring teams and a precautionary public notification

17. Evacuation of control room and control of shutdown systems not established from local stations in 15 minutes

Class

General Emergency

Class Description

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

Purpose

Purpose of the general emergency warning is to (1) initiate predetermined protective actions for public, (2) provide continuous assessment of information from licensee and offsite measurements, (3) initiate additional measures as indicated by event releases or potential releases, and (4) provide current information for and consultation with offsite authorities and public.

Release Potential

Releases of more than 1000 ci of I-131 equivalent or more than 10^6 ci of Xe-133 equivalent.

Expected Frequency

Less than once in about 5000 years per unit. Life threatening doses offsite (within 10 miles) once in about 100,000 years per unit.

M432 271

Licensee Actions

1. Promptly inform State and local offsite authorities of general emergency status and reason for emergency as soon as discovered (Parallel notification of State/local)
2. Augment resources by activating on-site technical support center, on-site emergency operations center and near-site emergency operations center (EOC)
3. Assess and respond
4. Dispatch on-site and offsite monitoring teams and associated communications
5. Provide a dedicated individual for plant status updates to offsite authorities and periodic press briefings (perhaps joint with offsite authorities)
6. Make senior technical and management staff onsite available for consultation with NRC and State on a periodic basis.
7. Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission
8. Provide release and dose projections based on available plant condition information and foreseeable contingencies
9. Close out or recommend reduction of emergency class by briefing of offsite authorities at EOC and by phone followed by written summary within 8 hours

State and/or Local Offsite Authority Actions

1. Provide any assistance requested
2. Activate immediate public notification of emergency status and provide public periodic updates
3. Recommend sheltering for 2 mile radius and 5 miles downwind and assess need to extend distances
4. Augment resources by activating near-site EOC and any other primary response centers
5. Dispatch key emergency personnel including monitoring teams and associated communications
6. Dispatch other emergency personnel to duty stations within 5 mile radius and alert all others to standby status
7. Provide offsite monitoring results to licensee and others and jointly assess these
8. Continuously assess information from licensee and offsite monitoring with regard to changes to protective actions already initiated for public and mobilizing evacuation resources
9. Recommend placing milk animals within 10 miles on stored feed and assess need to extend distance
10. Provide press briefings, perhaps with licensee
11. Consider relocation to alternate EOC if actual dose accumulation in near-site EOC exceeds lower bound of EPA PAGs
12. Maintain general emergency status until closeout or reduction of emergency class

EXAMPLE INITIATING CONDITIONS: GENERAL EMERGENCY

1. a. Effluent monitors detect levels corresponding to 1 rem/hr W.B. or 5 rem/hr thyroid at the site boundary under actual meteorological conditions

   b. These dose rates are projected based on other plant parameters (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) or are masured in the environs.

   Note: Consider evacuation only within about 2 miles of the site boundary unless these levels are exceeded by a factor of 10 or projected to continue for 10 hours

2. Loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier, (e.g., loss of core geometry and primary coolant boundary and high potential for loss of containment).

   Note: Consider 2 mile precautionary evacuation. If more than gap activity released, extend this to 5 miles downwind.

3. Loss of physical control of the facility.

   Note: Consider 2 mile precautionary evacuation.

4. Other plant conditions exist, from whatever source, that make release of large amounts of radioactivity in a short time period possible, e.g., any core melt situation. See the specific PWR and BWR sequences.

   Notes: a. For sequences where significant releases are not yet taking place and large amounts of fission products are not yet in the containment atmosphere, consider 2 mile precautionary evacuation. Consider 5 mile downwind evacuation (45° to 90° sector) if large amounts of fission products are in the containment atmosphere. Recommend sheltering in other parts of the plume exposure Emergency Planning Zone under this circumstance.

   b. For sequences where significant releases are not yet taking place and containment failure leading to a direct atmospheric release is likely in the sequence but not imminent and large amounts of fission products in addition to noble gases are in the containment atmosphere, consider precautionary evacuation to 5 miles and 10 mile downwind evacuation (45° to 90° sector).

   c. For sequences where large amounts of fission products other than noble gases are in the containment atmosphere and containment failure is judged imminent, recommend shelter for those areas where evacuation cannot be completed before transport of activity to that location.

d. As release information becomes available adjust these actions in accordance with dose projections, time available to evacuate and estimated evacuation times given current conditions.

EXAMPLE PWR SEQUENCES

1. Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt. Ultimate failure of containment likely for melt sequences. (Several hours available for response)

2. Transient initiated by loss of feedwater and condensate systems (principal heat removal system) followed by failure of emergency feedwater system for extended period. Core melting possible in several hours. Ultimate failure of containment likely if core melts.

3. Transient requiring operation of shutdown systems with failure to scram. Core damage for some designs. Additional failure of core cooling and makeup systems would lead to core melt.

4. Failure of offsite and onsite power along with total loss of emergency feedwater makeup capability for several hours. Would lead to eventual core melt and likely failure of containment.

5. Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.

NOTE: Most likely containment failure mode is meltthrough with release of gases only for dry containment; quicker and larger releases likely for ice condenser containments for melt sequences or for failure of containment isolation system for any PWR.

EXAMPLE BWR SEQUENCES

1. Transient (e.g., loss of offsite power) plus failure of requisite core shut down systems (e.g., scram or standby liquid control system). Could lead to core melt in several hours with containment failure likely. More severe consequences if pump trip does not function.

2. Small or large LOCA's with failure of ECCS to perform leading to core melt degradation or melt. Loss of containment integrity may be imminent.

3. Small or large LOCA occurs and containment performance is unsuccessful affecting longer term success of the ECCS. Could lead to core degradation or melt in several hours without containment boundary.

4. Shutdown occurs but requisite decay heat removal systems (e.g., RHR) or non-safety systems heat removal means are rendered unavailable. Core degradation or melt could occur in about ten hours with subsequent containment failure.

5. Any major internal or external events (e.g., fires, earthquakes, etc.) which could cause massive common damage to plant systems resulting in any of the above.

NRC FORM 335 (7-77) U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

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3. RECIPIENT'S ACCESSION NO.

7. AUTHOR(S)

5. DATE REPORT COMPLETED: MONTH September YEAR 1979

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15. SUPPLEMENTARY NOTES

14. (Leave blank)

16. ABSTRACT (200 words or less)

The USNRC Office of Nuclear Reactor Regulation has developed draft Emergency Action Level Guidelines to improve the emergency preparedness capabilities around operating nuclear power plants. The included draft guidelines are for interim use and establish four classes of Emergency Action Levels replacing the classes in Regulatory Guide 1.101. The new classes are Notification of Unusual Event, Alert, Site Emergency, and General Emergency.

17. KEY WORDS AND DOCUMENT ANALYSIS

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17b. IDENTIFIERS/OPEN-ENDED TERMS

1432 276

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ENCLOSURE H

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

OCT 16 1979

MEMORANDUM FOR: Raymond F. Fraley, Executive Director
Advisory Committee on Reactor Safeguards

FROM: Guy A. Arlotto, Director
Division of Engineering Standards
Office of Standards Development

SUBJECT: DRAFT 1 OF PROPOSED REVISION 2 TO REGULATORY GUIDE 1.97, "INSTRUMENTATION FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANT TO ASSESS PLANT AND ENVIRONS CONDITIONS DURING AND FOLLOWING AN ACCIDENT"

Enclosed for initial review by the ACRS Regulatory Activities Subcommittee are fifteen copies of Proposed Revision 2 to Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident", Draft 1, dated October 15, 1979. Also included are copies of Draft Standard ANS-4.5, "Functional Requirements for Post Accident Monitoring Capability for the Control Room Operator of a Nuclear Power Generating Station," which is endorsed by the revised guide, and the Value/Impact Statement for the proposed revision.

Since the draft is preliminary, additional staff efforts, including review and resolution of public comments, will be necessary prior to implementation of a regulatory position. ACRS Regulatory Activity Subcommittee comments and recommendations are requested on the proposed regulatory position.

The Committee should note that the Draft Standard ANS-4.5 has not been approved by ANS. As a result, some changes may occur in this standard before the scheduled ACRS meeting. You will be informed of any changes in the proposed standard and the draft Regulatory Guide at the beginning of the ACRS meeting. By letter from R. Mattson (NRR) to G. L. Wessman (ANS), NRC has requested permission from the ANS to endorse the Draft Standard ANS-4.5. Tentative permission was received by a telephone call from G. L. Wessman, (ANS) to R. Mattson, (NRC) on October 15, 1979. Formal written permission is expected to be forthcoming after the ANS-NUPPSCO meeting scheduled to be held in Gaithersburg, Maryland on October 24, 1979.

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Enclosures: Reg. Guide 1.97, Rev. 2,
including Draft Standard
ANS-4.5 & Value/Impact Statement

cc: NRC Public Document Room

1432 279

ENCLOSURE "H"

PROPOSED REVISION 2 TO REGULATORY GUIDE 1.97

INSTRUMENTATION FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANTS TO ASSESS PLANT AND ENVIRONS CONDITIONS DURING AND FOLLOWING AN ACCIDENT

A. INTRODUCTION

Criterion 13, "Instrumentation and Control," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Licensing of Production and Utilization Facilities," includes a requirement that instrumentation be provided to monitor variables and systems for accident conditions as appropriate to ensure adequate safety.

Criterion 19, "Control Room," of Appendix A to 10 CFR Part 50 includes a requirement that a control room be provided from which actions can be taken to maintain the nuclear power unit in a safe condition under accident conditions, including loss-of-coolant accidents and that equipment at appropriate locations outside the control room be provided with a design capability for prompt hot shutdown of the reactor including necessary instrumentation.

Criterion 64, "Monitoring Radioactivity Releases," of Appendix A to 10 CFR Part 50 includes a requirement that means be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluid, effluent discharge paths, and the plant environs for radioactivity that may be released from postulated accidents.

This guide describes a method acceptable to the NRC staff for complying with the Commission's regulations to provide instrumentation to monitor plant variables and systems during and following an accident in a light-water-cooled nuclear power plant.

