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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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579TH MEETING

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

OPEN SESSION

+ + + + +

FRIDAY

JANUARY 14, 2011

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ROCKVILLE, MARYLAND

+ + + + +

The Advisory Committee met at the Nuclear  
Regulatory Commission, Two White Flint North, Room  
T2B1, 11545 Rockville Pike, at 8:30 a.m., Said Abdel-  
Khalik, Chairman, presiding.

COMMITTEE MEMBERS:

SAID ABDEL-KHALIK, Chairman

J. SAM ARMIJO, Vice Chairman

SANJOY BANERJEE, Member

DENNIS C. BLEY, Member

MICHAEL L. CORRADINI, Member

DANA A. POWERS, Member

HAROLD B. RAY, Member

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1 COMMITTEE MEMBERS:

2 JOY REMPE, Member

3 MICHAEL T. RYAN, Member

4 WILLIAM J. SHACK, Member

5 JOHN D. SIEBER, Member

6  
7 NRC STAFF PRESENT:

8 HOLLY CRUZ, NRR

9 TAI HUANG, NRR/ADES/DSS

10 BOB KAHLER, NSIR

11 JOSE MARCH-LEUBA, ORNL

12 CHRISTOPHER MILLER, NSIR

13 BETH REED, NRR/DPR

14 RANDY SULLIVAN, NSIR

15 DON TAILLEART, NSIR

16 ANTHONY ULSES, NRR

17 ZEYNA ABDULLAHI, Designated Federal Official

18 GIRIJA SHUKLA, Designated Federal Official

19  
20 ALSO PRESENT:

21 YOUSEF FARAWILA, AREVA

22 JOE JONES, Sandia National Laboratories

23 ROBERT LEYSE, Petitioner\*

24 DANIEL TINKLER, AREVA

25 \*Present via telephone

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## P R O C E E D I N G S

(8:29 a.m.)

CHAIRMAN ABDEL-KHALIK: The meeting will now come to order. This is the second day of the 579<sup>th</sup> meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting, the Committee will consider the following. One, Draft Final Rule and Regulatory Guide regarding enhancements to Emergency Preparedness Regulations. Two, Staff Assessment of the RAMONA5-FA Code. Three, future ACRS activities and report of the Planning and Procedures Subcommittee. Four, reconciliation of ACRS comments and recommendations. And, five, preparation of ACRS reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. Mr. Girija Shukla is the Designated Federal Official for the initial portion of the meeting.

Portions of the session dealing with the Staff Assessment of the RAMONA5-FA Code may be closed to protect information designated as proprietary by AREVA.

We have received a request from Mr. Bob

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1     Leyse for time to make oral statements regarding the  
2     staff assessment of the RAMONA5-FA Code. There will  
3     be a phone bridge line. To preclude interruption of  
4     the meeting, the phone will be placed in a listen-only  
5     mode during the presentations and Committee  
6     discussion. At the appropriate time, the phone line  
7     will be opened to allow members of the public to  
8     provide their comments to the Committee.

9             A transcript of portions of the meeting is  
10    being kept, and it is requested that the speakers use  
11    one of the microphones, identify themselves, and speak  
12    with sufficient clarity and volume so that they can be  
13    readily heard.

14            We will now proceed to the first item on  
15    the agenda, Draft Final Rule and Regulatory Guidance  
16    regarding enhancement to Emergency Preparedness  
17    Regulations, and Mr. Sieber will lead us through that  
18    discussion. Jack.

19            MEMBER SIEBER: Okay. Thank you, Mr.  
20    Chairman. It is my privilege and pleasure today to  
21    introduce to the ACRS members, the staff and the  
22    subject of Emergency Planning, which is an area in  
23    which I have always had a great interest and  
24    participation.

25            We had a Subcommittee meeting about three

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1 weeks ago, where we went through all of the changes to  
2 the rule, and the guidance documents associated  
3 therewith in great detail, and we had the opportunity  
4 to ask a lot of questions, and got really good  
5 answers.

6 The Emergency Planning Rule change that we  
7 are now considering is partially an outgrowth of the  
8 September 11<sup>th</sup>, 2001 terrorist incident, where we are  
9 now integrating enhanced anti-terrorism security  
10 measures into the Emergency Planning Rule.

11 In addition to that, about half of the  
12 work is to take advantage of lessons learned from the  
13 last revision of the rule, which was many years ago  
14 following TMI. And these lessons were actually  
15 learned through drills and exercises, and also at  
16 minor plant events, and observations as we went  
17 through that 25-year period.