B. DISCUSSION

Indications of plant variables and status of systems important to safety are required by the plant operator (licensee) during accident situations to (1) provide information required to permit the operator to take pre-planned manual actions to accomplish safe plant shutdown; (2) determine whether the reactor trip, engineered-safety-feature systems, and manually initiated systems are performing their intended functions, i.e., reactivity control, core cooling, maintaining reactor coolant system integrity, and maintaining containment integrity; (3) provide information to the operator that will enable him to determine the potential for causing a breach of the barriers to radioactivity release (i.e., fuel cladding, reactor coolant pressure boundry and containment) and if a barrier has been breached; (4) furnish data for deciding on the need to take unplanned action if an automatic or manually initiated safety system is not functioning properly or the plant is not responding properly to the safety systems in operation; (5) allow for early indication of the need to initiate action necessary to protect the public and for an estimate of the magnitude of the impending threat.

At the start of an accident, it may be difficult for the operator to determine immediately what accident has occurred or is occurring and, therefore, determine the appropriate response. For this reason, reactor trip and certain other safety actions (e.g., emergency core cooling actuation, containment isolation, or depressurization) have been designed to be performed automatically during the initial stages of an accident. Instrumentation is also provided to indicate information about plant parameters required to enable the operation of manually initiated safety systems and other appropriate operator actions involving systems important to safety.

Instrumentation is also needed to provide information about some plant parameters that will alert the operator to conditions that have degraded beyond those postulated in the accident analysis so that the operator can take actions that are available to mitigate the consequences. It is not intended that the operator be encouraged to circumvent systems important to safety prematurely, but that he be adequately informed in order that unplanned actions can be taken when necessary.

Examples of serious events that could threaten safety if conditions degrade beyond those assumed in the Final Safety Analysis Report are loss-of-coolant accidents (LOCAs), overpressure transients, ATWSs reactivity excursions, and releases of radioactive materials. Such events require that the operator understand, in a short time period, the ability of the barriers to limit radioactivity release, i.e., the potential for breach of a barrier, or an actual breach of a barrier by an accident in progress.

It is essential that the required instrumentation be capable of surviving the accident environment in which it is located for the length of time its function is required as defined by ANS-4.5, Section 3.0. It could therefore either be designed to withstand the accident environment or be protected by a local protected environment. If the environment surrounding an instrument component is the same for accident and normal operating conditions (e.g., some instrumentation components outside of containment or those in the main control room powered by a Class 1E source), the instrumentation components need no special environmental qualification.

It is important that accident-monitoring instrumentation components and their mounts that cannot be located in other than non-Seismic Category I buildings be conservatively designed for the intended service.

1432 282

Parameters selected for accident monitoring can be selected so as to permit relatively few instruments to provide the essential information needed by the operator for postaccident monitoring. Further, it is prudent that a limited number of those parameters (e.g., containment pressure, primary system pressure) be monitored by instruments qualified to more stringent environmental requirements and with ranges that extend well beyond that which the selected parameters can attain under limiting conditions. It is essential that the range selections not be arbitrary but sufficiently high that the instruments will always be on-scale; for example, a range for the containment pressure monitor extending to the burst pressure of the containment in order that the operator will not be blind as to the level of containment pressure. Provisions of such instruments are important so that responses to corrective actions can be observed and the need for, and magnitude of, further actions determined. On the other hand, we should also make sure that when a range is extended, the sensitivity and accuracy of the instrument are within acceptable limits.

Normal power plant instrumentation remaining functional for all accident conditions can provide indication, records, and (with certain types of instruments) time-history responses for many parameters important to following the course of the accident. Therefore, it is prudent to select the required accident-monitoring instrumentation from the normal power plant instrumentation to enable the operator to use, during accident situations, instruments with which he is most familiar. Since some accidents impose severe operating requirements on instrumentation components, it may be necessary to upgrade those instrumentation components to withstand the more severe operating conditions and to measure greater variations of monitored variables that may be associated with the accident if they are to be

used for both accident and normal operation. However, it is essential that instrumentation so upgraded does not compromise the accuracy and sensitivity required for normal operation. In some cases this will necessitate use of overlapping ranges of instruments to monitor the required range of the parameter to be monitored.

Draft Standard ANS-4.5, "Functional Requirements for Post Accident Monitoring Capability for the Control Room Operator of a Nuclear Power Generating Station," dated September 1979, delineates criteria for determining the variables to be monitored by the control room operator, as required for safety, during the course of an accident and during the long-term stable shutdown phase followng an accident. Draft Standard ANS-4.5 was prepared by ANS 4 Working Group 4.5 with two primary objectives, (1) to address that instrumentation which permits the operator to monitor expected parameter changes in an accident period, and (2) to address extended range instrumentation deemed appropriate for the possibility of encountering previously unforeseen events.

The standard defines four classifications of variable types for the purpose of aiding the designer in his selection of accident monitoring instrumentation and applicable criteria. (A fifth type (Type E) has been added by this regulatory guide.) The types are, (1) Type A - those variables that provide information needed for pre-planned operator actions, (2) Type B - those variables that provide information to indicate whether plant safety functions are being accomplished, (3) Type C - those variables that provide information to indicate the potential for being breached or the actual breach of the barriers to fission product release, i.e., fuel cladding, primary coolant pressure boundary, and containment, (4) Type D - those variables that provide information to indicate the performance of individual safety systems, and (5) Type E - those variables to be monitored as required to provide defense-in-depth and for diagnosis and

other useful purposes. Type A variables have not been included in the listings of variables to be measured because they are plant specific and will depend upon the operations that the designer chooses for pre-planned manual action. The five classifications are not mutually exclusive in that a given variable (or instrument) may be included in one or more types, as well as for normal power plant operation. Where such multiple listing occurs, it is essential that instrumentation be capable of meeting the most stringent requirements.

The time phases (Phases I, II, & III) delineated in ANS-4.5 are not specified for each variable in this regulatory guide. These considerations are plant specific. It is important that the required instrumentation survive the accident environment and function as long as the information it provides is needed by the plant operator.

C. REGULATORY POSITION

The criteria, requirements, and recommendations contained in Draft Standard ANS-4.5, "Functional Requirements for Post Accident Monitoring Capability for the Control Room Operator of a Nuclear Power Generating Station," dated September 1979, are considered by the NRC staff to be generally acceptable for providing instrumentation to monitor variables and systems for accident conditions and for monitoring the reactor containment, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released during and following an accident from a nuclear power plant subject to the following:

(1) Section 2.0 of ANSI-4.5, defines the scope of the standard as containing criteria for determining the variables to be monitored by the control room operator during and following an accident that will need some operator action.

Consideration should be given to the additional requirements (e.g., emergency planning) of variables to be monitored by the plant operator (licensee) during and following an accident. Instrumentation selected for use by the plant operator for monitoring conditions of the plant are useful in an emergency situation and for other purposes and therefore should be factored into the emergency plans action level criteria.

(2) In Section 3.0 of ANS-4.5, the definition of "Type C" includes two items, (1) and (2). Item (1) includes those instruments that indicate the extent to which parameters, which indicate the potential for a breach in the containment, have exceeded the design basis values. In conjunction with the parameters that indicate the potential for a breach in the containment, the parameters that have the potential for causing a breach in the fuel cladding (e.g., core exit temperature) and the reactor coolant pressure boundary (e.g., reactor coolant pressure) should also be included. References to Type C instruments, and associated parameters to be measured, in Draft Standard ANS-4.5 should include this expanded definition, e.g., Section 4.2, Section 5.0c, Section 5.1.3, Section 5.2.2, Section 6.3.

(3) Section 3.0 of ANS-4.5 defines design basis accident events. In conjunction with the design basis accident events delineated in the standard, those events which are expected to occur one or more times during the life of a nuclear power unit and include but are not limited to loss of power to all recirculating pumps, tripping of the turbine generator set, isolation of the main condenser, and loss of all offsite power, should be included.

(4) Section 4.2 of ANS-4.5, discusses the various types of variables. With regard to the discussion of Type D variables, Type D variables and instruments are within the scope of Accident Monitoring Instrumentation, although

they are not addressed in Draft Standard ANS-4.5. They are, however, along with an additional type, Type E, included in this regulatory guide. (See Tables 1, 2 and 3)

(5) Section 5.2.1(5) of ANS-4.5 pertains to the delineation of the local environment in which instruments must operate. Section 5.2.1(5) should be understood to require identification of the range of the local physical and electrical environments (e.g., normal, abnormal, accident, and post-accident) in which all of the various instrumentation components are required to operate (e.g., sensors, cables, signal conditioning equipment, indicators).

(6) Section 5.2.2 of ANS-4.5 pertains to the performance requirements for Type C instrumentation. In conjunction with Section 5.2.2, there should be:

(1) Identification of the range of the process variable. (Note - the range selected should extend well beyond that which the variable value can attain under limiting conditions)

(2) Identification of the required accuracy of measurement

(3) Identification of the required response characteristics

(4) Identification of the time interval beginning with initiation of an accident to as long as the measurement is needed

(5) Identification of the local environment (including energy supply) in which the various instrumentation components are required to operate.

(7) Section 6.1.1 of ANS-4.5, pertains to seismic qualification criteria. In conjunction with Section 6.1.1, those instrumentation components which should be seismically qualified are identified in Table 1 of this regulatory guide.

(8) Section 6.1.1 of ANS-4.5, pertains, in part, to the consideration of vibrational loads. In conjunction with Section 6.1.1, those instrumentation

components which are subjected to vibrational loads that occur as a result of plant system operation during any phase for which the instrumentation is required should be qualified to function during and/or following such vibrational loads.

(9) Section 6.1.2 of ANS-4.5, pertains to the duration that instrumentation is qualified to function. In conjunction with Section 6.1.2, Phase II instrumentation should be qualified to function for not less than 200 days unless a shorter time, based on need or component accessability for replacement or repair, can be justified.

(10) Section 6.1.6 of ANS-4.5 pertains to instrumentation location and identification. In conjunction with Section 6.1.6, accident monitoring instrumentation displays should be located in direct view of the plant operator and be distinguished from other displays. Other accident monitoring instrumentation components should be accessible to the plant operator for maintenance and repair although this may not be possible for some components in some accident conditions.

(11) Section 6.2.1 of ANS-4.5 pertains to general requirements for Type B instruments. In conjunction with Section 6.2.1, Type B instruments are essential to meeting the requirements of Criterion 13 and Criterion 64 of Appendix A to 10 CFR Part 50 and are not considered to be an "extra set of instruments which result in an additional layer of protection." Type B instruments are essential to the monitoring of variables and systems during accident conditions and in following the course of an accident.

(12) Section 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6, 6.3.2, 6.3.3, 6.3.4, and 6.3.5 of ANS-4.5 pertain to variables and variable ranges for monitoring. In conjunction with the above sections, Tables 1, 2 and 3 of this regulatory guide (which includes those parameters mentioned in the above sections) should be used in developing the minimum set of instruments and their respective ranges for accident monitoring instrumentation for each nuclear power plant.

(13) Sections 6.3.2.3, 6.3.3.3, 6.3.3.4, 6.3.4.3, 6.3.4.4, 6.3.5.2, 6.3.5.3, and 6.3.5.4 of ANS-4.5 pertain, in part, to instrument transient response and relate this to compatability with recorder capabilities. In conjunction with the above sections, the transient response requirements of each measurement should be determined on a case-by-case basis by analysis of the event and operator response capabilities.

(14) Sections 6.3.3.3, 6.3.3.4, and 6.3.4.3 of ANS-4.5, pertain, in part, to measurement accuracy. In conjunction with the above sections, the accuracy of each measurement should be consistent with the requirements as established by analysis of the event being monitored.

(15) Section 6.3.6.1.1 ANS-4.5 pertains, in part, to the qualification of Type C instrumentation components. In conjunction with Section 6.3.6.1.1, the environmental envelope for qualification should be the extreme value of each environmental parameter, except the variable being monitored, as determined by the accident analysis for all accidents evaluated in the safety analysis of the plant.

(16) Table 6.4.1 of ANS-4.5 pertains to design criteria for accident monitoring instrumentation. In conjunction with Table 6.4.1, the provisions as indicated in Table 1 of this regulatory guide should be used.

D. IMPLEMENTATION

This proposed revision has been released to encourage public participation in its development. Except in those cases in which an applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method to be described in the active guide reflecting public comments will be used in the evaluation of the following applications that are docketed after the implementation date to be specified in the guide:

1. Preliminary Design Approval (PDA) applications and Preliminary Duplicate Design Approval (PDDA) applications.

2. Final Design Approval, Type 2 (FDA-2), applications and Final Duplicate Design Approval, Type 2 (FDDA-2), applications.

3. Manufacturing License (ML) applications.

4. Construction Permit (CP) applications except for those portions of CP applications that reference standard designs (i.e., PDA, FDA-1, FDA-2, PDDA, FDDA-1, FDDA-2, or ML) or that reference qualified base plant designs under the replication option.

In addition, the NRC staff intends to implement part or all of this guide for all operating plants, plants under construction, all PDA's and FDA's, all PDDA's and all FDDA's which may involve additions, elimination, or modification of structures, systems, or components of the facility after the construction permit, or design approval has been issued. All backfitting decisions in accordance with the positions stated in this guide will be determined by the staff on a case-by-case basis.

The implementation date of this guide will in no case be earlier than _____.

TABLE 1 - DESIGN CRITERIA[1]

CRITERIA	INSTRUMENTATION TYPES[2]				
	A	B	C	D	E
1. Seismic Qualification per Reg Guide 1.100	yes	yes	yes	no	no
2. Single Failure Criteria per Reg Guide 1.53	yes	yes	yes	no	no
3. Environmental Qualification per Reg Guide 1.89	yes	yes	yes[3]	yes	no[4]
4. Consider loss of off-site power	yes	yes	yes	yes	yes
5. Power source	Emr[5]	CB[6]	CB[6]	Emr[5]	Emr[5]
6. Out of service interval before accident	7	7	7	8	9
7. Portable	no	no	no[10]	no[10]	no[10]
8. Quality assurance level	11	11	11	11	11
9. Display type[12]	Con[13]	Con[13]	Con[13]	OD[14]	OD[14]
10. Display method	Rec[15]	Rec[16]	Rec[16]	Ind[17]	Ind[17,18]
11. Unique identification	yes	yes	yes	no	no
12. Periodic testing per Reg Guide 1.118	yes	yes	yes	yes	no

NOTES for Table 1:

(1) Unless different specifications are given in this regulatory guide, the specifications in ANSI N320-1979, "Performance Specifications for Reactor Emergency Radiological Monitoring Instrumentation," apply to the high-range containment area monitors, area exposure rate monitors in other buildings, effluent and environmental monitors, and portable instruments for measuring radiation or radioactivity.

(2) Type A - Those instruments which provide information required to take pre-planned manual actions.
Type B - Those instruments which provide information to monitor the process of accomplishing critical safety functions.
Type C - Those instruments that indicate the potential for breaching or the actual breach of the barriers to fission product release.
Type D - Those instruments that indicate the performance of individual safety systems.
Type E - Those instruments that provide information for defense-in-depth and for diagnosis or other useful purposes.

NOTES for Table 1 continued:

(3) See Paragraph 6.3.6 of Draft Standard ANS-4.5.

(4) Qualified to the conditions of its operation.

(5) Emergency power source.

(6) Critical Instrument Buss - Class 1E Power.

(7) IEEE 279-1971 Paragraph 4.11, "Exemption".

(8) Based on normal tech spec requirements on out-of-service for the safety system it serves.

(9) Not necessary to include in tech specs.

(10) Radiation monitoring outside containment may be portable if as designated.

(11) Level of quality assurance per 10 CFR Part 50, Appendix B.

(12) Continuous indication or recording displays a given variable at all times; intermittent indication or recording displays a given variable periodically; on demand indication or recording displays a given variable only when requested.

(13) Continuous display.

(14) Indication on demand.

(15) Where trend or transient information is essential to planned operator actions.

(16) Recording.

(17) Dial or digital indication.

(18) Effluent release monitors require recording, including effluent radioactivity monitors, environs exposure rate monitors, and meteorology monitors.

1432 292

TABLE 2 - PWR VARIABLES

Measured Variable	Range	Type	Purpose
CORE:			
Core Exit Temperature	150°F to 2300°F	B,C	ANS-4.5, Section 6.2.3 Provide incore temperature measurements to identify localized hot areas. (Approximately 50 measurements)
Control Rod Position	Full in or not full in	D	Provide positive indication that the control rods are fully inserted. (Minimum 5 days after accident)
Neutron Flux	1 c/s to 1% power (at least one fission counter)	E	ANS-4.5, Section 6.2.2 For indication of approach to criticality.
REACTOR COOLANT SYSTEM:			
RCS Hot Leg Temperature	150°F to 750°F	B	ANS-4.5, Section 6.2.3 To aid in determining reactor system subcooling and to provide indication of natural circulation.
RCS Cold Leg Temperature	150°F to 750°F	B	ANS-4.5, Section 6.2.3 To provide indication of natural circulation; to provide input for heat balance calculations; for direct indication of ECCS injection.
RCS Pressure	15 psia to 4000 psig	B,C	ANS-4.5, Sections 6.2.3 and 6.2.4 For indication of an accident and to indicate that actions must be taken to mitigate an event.
Pressurizer Level	Bottom tangent to top tangent	B,D	ANS-4.5, Section 6.2.3 Level indication is required to assure proper operation of the pressurizer and to assure safe operation of heaters. It is also used in conjunction with changes in reactor pressure to determine leak and void sizes.
Degree of Subcooling	200°F subcooling to 35°F superheat	E	For indication of margin in core cooling and the need for emergency coolant additions or reductions as the margin changes and to obviate the necessity to consult steam tables.

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
REACTOR COOLANT SYSTEM CONTINUED:			
Reactor Coolant Loop Flow	0 to 120%]] -20% to 20%]) design flow[1]	B,D	To provide indication that the core is being cooled.
Primary System Safety Relief Valve Positions or Flow Through or Pressure In Relief Valve Lines	Closed-not closed	B,D	By these measurements the operator knows if there is a path open for loss of coolant and that an event may be in progress.
Radiation Level in Primary Coolant Water	10 μCi/g to 10 Ci/g	C	ANS-4.5, Section 6.3.2 For early indication of fuel cladding failure and estimate of extent of damage.
CONTAINMENT:			
Containment Pressure	10 psia pressure to 3 times design pressure[2] for concrete; 4 times design pressure for steel	B,C	ANS-4.5, Sections 6.2.5, 6.3.3, 6.3.4, and 6.3.5 For indication of the integrity of the primary or secondary system pressure boundaries. To indicate the potential for leakage from the containment; to indicate integrity of the containment.
Containment Atmosphere Temperature	40°F to 400°F	E	For indication of the performance of the containment cooling system and adequate mixing.
Containment Hydrogen Concentration	0 to 10% (capable of operating from 10 psia to maximum design pressure[2]	B,C	ANS-4.5, Sections 6.2.5 and 6.3.5 For indication of the need, and to measure the performance of the containment hydrogen recombiner.
Containment Isolation Valve Position	Closed-not closed	B,D	ANS-4.5, Section 6.2.5 To indicate the status of containment isolation and to provide information on the status of valves in process lines which could carry radioactive materials out of containment.

1432 294

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
CONTAINMENT CONTINUED:			
Containment Sump Water Level	Narrow range (sump) Wide range (bottom of containment to 600,000 gallon level equivalent)	B,C	For indication of leakage within the containment and to assure adequate inventory for performance of the ECCS.
High Range Containment Area Radiation	1 to 10^7 R/hr (60 keV to 3 MeV photons with ±20% accuracy for photons of 0.1 to 3 MeV) [10^7 R/hr for photons is approximately equivalent to 10^8 rads per hour for betas and photons]	B,C	For implementation of GDC 64 and to help identify if an accident has degraded beyond calculated values and to indicate its magnitude to determine action to protect the public.
SECONDARY SYSTEMS:			
Steam Generator Pressure	From pressure for safety valve setting to plus 20% of safety valve setting	D	For indication of integrity of the secondary system, and an indication of capability for decay heat removal.
Steam Generator Level	From tube sheet to separators	D	For indication of integrity of the secondary system, and an indication of capability for decay heat removal.
Auxiliary Feedwater Flow	0 to 110% design flow[1]	D	To indicate an adequate source of water to each steam generator upon loss of main feedwater.
Main Feedwater Flow	0 to 110% design flow[1]	E	To indicate an adequate source of water to each steam generator.
Safety/Relief Valve Positions or Main Steam Flow	Closed-not closed	B,D	To indicate integrity of secondary system (vis-a-vis pipe break).
Radiation in Condenser Air Removal System	10^{-7} to 10^5 µCi/cc		To indicate leakage from the primary to the secondary system and measure of noble gas release rate to atmosphere.
Radioactivity in Effluent from Steam Generator Safety Relief Valves or Atmospheric Dump Valves	10^{-7} to 10^5 µCi/cc	B,C	An indication of release from the secondary system and measure of noble gas release rate to atmosphere.