18 So, the rule change, as it is now,  
19 reflects about 50 percent emphasis on the security  
20 upgrades that occurred after 9/11, and the remaining  
21 portion of the rule changes relate to incorporating  
22 lessons learned from operating experience through the  
23 time the rule has been in effect.

24 What I'd like to do now is introduce from  
25 the Staff, Chris Miller, who is Deputy Director of

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1 Emergency Planning for the Office of Nuclear Security  
2 and Incident Response. Chris.

3 MR. MILLER: Thank you, Mr. Sieber, and  
4 Mr. Chairman, and Members of the Committee. I  
5 appreciate the opportunity to come and talk to you  
6 about the Emergency Preparedness Rulemaking as a  
7 follow-up to our discussion, and, also, as a follow-on  
8 to the discussion that we had with the Subcommittee  
9 back in November.

10 It's important to note that because of the  
11 anticipated stakeholder interest in this rulemaking,  
12 we actually took some additional steps, as we went  
13 through this rulemaking process. And one of the most  
14 notable was an expanded rulemaking process that used  
15 three stages; instead of just proposed and final  
16 stages for the rulemaking, we actually published it an  
17 additional time earlier than that in a draft  
18 preliminary stage. We wanted to have lots of  
19 opportunities to share this with our stakeholders, and  
20 to get stakeholder feedback.

21 After the proposed rule and the guidance  
22 were issued for public comment back in 2009, we had a  
23 75-day comment period, and we actually extended that  
24 out to 150 days in order to give the stakeholders,  
25 based on their request, more time to dig into the

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1 details, because, as we've mentioned, it is quite a  
2 complicated and large volume of changes in the  
3 documents.

4 As a result, we also conducted 12 public  
5 meetings, and an additional Commission briefing, in  
6 which outside stakeholders were brought in to the  
7 process, and helped inform the process. That's all so  
8 that we could get informed stakeholder comments, and  
9 make sure that the stakeholders understood it before  
10 they gave us their comments.

11 We also held an additional public meeting  
12 on November 15<sup>th</sup> of 2010 to obtain further feedback on  
13 the proposed implementation dates of the rule. As  
14 you'll hear, there's some staged implementation  
15 anticipated for this rule, and we'll discuss the  
16 expanded process in more detail in just a few moments.

17 The other thing that I should point out is  
18 that we had very close alignment with Federal  
19 Emergency Management Agency on this rulemaking effort.

20 As you can imagine for emergency preparedness,  
21 there's significant offsite stakeholder interest and  
22 participation in this. FEMA has updated its offsite  
23 Preparedness Program Guidance documents in conjunction  
24 with our proposed rulemaking changes and guidance.

25 These documents were issued for public

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1 comment at the same time that our proposed rulemaking  
2 for the NRC was issued, and FEMA intends to issue the  
3 final documents along with the final rule. FEMA and  
4 the NRC Staff also formed a team to jointly resolve  
5 the public comments that would affect both onsite and  
6 offsite emergency preparedness.

7 MEMBER BLEY: Chris, were the public  
8 meetings joint meetings with FEMA?

9 MR. MILLER: Yes, they were. We make it a  
10 point to do that, because you're going to get  
11 questions for both onsite and offsite, so that's been  
12 very effective.

13 MEMBER SIEBER: I would point out that  
14 FEMA also participated in our Subcommittee meeting,  
15 and did so in fine fashion. And I think the degree of  
16 cooperation between the agencies, both agencies and  
17 state and local officials has been excellent.

18 MR. MILLER: Yes. And, in fact, with that  
19 in mind, I just would like to take the opportunity to  
20 acknowledge the efforts of the leadership team at FEMA  
21 for helping to insure our agencies remained aligned  
22 throughout the rulemaking and guidance development  
23 process, and for insuring that all the stakeholders,  
24 both onsite and offsite, are fully engaged in the  
25 process. We appreciate the FEMA efforts.

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1           We're going to discuss several topics  
2 regarding the Emergency Preparedness Rulemaking  
3 Initiative in the presentations. The staff will start  
4 off with a brief history of the rulemaking, and what  
5 led us up to that. And then more detailed information  
6 about -- that we have taken to increase the openness,  
7 and to involve our stakeholders. And I gave you a  
8 little touch of that, but you'll get a little bit more  
9 of that flavor from our staff's presentations.

10           Each one of the rulemaking topics, the 11  
11 major topics will be covered in some detail, along  
12 with some additional requests that we put in the  
13 proposed rulemaking. There were requests from  
14 stakeholders in several areas that we asked  
15 stakeholders to consider and make comments on, and how  
16 these requests were being dispositioned.