1432 295

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
AUXILIARY SYSTEMS:			
Containment Spray Flow	0 to 110% design flow[1]	D	For indication of system operation.
Flow in HPI System	0 to 110% design flow[1]	D	For indication of system operation.
Flow in LPI System	0 to 110% design flow[1]	D	For indication of system operation.
Emergency Coolant Water Storage Tank Level	Top to bottom	D	To determine the amount of water discharged by the ECCS. This provides indication of the nature of the accident, indication of the performance of the ECCS, and indication of the necessity for operator action.
Accumulator Tank Level	Top to bottom	D	To indicate whether the tanks have injected to the reactor coolant system.
Accumulator Isolation Valve Positions	Closed-not closed	D	To indicate state of the isolation valves. (Per Regulatory Guide 1.47)
RHR System Flow	0 to 110% design flow[1]	D	For indication of system operation.
RHR Heat Exchanger Out Temperature	32°F to 350°F	D	For indication of system operation.
Component Cooling Water Temperature	32°F to 200°F	D	For indication of system operation.
Component Cooling Water Flow	0 to 110% design flow[1]	D	For indication of system operation.
Flow in UHS Loop	0 to 110% design flow[1]	D	For indication of system operation.
Temperature in Ultimate Heat Sink Loop	30°F to 150°F	D	For indication of system operation.
Ultimate Heat Sink Level	At specific	D	To ensure adequate source of cooling water.
Heat Removal by the Containment Fan Coolers	Plant specific	B	to indicate system operation
Boric Acid Charging Flow	0 to 110% design flow[1]	B	To provide indication of reactor cooling and inventory control and maintain adequate concentration for shutdown margin.

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
AUXILIARY SYSTEMS CONTINUED:			
Letdown Flow	0 to 110% design flow[1]	D	For indication of reactor coolant inventory control and boron concentration control.
Sump Level in Spaces of Equipment Required for Safety	To corresponding level of safety equipment failure	D	To monitor environmental conditions of equipment in closed spaces.
RADWASTE SYSTEMS:			
High Level Radioactive Liquid Tank Level	Top to bottom	E	Available volume to store primary coolant
Radioactive Gas Hold-up Tank Pressure	0 to 150% of design pressure[2]	E	Available capacity to store waste gases.
VENTILATION SYSTEMS:			
Emergency Ventilation Damper Position	Open-closed status	D	To ensure proper ventilation under accident conditions.
Temperature of Space in Vicinity of Equipment Required for Safety	30°F to 180°F	D	To monitor environmental conditions of equipment in closed spaces.
POWER SUPPLIES:			
Status of Class 1E Power Supplies and Systems	Voltages and currents	D	To ensure an adequate source of electric power for safety systems.
Status of Non-Class 1E Power Supplies and Systems	Voltages and currents	E	It indicate an adequate source of electric power.

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
RADIATION EXPOSURE RATES INSIDE BUILDINGS OR AREAS WHERE ACCESS IS REQUIRED TO SERVICE SAFETY RELATED EQUIPMENT:			
Radiation Exposure Rates	10^{-1} to 10^{4} R/hr for photons (permanently installed monitors)	E	For measurement of high-range radiation exposure rates at various locations.
AIRBORNE RADIOACTIVE MATERIALS RELEASED FROM THE PLANT:			
Effluent Radioactivity - Noble Gases	(Normal plus accident range for noble gas)	E	ANS-4.5 Section 6.2.6 To provide operator with information regarding release of radioactive noble gases on a continuous basis.
.Containment	10^{-7} to 10^{5} µCi/cc Xe-133 calibration		
.Secondary Containment	10^{-7} to 10^{4} µCi/cc Xe-133 calibration		
.Auxiliary Building including buildings containing primary system gases, e.g., waste gas decay tank	10^{-7} to 10^{3} µCi/cc		
.Other Release Points [including fuel handling area if separage from auxiliary building]	10^{-7} to 10^{2} µCi/cc (permanently installed monitors)		
Effluent Radioactivity - High Range Radiohalogens and Particulates		E	To provide the operator with information regarding release of radioactive halogens and particulates. Continuous collection of representative samples followed by monitoring (measurements) of samples for radiohalogens and for particulates.
.Untreated Effluents	10^{-3} to 10^{2} µCi/cc		
.HEPA Filters, minimum of 2" of TEDA impregnated charcoal, non-ESF systems	10^{-3} to 10 µCi/cc		
.HEPA Filters, minimum of 4" of TEDA impregnated charcoal, ESF systems	10^{-3} to 1 µCi/cc (permanently installed monitors)		

1432 298

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
AIRBORNE RADIOACTIVE MATERIALS RELEASED FROM THE PLANT CONTINUED:			
Environs Radioactivity - High Range Exposure Rate	10^{-3} to 10^{2} R/hr (60 keV to 3 MeV) (permanently installed monitors)	E	For estimating release rates of radioactive materials released during an accident from unidentified release paths (not covered by effluent monitors) - continuous readout capability, approximately 16 to 20 locations - site dependent.
Environs Radioactivity - Radiohalogens and Particulates	10^{-9} to 10^{-3} µCi/cc for both radiohalogens and particulates (permanently installed monitors)	E	For estimating releases rates of radio active materials released during an accident from unidentified release paths (not covered by effluent monitors). Continuous collection of representative samples followed by monitoring (measurements) of the samples. (Approximately 16 to 20 locations)
AIRBORNE RADIOACTIVE MATERIALS RELEASES FROM THE PLANT CONTINUED:			
Plant and Environs Radioactivity (portable instruments	Normal Range 0.1 to 10^{4} mR/hr photons 10^{-9} to 10^{-4} µCi/cc particulates 10^{-9} to 10^{-4} µCi/cc iodine High Range 0.1 to 10^{4} R/hr photons 0.1 to 10^{4} rads/hr betas and low energy photons	E	During and following an accident, to mo itor radiation and airborne radioactivi concentrations in many areas throughout the facility where is impractical to install stationary monitors capable of covering both normal and accident level
	100-channel gamma-ray spectrometer	E	During and following an accident to rapidly scope the composition of gamma-emitting sources.

1432 299

TABLE 2 - PWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
ST-ACCIDENT SAMPLING PABILITY:			
Primary Coolant Sumps Containment Air	As required based on Reg Guide 1.4 guidelines	N/A	Provide means for safe and convenient sampling. These provisions should include: 1. shielding to maintain radiation doses ALARA, 2. sample containers with container-sampling port connector compatibilit 3. capability of sampling under primary system pressure and negative pressur 4. handling and transport capability, a 5. pre-arrangement for analysis and interpretation.
ST-ACCIDENT ANALYSIS PABILITY (ONSITE):	1. gamma-ray spectrum 2. pH 3. hydrogen 4. oxygen 5. boron	N/A	
TEOROLOGY:			
Wind Direction	0 to 360° (±5° accuracy with a deflection of 15°. Starting speed 0.45 mps (1 mph)	E	For determining affluent transport direction for emergency planning, dose assessment, and source estimates.
Wind Speed	0 to 30 mps (67 mph) (±0.22 mps (0.5 mph) accuracy for wind speeds less that 11 mps (25 mph), with a starting threshold of less than 0.45 mps (1 mph)	E	For determining effluent travel speed and dilution for emergency planning, doses assessments and source estimates.
Vertical Temperature Difference	-9°F to +9°F (±0.3°F accuracy per 164 foot intervals	E	For determining effluent diffusion rates for emergency planning, dose assessments and source estimates.
Precipitation	Recording rain gage with range sufficient to assure accuracy of total accumulation within 10% of recorded value - 0.01" resolution	E	For determining effluent transport and ground deposition for emergency planning.

1432 300

Notes for Table 2 -

(1) Design flow - the maximum flow anticipated in normal operation.

(2) Design pressure - that value corresponding to ASME code values which are obtained at or below code allowable material design stress values.

TABLE 3 - BWR VARIABLES

Measured Variable	Range	Type	Purpose
CORE:			
Control Rod Position	Full in or not full in	D	Provide positive indication that the control rods are fully inserted. (Minimum of 2 hours after accident)
Neutron Flux	1 c/s to 1% power (at least one fission counter)	B	ANS-4.5, Section 6.2.2 For indication of approach to criticality
REACTOR COOLANT SYSTEM:			
RCS Pressure	15 psia to 2000 psig	B,C	ANS-4.5, Sections 5.2.3, 6.2.4, 6.3.3 and 6.3.5 For indication of an accident and to indicate that actions must be taken to mitigate an event.
Coolant Level in the Reactor	Bottom of core support plate to above top of discharge plenum	B	ANS-4.5, Section 6.2.3 For indication of fuel submergency for a LOCA event.
Main Steamline Flow	0 to 120% design flow[1]	B	To provide an indication of the integrity of the pressure boundary.
Main Steamline Isolation Valves' Leakage Control System Pressure	0 to 15" of water 0 to 5 psid	B	To provide an indication of the pressure boundary and containment integrity.
Primary System Safety Relief Valve Positions including ADS or Flow Through or Pressure in Valve Lines	Closed-not closed or 0 to 50 psig	B,D	By these measurements the operator knows if there is a path open for loss of coolant and that an event may be in progress.
Radiation Level in Coolant	10 uCi/g to 10 Ci/g	C	ANS-4.5, Section 6.3.2 For early indication of fuel cladding failure and estimate of extent of damage.

1432 301

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
CONTAINMENT:			
Primary Containment Pressure	10 psia pressure to 3 times design pressure[2] for concrete; 4 times design pressure for steel	B,C	ANS-4.5, Sections 6.2.5, 6.3.3, 6.3.4, and 6.3.5 For indication of the intergrity of the primary containment pressure boundary; to indicate the potential for leakage from the containment.
Containment and Drywell Hydrogen Concentration	0 to 10% (capability of operating from 12 psia to maximum design pressure[2]	B,C	ANS-4.5, Sections 6.2.5, and 6.3.5 For indication of the need for, and a measurement of the performance of the containment hydrogen recombiner and to verify the operation of the mixing system
Containment Isolation Valve Position	Closed-not closed	B,D	ANS-4.5, Section 6.2.5 To indicate the status of containment isolation and to provide information on the status of valves in process lines which could carry radioactive materials out of containment.
Suppression Pool Water Level	Top of vent to top of weir well	B	ANS-4.5, Section 6.3.3
Suppression Pool Water Temperature	50°F to 250°F	B	To assure proper temperature for NPSH of ECCS. To verity the operation of the makup system.
Drywell Pressure	12 psia to 3 psig 0 to 110% design pressure	B E	ANS-4.5. Section 6.3.3 Diagnosis of impact of accident on drywell structure.
Drywell Drain Sumps Level (Identified and Unidentified Leakage)	Bottom to top	B,C	ANS-4.5, Section 6.3.3
High Range Containment Area Radiation	1 to 10^7 R/hr (60 keV to 3 MeV photons with ±20% accuracy for photons of 0.1 to 3 MeV)[10^7 R/hr for photons is approximately equivalent to 10^8 rads/hr for betas and photons]	B,C	To help identify if an accident has degraded beyond calculated values and indicate its magnitude and to determine action to protect the public.

1432 302

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
POWER CONVERSION SYSTEMS:			
Main Feedwater Flow	0 to 110% design flow[1]	E	To indicate an adequate source of water to the reactor.
Condensate Storage Tank Level	Bottom to top	E	To indicate available water for core cooling.
AUXILIARY SYSTEMS:			
Containment Spray Flow	0 to 110% design flow[1]	D	For indication of system operation.
Steam Flow to RCIC	0 to 110% design flow[1]	E	To verify that adequate steam is available for the system to perform its function.
RCIC Flow	0 to 110% design flow[1]	D	For indication of system operation.
RHR System Flow	0 to 110% design flow[1]	D	For indication of system operation.
RHR Heat Exchanger Outlet Temperature	32°F to 350°F	D	For indication of system operation.
Service Cooling Water Temperature	32°F to 200°F	D	For indication of system operation.
Service Cooling Water Flow	0 to 110% design flow[1]	D	For indication of system operation.
Flow in UHS Loop	0 to 110% design flow[1]	D	For indication of system operation.
Temperature in Ultimate Heat Sink Loop	30°F to 150°F	D	For indication of system operation.
Ultimate Heat Sink Level	Plant specific	D	To ensure adequate source of cooling water.
SLCS Storage Tank Level	Bottom to top	E	To provide indication of inventory for boron injection for shutdown.
Sump Level in Spaces of Equipment Required for Safety	To corresponding level of safety equipment failure	D	To monitor potential for failure of equipment in closed spaces due to flooding.

1432 303

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
RADWASTE SYSTEMS:			
High-Radioactivity Liquid Tank Level	Top to bottom	E	Available volume to store primary coolant.
Charcoal Delay Gas System Gas Flow or Radioactivity Level	As required	E	To monitor performance of system.
VENTILATION SYSTEMS:			
Emergency Ventilation Damper Position	Open-closed status	D	To ensure proper ventilation under accident conditions.
Temperature of Space in Vicinity of Equipment Required for Safety	30°F to 130°F	B	To monitor environmental conditions of equipment in closed spaces.
POWER SUPPLIES:			
Status of Class 1E Power Supplies and Systems	Voltages and currents	D	To ensure an adequate source of electric power for safety systems
Status of Non-Class 1E Power Supplies and Systems	Voltages and currents	E	To indicate an adequage source of electric power.
RADIATION EXPOSURE RATES INSIDE BUILDINGS OR AREAS WHERE ACCESS IS REQUIRED TO SERVICE SAFETY RELATED EQUIPMENT:			
Radiation Exposure Rates	10^{-1} to 10^{4} R/hr for photons (permanently installed monitors)	E	For measurement of high-range radiation exposure rates at various locations.

1432 304

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
AIRBORNE RADIOACTIVE MATERIALS RELEASES FROM THE PLANT:			
Effluent Radioactivity - Noble Gases	(Normal plus accident range for noble gas)	E	ANS-4.5, Section 6.2.6 To provide operator with information regarding release of radioactive noble gases on a continuous basis.
.Containment Exhaust Vent and Standby Gas Treatment System Vent	10^{-7} to 10^{5} µCi/cc Xe-133 calibration		
.Other Release Points [including fuel handling building, auxiliary building, and turbine building]	10^{-7} to 10^{2} µCi/cc Xe-133 calibration (permanently installed monitors)		
Effluent Radioactivity - High Range Radiohalogens and Particulates		E	To provide the operator with information regarding release of radioactive halogens and particulates. Continuous collection of representative samples followed by monitoring (measurements) of samples for radiohalogens and for particulates.
.Untreated Effluents	10^{-3} to 10^{2} µCi/cc		
.HEPA Filters, minimum of 2" of TEDA impregnated charcoal, non-ESF systems	10^{-3} to 10 µCi/cc		
.HEPA Filters, minimum of 4" of TEDA impregnated charcoal, ESF systems	10^{-3} to 1 µCi/cc (permanently installed monitors)		
Environs Radioactivity - High Range Exposure Rate	10^{-3} to 10^{2} R/hr (60 keV to 3 MeV) (permanently installed monitors)	E	For estimating release rates of radioactive materials released during an accident from unidentified release paths (not covered by effluent monitors) - continuous readout capability, approximately 16 to 20 locations - site dependent.
Environs Radioactivity - Radiohalogens and Particulates	10^{-9} to 10^{-3} µCi/cc for both radiohalogens and particulates (permanently installed monitors)	E	For estimating releases rates of radioactive materials released during an accident from unidentified release paths (not covered by effluent monitors). Continuous collection of representative samples followed by monitoring (measurements) of the samples. (Approximately 16 to 20 locations)

1432 305

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
AIRBORNE RADIOACTIVE MATERIALS RELEASES FROM THE PLANT CONTINUED:			
Plant and Environs Radioactivity (portable instruments	Normal Range 0.1 to 10^4 mR/hr photons 10^{-9} to 10^{-4} µCi/cc particulates 10^{-9} to 10^{-4} µCi/cc iodine High Range 0.1 to 10^4 R/hr photons 0.1 to 10^4 rads/hr betas and low energy photons	E	During and following an accident, to monitor radiation and airborne radioactivity concentrations in many areas throughout the facility where is impractical to install stationary monitors capable of covering both normal and accident levels.
	100-channel gamma-ray spectrometer	E	During and following an accident to rapidly scope the composition of gamma-emitting sources.
POST-ACCIDENT SAMPLING CAPABILITY:			
Primary Coolant Suppression Pool Containment Air	As required based on Reg Guide 1.3 guidelines	N/A	Provide means for safe and convenient sampling. These provisions should include: 1. shielding to maintain radiation doses ALARA, 2. sample containers with container-sampling port connector compatibility 3. capability of sampling under primary system pressure and negative pressure 4. handling and transport capability, an 5. pre-arrangement for analysis and interpretation.
POST-ACCIDENT ANALYSIS CAPABILITY (ONSITE):	1. gamma-ray spectrum 2. pH 3. hydrogen 4. oxygen	N/A	
METEOROLOGY:			
Wind Direction	0 to 360° (±5° accuracy with a deflection of 15°. Starting speed 0.45 mps (1 mph)	E	For determining affluent transport direction for emergency planning, dose assessment, and source estimates.
Wind Speed	0 to 30 mps (67 mph) (±0.22 mps (0.5 mph) accuracy for wind speeds less that 11 mps (25 mph), with a starting threshold of less than 0.45 mps (1 mph)	E	For determining effluent travel speed and dilution for emergency planning, doses assessments and source estimates.

1432 306

TABLE 3 - BWR VARIABLES continued -

Measured Variable	Range	Type	Purpose
METEOROLOGY CONTINUED:			
Vertical Temperature Difference	-9°F to +9°F (±0.3°F accuracy per 164 foot intervals	E	For determining effluent diffusion rate: for emergency planning, dose assessment and source estimates.
Precipitation	Recording rain gage with range sufficient to assure accuracy of total accumulation within 10% of recorded value - 0.01" resolution	E	For determining effluent transport and ground deposition for emergency planning

Notes for Table 3 -

(1) Design flow - the maximum flow anticipated in normal operation.

(2) Design pressure - that value corresponding to ASME code values which are obtained at or below code allowable material design stress values.

1432 307

ANS-4.5

Draft 3
September, 1979

DRAFT

CAUTION NOTICE: This Standard is being prepared or reviewed and has not been approved by ANS. It is subject to revision or withdrawal before issue.

DRAFT

American National Standard

FUNCTIONAL REQUIREMENTS FOR POST ACCIDENT MONITORING CAPABILITY FOR THE CONTROL ROOM OPERATOR OF A NUCLEAR POWER GENERATING STATION

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TABLE OF CONTENTS

FOREWORD

ANS 4 established Working Group 4.5 in late July 1979 to prepare a draft standard on Accident Monitoring Instrumentation which would complement other standards, but be broader in nature by including economic considerations. Two primary objectives were 1) to address that instrumentation which permits the operator to monitor expected parameter changes in the accident period, and 2) to address extended range instrumentation deemed appropriate for the possibility of encountering previously unforeseen events.

ANS 4.5 began work on July 30th and met for 13 working days in a seven week period. In addition, a Design Criteria subgroup met for two days in this same period.

As presented, this draft standard provides:

1. a list of functions to be performed (design basis section 5.0)

2. a framework to determine those variables to be monitored (design basis section 5.0)

3. an identification of three time periods of interest (definitions 3.0)

4. an identification of four variable types (definitions 3.0)

5. a delineation of applicable design criteria for the variables to be monitored (design criteria section 6.0)

No identification of specific Type A monitored variables is provided in this standard. Recommendations for Type B and Type C monitored variables are provided in Section 6.0.

1432 310

The significant issues in the development of this standard have been:

1. the scope of the document in terms of applicability to the control room operator or the plant operator (licensee). The work group chose a control room operator scope.