17           The staff will discuss each of the  
18 guidance documents that were developed and issued as  
19 drafts during the public comment period back in 2009,  
20 so we had the guidance out with the proposed rule.  
21 And then significant comments, and the resolution will  
22 also be covered today. And we have a short time to do  
23 that, so it's going to be a high level. But, of  
24 course, we'll take your questions as they come up on  
25 those areas.

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1 I want to introduce the members of my  
2 staff who will be making presentations that I just  
3 mentioned; Bob Kahler to my immediate left, is Chief  
4 of the Inspection and Regulatory Improvements Branch;  
5 Don Tailleart is the Regulatory Improvements Team  
6 Leader, and he's to Bob's left. Other members of my  
7 staff who are in attendance today have also been an  
8 integral part of the rulemaking effort, and I want to  
9 acknowledge their contributions, Mr. Randy Sullivan,  
10 Steve LaVie, Jeff Loughlin, and Milt Murray. We also  
11 are happy to have Joe Jones from Sandia, who's  
12 present, and he's going to help with any evacuation  
13 time estimate questions we may have.

14 There's also been a lot of interaction  
15 with the other offices at the NRC, and members who  
16 have served on Emergency Preparedness Rulemaking  
17 Working Group over the past several years, and these  
18 include representatives from Nuclear Reactor  
19 Regulation, New Reactors, General Counsel, and  
20 Administration.

21 So, with that brief introduction of the  
22 topics you're going to hear, I want to turn the  
23 meeting over to Bob Kahler.

24 MEMBER SIEBER: Let me interrupt just for  
25 a second. Even though it's been 10 years since the

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1 9/11 attack on the World Trade Center and the  
2 Pentagon, we do not want to give the impression that  
3 nothing has been done since then. You know the  
4 Commission acted promptly right after those events  
5 issuing orders, and bulletins, so all of the  
6 countermeasures and activities are in place. This  
7 step is to codify that in a rule with appropriate  
8 guidance, so this is really the end of the process,  
9 not the beginning of the process.

10 MR. KAHLER: Good morning, and thank you  
11 for having us here this morning with you. As Chris  
12 said, I'm Bob Kahler, and I'm the Chief of the  
13 Inspection and Regulatory Improvements Branch within  
14 the Office of Nuclear Security and Incident Response.

15 I'm going to provide a background of the  
16 rulemaking process that we used, and then a summary of  
17 the EP rulemaking topics, themselves, so, I'd like to  
18 begin with talking about how we got here today.

19 Well, following the accident at Three Mile  
20 Island, TMI Unit 2 in 1979, the U.S. Nuclear  
21 Regulatory Commission revised its regulations to  
22 incorporate additional Emergency Preparedness  
23 requirements. At that time, the Agency established 16  
24 planning standards in 10 CFR 50.47(b). These planning  
25 standards were also incorporated into FEMA's

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1 regulations in 44 CFR 350 that were appropriate for  
2 offsite response organizations.

3 For NRC licensees and applicants,  
4 additional requirements in Appendix E to 10 CFR Part  
5 50 supplement these planning standards. This is the  
6 first major EP rulemaking activity since that time  
7 period.

8 Following the events, as was stated, of  
9 September 11<sup>th</sup>, 2011, the NRC staff did review the  
10 Emergency Planning Basis for nuclear power plants  
11 considering the impact of hostile action contingencies  
12 unanticipated at the time that basis was initially  
13 established. The staff has concluded the Emergency  
14 Planning Basis does remain valid.

15 Vulnerability studies revealed that the  
16 timing and magnitude of releases related to a hostile  
17 action would be no more severe than the other accident  
18 sequences considered in that Emergency Planning Basis.  
19 However, the staff does recognize that a hostile  
20 action event could present unique challenges to EP  
21 programs and response since they differ from the  
22 accident initiated events for which licensees and  
23 offsite response organizations typically plan for,  
24 train for, and exercise.

25 Since 2001, the NRC staff has observed

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1 licensee performance during numerous security event-  
2 based EP drills, and security force-on-force, FOF,  
3 exercises. The staff has also discussed security-based  
4 EP issues with various stakeholders, including  
5 licensees, federal, state, and local governmental  
6 officials. The staff did issue a bulletin in 2005,  
7 Bulletin 2005-02, Emergency Preparedness Response  
8 Actions for Security-Based Events to obtain  
9 information from licensees on the type of EP program  
10 enhancements they had implemented to address potential  
11 hostile actions, and to provide examples of  
12 enhancements for licensees to consider in their  
13 response to security-based events.