2. the pre-planned operator actions designated by the accident analyses in Chapter 15 of a plant's FSAR and the not previously planned operator action that may be required during unforeseen events. The Working Group established Type A instrumentation for the former, and Type B or C instrumentation for the latter.

3. The monitoring of actual fission product barrier integrity and the potential for breach of a given barrier. The work group chose monitoring of actual breach for the fuel, reactor coolant system, and containment barrier, but only the potential breach of the containment barrier.

4. the degree of alignment of accident monitoring instrumentation with IEEE Class 1E (ANS Class EC-3) and whether an intermediate class is needed between 1E and non-1E.

5. whether a list of variables should be included as an appendix to the standard:

   a. a list of only Type C parameters
   b. a list of Type A, B, C and D parameters

6. the definition of instrument types B and D and whether these types should be included in the standard.

The membership of the Working Group is as follows:

L. Stanley, Chairman
T. Timmons, Vice Chairman and Correspondent

F432 311

D. Sommers
E. Wenzinger
D. Lambert
R. Bauerle
J. Castanes
M. Wolpert
H. Mumford
X. Polanski
E. Dowling

Additional input has been provided to the Working Group by industry, university, and government participants throughout the meetings. The Work Group is very appreciative of this assistance.

1432 312

1.0 Introduction

The Code of Federal Regulations requires that instrumentation be provided to monitor variables and systems over their anticipated ranges for accident conditions as appropriate to assure adequate safety. The purpose of this standard is to establish criteria for the selection of that instrumentation. These criteria are based on the sequence and duration of the phases through which an accident progresses. The control room operator may have different information requirements for each phase of an accident.

This standard presents criteria for monitoring the response of the plant to design basis events. It also presents criteria for monitoring the integrity of fission product barriers under conditions which have degraded beyond the design bases. This fission product barrier monitoring is considered to be an extra set of instrumentation beyond that required for satisfactorily monitoring accident scenarios postulated in the plant safety analysis.

Throughout these criteria, three verbs have been used to indicate the degree of rigor intended by the specific criterion. The word "shall" is used to denote a requirement; the word "should" to denote a recommendation; and the word "may" to denote permission, neither a requirement nor a recommendation.

2.0 SCOPE

This standard contains criteria for determining the variables to be monitored by the control room operator, as required for safety, during the course of an accident and during the long-term stable shutdown phase following the accident. Also included are criteria for determining the requirements for the equipment used to monitor those variables.

The scope of the standard is limited to onsite environment and process monitoring. Emergency preparedness planning is, or will be, covered by other standards.

3.0 DEFINITIONS

Phase I — That portion of the accident extending from the initiation of the accident to that point at which the plant is in a controlled condition.

Phase II — That portion of the accident extending from the time at which the plant is in a controlled condition to that point at which personnel access to the location of the accident is possible.

Phase III — That portion of the accident extending from the time at which personnel access to the location of the accident is possible to the time at which the plant has returned to operating status or been decommissioned.

Type A — Instruments - Those instruments which provide the information required to permit the control room operator to take the pre-planned manual actions to accomplish safe plant shutdown for design basis accident events and to maintain long term plant stability.

Type B — Those instruments which provide to the control room operator information to monitor the process of accomplishing critical safety functions, i.e., reactivity control, core cooling, maintaining reactor coolant system integrity, maintaining containment integrity and radioactive effluent control.

Type C — Those instruments that indicate in the control room (1) the extent to which parameters, which have the potential for causing a breach of the final fission product barrier (i.e., the containment), have exceeded the design basis values, or (2) that a fission product barrier (i.e., fuel clad, reactor coolant pressure boundary or the containment) has been breached.

Type D — Those instruments which indicate to the control room operator the performance of individual safety systems.

Design Basis Accident Events

Those events postulated in the plant safety analyses, any one of which may occur during the lifetime of a particular plant, excluding those events which are expected to occur during a calendar year for a particular plant; and those events that are not expected to occur but are postulated in the plant safety analyses because their consequences would include the potential for the release of significant amounts of radioactive material.

4.0 DISCUSSION

It is the philosophy of this Standard that instrumentation is required to monitor plant performance during and after an accident. The purposes of the accident monitoring instrumentation are enumerated in Section 5.0, Design Basis. This Standard specifies the plant safety functions to be performed and the criteria to be used by the designer in selecting the variables to be monitored.

Certain concepts have been established to aid the system designer in the selection of variables to monitor the course of an accident and to arrive at appropriate design criteria for instruments to monitor these variables.

4.1 Planned Versus Unplanned Operator Actions

The plant safety analysis defines the accident scenarios from which the safety system design bases and the planned or anticipated operator actions are derived. Accident monitoring instrumentation is provided to permit the operator to take required actions to address these analyzed situations. However, instrumentation must also be provided for unplanned situations, (i.e., to ensure that, should plant conditions evolve differently than predicted by the safety analysis, the operator has sufficient information to monitor the course of the event). Instrumentation must also be provided to indicate to the operator if fission product barrier integrity has degraded beyond the prescribed limits of the Safety Analysis.

4.2 Variable Types

Four classifications of variables have been identified. Operator manual actions during accidents included in the plant safety analysis are anticipated or pre-planned. Those variables that provide information needed by the operator to perform these manual actions are designated

Type A. Those variables needed to assess that the plant safety functions are being accomplished, as identified in the plant safety analysis, are designated Type B. Variables used to monitor for the actual gross breach of one of the fission product barriers or the potential breach of the final fission product barrier (containment) are designated Type C. Type C variables used to monitor the potential breach of containment have an arbitrarily-determined, extended range. The fourth classification, Type D, consists of those variables monitored to ascertain that the safety systems are performing as designed. Type D variables are less important than Types A, B and C for accident monitoring since safety system performance only infers safety function accomplishment. Type D variables and instruments are not considered to be within the scope of Accident Monitoring Instrumentation. Guidance on the selection of Type D variables and the specification of appropriate design criteria are not given in this standard. This guidance is provided in standards for design of safety systems (e.g. IEEE-603, ANSI N18.2, etc). The four classifications are not mutually exclusive in that a given variable (or instrument) may be included in one or more types. This differentiation by variable type is intended only to guide the designer in his selection of accident monitoring variables and applicable criteria.

4.3 Accident Phases

The typical accident sequence has been subdivided into three phases: Phase I covers the initial portion of the accident, Phase II covers the stable long-term cooling portion of the accident up to the time where personnel access is possible, and Phase III addresses the period following personnel access to the accident area. This sub-division has been made so that variable selection and design criteria application can reflect the differing conditions which characterize these three phases. For example, Phase I can be anticipated to be of relatively short duration, having relatively severe plant conditions, and allowing no personnel access to the accident area. Phase II is expected to be of longer duration, to require a significant number of operator actions, under milder plant conditions, but with still no personnel access to the accident area. Phase III is expected to be of even longer duration where

personnel access is possible. Different design criteria are then appropriate for each of the three phases. In this Standard, guidance and criteria are provided for Phases I and II.

5.0 Design Basis

The plant designer shall perform and document an analysis to select accident monitoring instruments. He shall identify instruments required by his design to enable the control room operator to:

A. Perform pre-planned manual actions.

B. Ascertain the performance of:

(1) Reactivity control
(2) Reactor core cooling
(3) Reactor coolant system integrity
(4) Containment integrity
(5) Radioactive effluent control

C. Ascertain the extent to which parameters, which have the potential for causing a breach of the containment, have exceeded the design basis values and to ascertain that a fission product barrier (i.e. fuel clad, reactor coolant system pressure boundary or the containment) has been breached.

5.1 Variable Selection for Phases I and II

The process for selection of the Accident Monitoring Instrumentation variables shall include:

5.1.1 For Type A

1) Identification of the postulated accidents for which manual action is required.

2) Identification of planned operator actions

3) Identification of the monitored variables needed for planned operator actions.

5.1.2 For Type B

1) Identification of the monitored variables that provide the most direct indication needed to assess the accomplishments of:

   a. Reactivity Control
   b. Reactor Core Cooling
   c. Reactor Coolant System Integrity
   d. Containment Integrity
   e. Radioactive Effluent Control

Guidance on the selection of these variables is provided in Section 6.0.

5.1.3 For Type C

1) Identification of the monitored variables that provide the most direct indication of a gross breach of a fission product barrier or of an approach to breach of the containment. These instruments may have extended ranges. Guidance on the selection of these variables is provided in Section 6.0.

5.1.4 Phase III Access

Prior to the termination of Phase II, the ability to gain access to the location of the accident must be determined. Instrumentation that indicates when conditions are acceptable for personnel access shall be identified.

5.2 PERFORMANCE REQUIREMENTS FOR PHASES I AND II

The process for determining performance requirements of Accident Monitoring Instrumentation shall include, as a minimum, the following considerations:

1432 321

5.2.1 For Types A and B

1) Identification of the expected range of the process variable.
2) Identification of the required accuracy of measurement.
3) Identification of the required response characteristics.
4) Identification of the time interval during which the measurement is needed.
5) Identification of the local environment in which the instrument must operate.

5.2.2 For Type C

The performance requirements for these instruments are arbitrary. Guidance on these requirements is provided in Section 6.0.

6.0 DESIGN CRITERIA

6.1 GENERAL DESIGN CRITERIA

6.1.1 SEISMIC QUALIFICATIONS

Accident monitoring instrumentation that is to be seismically qualified shall be qualified according to IEEE Standard 344-1975. The instrumentation shall be qualified to continue to function within the required accuracy following, but not necessarily during, a safe shutdown earthquake. Vibration loads which occur as a result of plant system operation during any phase for which the instrument is required shall be considered.

6.1.2 DURATION

Accident monitoring instrumentation shall be qualified for the length of time its function is required. Unless other times can be justified, Phase II instrumentation shall be qualified to function for not less than 100 days. A shorter time may be acceptable if instrumentation equipment replacement or repair can be accomplished within an acceptable out-of-service time, taking into consideration the environment where the equipment is located.

6.1.3 DIRECT MEASUREMENT

To the extent practical, accident monitoring instrumentation inputs shall be from sensors that directly measure the desired variables.

6.1.4 MINIMIZING MEASUREMENTS

To the extent practical, the same instruments shall be used for accident monitoring as are used for the normal operations of the plant to enable the operator to use, during an accident situation, instruments with which he is most familiar. However, where the required range of accident monitoring instrumentation results in a loss of instrumentation sensitivity in the normal operating range, separate instruments shall be used.

6.1.5 INSTALLATION

Permanently installed instrument equipment is required for those instruments required to function during Phase I. Permanently installed instrumentation systems need not be provided for those functions required only for Phases II and III providing it can be demonstrated that the instrument components can be installed when required, considering the local environment.

6.1.6 INSTRUMENTATION LOCATION AND IDENTIFICATION

Accident monitoring instrumentation shall be located accessible to the operator and be distinguishable from other displays so that in an accident situation, the operator can rapidly identify the accident monitoring instrumentation.

6.1.7 EQUIPMENT REPAIR

The accident monitoring instrumentation shall be designed to facilitate timely recognition, location, replacement, and repair or adjustment of malfunctioning equipment.

6.1.8 TEST AND CALIBRATION

6.1.8.1 Test

Capability shall be provided for testing, with a high degree of confidence, the operational availability of each instrument channel during plant operation. This may be accomplished in various ways, for example:

1. By observing the effect of perturbing the monitored variable.

2. By observing the effect of introducing and varying, as appropriate, a substitute input to the sensor of the same nature as the measured variable.

3. By cross-checking between channels that bear a known relationship to each other.

Where testing during reactor operation is not possible, it must be shown that there is no practical way of implementing such a requirement without adversely affecting plant safety or operability. In addition, it must be shown that the probability of a failure of the component which is not periodically tested is acceptably low and that such testing can be routinely performed when the reactor is shut down.

6.1.8.2 Calibration

Capability shall be provided for calibration of each instrument channel during normal plant operation or during shutdown as determined by the required interval between calibrations. Equipment that does not require periodic calibration is exempt from this requirement.

6.1.9 DIVERSITY

Diversity is preferred in fufilling redundancy requirements.

6.1.10 REDUNDANT READOUT AMBIGUITY

Where a disagreement between redundant displays could lead the operator to defeat or fail to accomplish a required safety function, additional information shall be provided to allow the operator to deduce the actual conditions that are required for him to perform his role. This may be accomplished by providing an independent channel which monitors a different variable bearing a known relationship to the redundant channel or by providing an additional independent channel of instrumentation of the same variable or by providing the capability for the operator to perturb the measured variable and determine by observation of the response which instrumentation display has failed.

6.2 TYPE B INSTRUMENTS

6.2.1 GENERAL REQUIREMENTS

The number of instruments used shall be only that minimum set needed to adequately monitor the accomplishment of the following functions:

a. Reactivity Control
b. Reactor Core Cooling
c. Reactor Coolant System Integrity
d. Containment Integrity
e. Radioactive Effluent Control

Type B instruments provide control room indication beyond that which may be required for any preplanned operator action and as such constitute an extra set of instrumentation which results in an additional layer of protection.

6.2.2 VARIABLES FOR REACTIVITY CONTROL MONITORING

The measured variable shall indicate the accomplishment of control of reactivity in the core. The measured variable should be neutron flux. The range of measurement should extend from one count per second on the source range instrument to the intermediate range instrument value corresponding to 1.% of full reactor power. This range is intended to encompass all neutron flux levels at which the core can be subcritical.

6.2.3 VARIABLES FOR CORE COOLING MONITORING

The measured variables shall indicate the accomplishment of core cooling. For the PWR, the measured variables should be T_H, T_C, pressurizer level, and pressurizer pressure. For the BWR, the measured variable should be reactor vessel water level. Incore thermocouple monitoring should be considered for inclusion as a desireable variable to ascertain cooling.

6.2.4 VARIABLES FOR REACTOR COOLANT SYSTEM INTEGRITY

The measured variable shall indicate the accomplishment of RCS Integrity. The measured variable should be primary system pressure.

6.2.5 VARIABLES FOR CONTAINMENT INTEGRITY

The measured variables shall indicate the accomplishment of containment integrity. The measured variables should be containment hydrogen concentration, containment pressure and containment isolation valve positions.

6.2.6 VARIABLES FOR RADIOACTIVE EFFLUENT CONTROL

The measured variables shall indicate the accomplishment of radioactive effluent control. The measured variables should be noble gas monitoring of the identified plant release points.

6.3 TYPE C INSTRUMENTS

6.3.1 Type C instruments shall meet the following criteria:

6.3.1.1 The number of instruments used shall be only that minimum set needed to adequately monitor the three barriers;

6.3.1.2 Each measurement shall be as direct as possible;

6.3.1.3 Any chosen measurement shall detect a gross breach of one or more barriers (i.e., > 1 percent fuel clad failure, a RCS pressure boundary breach producing a loss of reactor coolant inventory in excess of the normal makeup capability, a containment breach capable of producing radiation releases in excess of 10 CFR 100 at the site boundary using TID-14844 source terms); the ranges established for Type C instruments are not mechanistically related to a postulated accident scenario.

1432 327

6.3.1.4 During the period of need for Type C instruments, no other failures shall be assumed in the analysis beyond the assumed breach of a barrier coincident with loss of off-site power;

6.3.2 Fuel Clad Barrier Monitoring

6.3.2.1 The measured variable shall detect and alarm the breach of the fuel clad barrier (i.e., > 1 percent fuel clad failure);

6.3.2.2 Operator sampling of reactor coolant shall be used as the means to verify the measured variable alarm.

6.3.2.3 The measured variable should be reactor coolant system radiation. The instrument range should be equivalent to the fuel clad gap activity corresponding to 0.5% to 5% failed fuel. A narrow accuracy band for this measured variable is not significant in achieving this function; for example, ±50% to ±100% accuracy of reading should be acceptable. Instrument transient response should be compatible with its recorder.

6.3.3 Reactor Coolant System Pressure Boundary Monitoring

6.3.3.1 The measured variable(s) shall detect and alarm a breach of the reactor coolant system that produces a loss of coolant inventory in excess of normal makeup capability. The spectrum of RCS pressure boundary breaches extends up to and includes the largest double-ended pipe break.

6.3.3.2 The means used to detect RCS pressure boundary breach should include one RCS pressure boundary variable and one containment variable over the full spectrum of break sizes.

6.3.3.3 The measured PWR variables should be RCS pressure and containment pressure. The instrument range should be the design pressure plus a specified margin (≤ 10%). Normal instrument accuracy is acceptable for these monitors. Instrument transient response should be compatible with its recorder.

6.3.3.4 The measured BWR variables should be drywell pressure and containment sump level. The instrument range should be design values plus a specified margin ($\leq$ 10%). Normal instrument accuracy is acceptable for these monitors. Instrument transient response should be compatible with its recorder.

6.3.4 Containment Pressure Boundary Monitoring

6.3.4.1 The measured variable(s) shall detect and alarm a breach of the containment pressure boundary that is capable of producing radiation releases in excess of 10 CFR 100 at the site boundary using TID-14844 source terms.

6.3.4.2 The means used to detect containment pressure boundary breach should include containment pressure (BWR and PWR), environs radiation monitoring for gross gamma (PWR), and secondary containment air space radiation monitoring for gross gamma (BWR).

6.3.4.3 The instrument range for containment pressure should be design pressure plus a specified margin ($\leq$ 10%). Normal instrument accuracy is acceptable for this monitor. Instrument transient response should be compatible with its recorder.

6.3.4.4 The instrument range for environs radiation monitoring should be 10^{-3} to 10^{2} R/hr. The instrument range for secondary containment air space radiation monitoring should correspond to the 10 CFR 100 value for off-site doses. Instrument accuracy should be $\pm$ 1/2 decade (100 Kev-3 Mev). Instrument transient response should be compatible with its recorder.

6.3.5 Potential Breach of the Final Fission Product Barrier

6.3.5.1 The measured variables should be containment pressure, containment hydrogen concentration, and RCS pressure for indicating the potential for causing a breach of the final fission product barrier (i.e., containment).

6.3.5.2 An arbitrary range of 3 times design pressure for concrete and 4 times design pressure for steel should be used for containment pressure. Instrument accuracy should be ± 10% of span. Instrument transient response should be compatible with its recorder.

6.3.5.3 An arbitrary range of 0-10 volume percent hydrogen should be used for containment hydrogen concentration. Instrument accuracy should be ± 10% of span. Instrument transient response should be compatiable with its recorder.

6.3.5.4 An arbitrary range of 1.5 times design pressure should be used for RCS pressure. Instrument accuracy should be ± 10% of span. Instrument transient response should be compatible with its recorder.

6.3.6 INSTRUMENT QUALIFICATION

6.3.6.1 Type C instruments shall be qualified in the same manner as Type A instruments except:

6.3.6.1.1 For purposes of equipment qualification, the assumed maximum value of the monitored parameter shall be the value equal to the maximum range for the instrument. The monitored parameter shall be assumed to approach this peak by extrapolating the most severe initial ramp associated with the Design Basis Accidents. The decay for this parameter shall be considered proportional to the decay for this parameter associated with the Design Basis Accidents. No additional qualification margin needs to be added to the extended range parameter. See figure 6.3-1. All environmental envelopes except that pertaining to the parameter measured by the instrument shall be those associated with the Design Basis Accidents.

6.4 SPECIFIC DESIGN CRITERIA

Design Criteria specific to particular accident phases and variable types are presented in Table 6.4-1.

1432 330

TABLE 6.4.1

DESIGN CRITERIA

CRITERION	PHASE I VARIABLE TYPE A	PHASE I VARIABLE TYPE B	PHASE I VARIABLE TYPE C	PHASE II VARIABLE TYPE A	PHASE II VARIABLE TYPE B	PHASE II VARIABLE TYPE C
1. Qualify seismically to IEEE 344-75 (operate after SSE)	Yes	Yes	No	Yes	No	No
2. Meet single failure per IEEE 379-77	Yes	Yes	No	Yes	Yes	No
3. Qualify environmentally to IEEE 323-74	Yes	Yes	Yes(1)	Yes	Yes	Yes(1)
4. Consider loss of off-site power	Yes	Yes	Yes	Yes	No	No
5. Power source	Emergency	Emerg.	Emerg.	Emerg.	Normal(6)	Normal(6)
6. Out of service interval - prior to accident	(2)	(2)	$\leq$72 Hr(3)	(2)	(2)	$\leq$72 Hrs(3)
7. Out of service interval - during accident	None	None	$\leq$2 Hr	(2)	(2)	$\leq$2 Hrs

TABLE 6.4-1 (Continued)

DESIGN CRITERIA

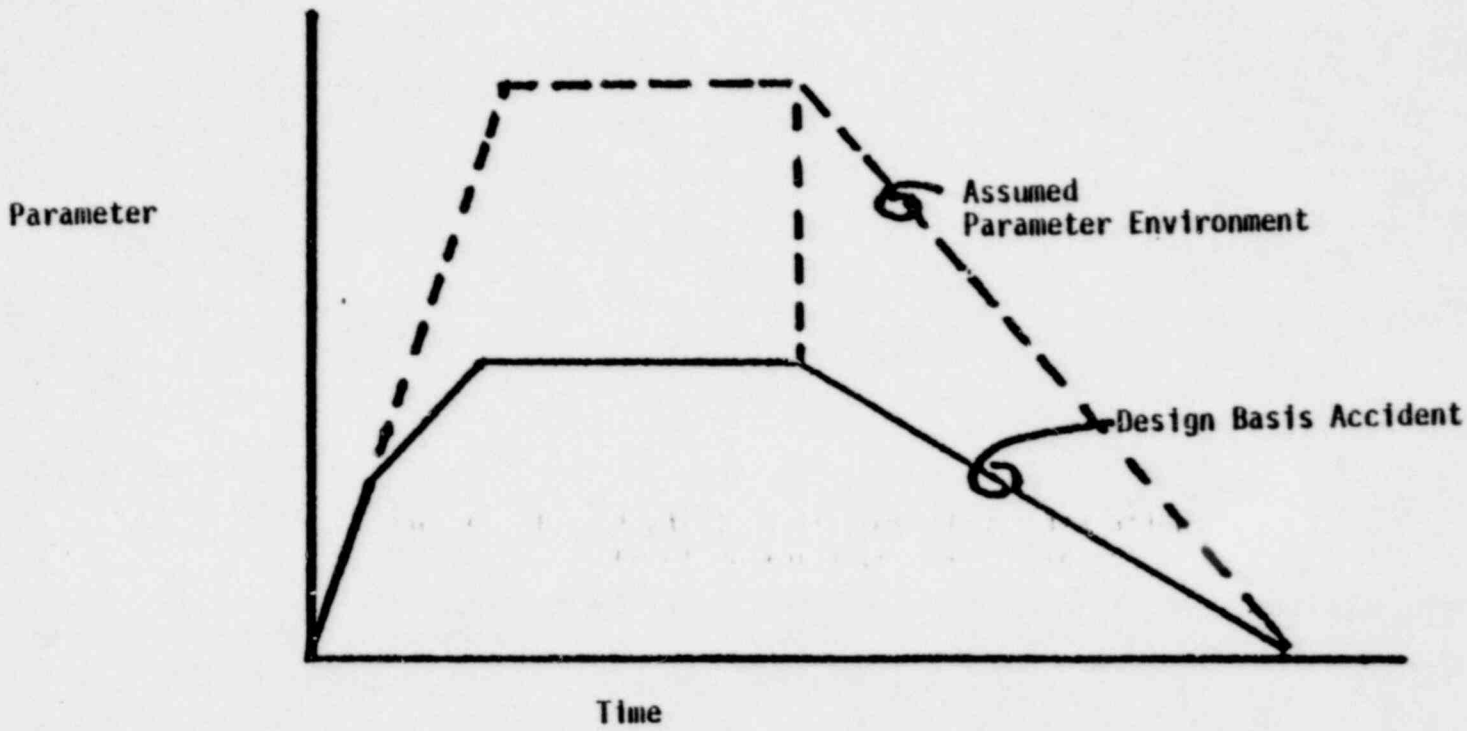
CRITERION	PHASE I VARIABLE TYPE A	PHASE I VARIABLE TYPE B	PHASE I VARIABLE TYPE C	PHASE II VARIABLE TYPE A	PHASE II VARIABLE TYPE B	PHASE II VARIABLE TYPE C
8. Portable instrumentation	No	No	No[7]	Yes	Yes	Yes
9. Level of quality assurance	ANSI N45.2	ANSI N45.2	ANSI N45.2	ANSI N45.2	ANSI N45.2	ANSI N45.2
10. Display type[4]	Continuous	Continuous	Continuous	Continuous	Continuous	On demand
11. Display method	Recording[5]	Recording	Indicator	Recording[5]	Indicator	Indicator
12. Identification as accident monitoring type	Yes	Yes	Yes	Yes	Yes	Yes
13. Periodic Test per IEEE-338-1977	Yes	Yes	Yes	Yes	Yes	Yes

NOTES: (1) See Paragraph 6.3.6 of this Standard.
(2) IEEE 279-1971 Paragraph 4.11 Exemption

NOTES TO TABLE 6.4-1 (Continued)

(3) Based on normal tech spec requirements on out-of-service safety systems.
(4) Continuous indication or recording displays a given variable at all times; intermittent indication or recording displays a given variable periodically; on demand indication or recording displays a given variable only when requested.
(5) Where trend or transient information is essential to planned operator actions.
(6) May be manually connected to emergency buss
(7) Radiation monitoring outside containment may be portable.

Figure 6.3-1. Typical Environmental Qualification Envelope for Type C Instruments



October 15, 1979

Value/Impact Statement of Proposed Revision 2 to Regulatory Guide 1.97, "Instrumentation In Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident"

I. The Proposed Action

A. Description

The applicant (licensee) of a nuclear power plant is required by the Commission's regulations to provide instrumentation to (1) monitor variables and systems for accident conditions as appropriate to ensure adequate safety, and (2) monitor the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluid, effluent discharge paths, and the plant environs for radioactivity that may be released from postulated accidents. This revision to Regulatory Guide 1.97 proposes to improve the guidance for plant and environs monitoring during and following an accident.

B. Need

Regulatory Guide 1.97 was issued as an effective guide in August 1977. At the time the guide was issued it was recognized that more specific guidance than that contained in the guide would be required. However, the difficulty in developing the guide to the point where it could be initially issued was evidence that experience in using the guide as it then existed was essential before further development of the guide would be meaningful.

At the time Regulatory Guide 1.97 was initially issued as an effective guide (August 1977), the staff initiated Task Action Plan A-34, "Instruments for Monitoring Radiation and Process Variable During an Accident."

The purpose of the task action plan was to develop guidance for applicants, licensees and staff reviewers concerning implementation of Regulatory Guide 1.97. Such effort would provide a basis for revising the guide.

At the time the staff was ready to issue the results of Task Action Plan A-34 effort, the accident the TMI-2 occurred. Subsequently, the TMI-2 Lessons Learned Task Force has issued its "Status Report and Short-Term Recommendation," NUREG-0578. This report along with the draft Task Action Plan A-34 report, Draft 1 of Regulatory Guide 1.97, dated April 12, 1974, and Standard ANS-4.5, Draft 3, dated September 1979, provides ample basis for revising Regulatory Guide 1.97.

C. Value/Impact of the Proposed Action

1. NRC Operations

Since a list of selected variables to be provided with instrumentation to be monitored by the plant operator during and following an accident has not been explicitly agreed to in the past, the propcsed action should result in more effective effort by the staff in reviewing applications for construction permits and operating licenses. The proposed action will establish an NRC position by taking advantage of previous staff effort (1) in completion of a generic activity (A-34), (2) in evaluating the lessons learned from the TMI-2 event (NUREG-0578), and (3) in conjunction with effort in developing a draft national standard (ANS-45). For future plants, the staff review will be simplified with guidance contained in the endorsed industry standard and the regulatory guide which includes a list of variables for accident

monitoring. Consequently, there will be no significant impact on the staff. There will, however, be effort required to review each operating plant and plant under review to determine the extent of backfitting which will be required. This will be done on a case-by-case basis.

2. Other Government Agencies

Not applicable, unless the government agency is an applicant.

3. Industry

The proposed action establishes a more clearly defined NRC position with regards to instrumentation to assess plant and environs conditions during and following an accident and therefore, reduces uncertainty as to what the staff considers acceptable in the area of accident monitoring. Most of the impact on industry will be in the area of instrumentation to indicate the potential breach and the actual breach of the barriers to radioactivity release, i.e., fuel cladding, reactor coolant pressure boundary and containment. There will be some impact due to a heretofore unspecified variable to be monitored (water level in reactor) which have been identified during the evaluation of TMI-2 experience and which will require development.

A cost estimate of the impact on industry for future plants has not yet been made but will be developed by the staff, with industry imput, during the comment period. The staff intends to meet with the various owners' groups and determine, on a case-by-case basis, the cost impact on each individual operating plant and plant under review as it determines the extent of backfitting in each case.

4. Public

The proposed action will improve public safety by assuring that the plant operator will have timely information to take any necessary action to protect the public.

No impact on the public can be foreseen.

D. Decision on Proposed Action

As previously stated, more definitive guidance on instrumentation to assess plant and environs conditions during and following an accident should be given.

II. Technical Approach

This section is not applicable to this value/impact statement since the proposed action is a revision of an existing regulatory guide and there are no alternatives to providing the plant operator with the required information.

III. Procedural Approach

Previously discussed.

IV. Statutory Considerations

A. NRC Authority

This guide would fall under the authority and safety requirements of the Atomic Energy Act. In particular Criterion 13, Criterion 19 and Criterion 64 of Appendix A to 10 CFR Part 50 requires, in part, that instrumentation be provided to monitor variables, systems and plant environs to ensure adequate safety.

1432 338

B. Need for NEPA Assessment

The proposed action is not a major action as defined in 10 CFR Part 51.5(a)(10) and does not require an environmental impact statement.

V. Relationship to Other Existing or Proposed Regulations or Policies

No conflicts or overlaps with requirements promulgated by other agencies are foreseen. This guide does include the variables to be monitored onsite by the plant operator in order to provide necessary information for emergency planning. However, emergency planning and its relationship to other agencies is provided by other means. Implementation of the proposed action is discussed in Section D of the proposed guide.

VI. Summary and Conclusions

The propose revision to Regulatory Guide 1.97, "Instrumentation For Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident" should be issued.

1432 339