14 Nuclear power reactor licensees responded  
15 that they had implemented, or planned to implement and  
16 committed to the types of enhancements that were  
17 outlined in that bulletin, so there were some actions  
18 taken immediately following September 11<sup>th</sup>.

19 The Nuclear Energy Institute, NEI, also  
20 issued a White Paper entitled, "Enhancement to  
21 Emergency Preparedness Programs for Hostile Action,"  
22 in 2005. NRC endorsed this guidance in a Regulatory  
23 Issue Summary as an acceptable implementation  
24 methodology for the EP program enhancements that I  
25 discussed in that bulletin.

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1           Additionally, the staff performed a top to  
2 bottom review of EP program regulations in 2005. NRC  
3 and FEMA held joint public meetings during the review  
4 process to obtain stakeholder feedback, and the review  
5 results were provided to the Commission in a SECY  
6 letter in 2006, SECY 06-0200, results of review of EP  
7 regulations and guidance.

8           The staff discussed the activities it had  
9 conducted to complete their comprehensive review, and  
10 recommended pursuing a rulemaking for EP program  
11 enhancements for both security event-related, and non-  
12 security event-related topics. The comprehensive  
13 review of the EP program identified several areas for  
14 potential EP program improvements, and increased  
15 clarity. And as Mr. Sieber pointed out before, based  
16 on the experience gained, recently technological  
17 advances, and lessons learned from actual events,  
18 drills, and exercises since the TMI accident in 1979.

19           In May of 2009, the proposed EP rulemaking  
20 was published in the Federal Register for formal  
21 public comment. We felt it was critical to inform our  
22 stakeholders early in that 150-day comment period  
23 about the details of the rule in guidance to aid them  
24 in developing more informed comments. And as Chris  
25 has pointed out earlier, from June to September of

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1 2009, we held 12 joint NRC and FEMA public meetings  
2 across the country.

3 I'd like to emphasize that the NRC staff  
4 made use of both telephone calling capabilities, and  
5 web conferencing over the internet to allow effective  
6 remote interactive stakeholder participation in each  
7 of these public meetings. Our goals were to maximize  
8 attendance, and accessibility, and provide for a high  
9 quality exchange of information, while being sensitive  
10 to stakeholder needs, especially those of the offsite  
11 organizations, and their travel budget constraints.

12 In December of 2009, the Commission was  
13 formally briefed on the status of this EP rulemaking  
14 initiative. NRC and FEMA each provided an overview of  
15 the comments they had received. And in a Staff  
16 Requirements Memorandum issued following the briefing,  
17 the Commission directed the NRC staff to make the  
18 draft final rule language and guidance documents  
19 publicly available in conjunction with this ACRS  
20 review process. As such, in October of 2010 the staff  
21 provided the rulemaking documents to you, the ACRS,  
22 and we also posted them publicly on  
23 [www.regulations.gov](http://www.regulations.gov).

24 The NRC staff was also directed by the  
25 Commission at that time to assess the cumulative

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1 effect of regulation regarding this rulemaking, and  
2 other NRC regulatory changes on licensees. As part of  
3 that effort, as Chris had mentioned, a public meeting  
4 was held on November 15<sup>th</sup>, 2010 to obtain additional  
5 input from stakeholders on proposed implementation  
6 dates for this rulemaking in light of additional  
7 factors that we asked them to consider that may impact  
8 the ability of the affected organizations to address  
9 proposed regulatory and guidance changes.

10 NRC and FEMA staff received insightful  
11 feedback from many of the approximately 75 nuclear  
12 power industry representatives, and state and local  
13 officials that attended this meeting. The staff  
14 continues to evaluate to determine if adjustments to  
15 any implementation dates are warranted before the  
16 draft final rule is provided to the Commission.

17 This table that's up on the presentation  
18 now identifies 12 topics that are addressed in the EP  
19 rule, and indicates their associated guidance  
20 documents. The first six of these topics are related  
21 to security issues, while topics seven through eleven  
22 are a result of the comprehensive review. The 12<sup>th</sup>  
23 topic is associated with a removal of completed one-  
24 time requirements, clean-up of administrative  
25 requirements.

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1 My presentation will provide an overview  
2 of each of these rulemaking topics. Before I begin  
3 the overview, I would like to address an area of  
4 discussion that occurred during the ACRS Subcommittee  
5 meeting on November 1<sup>st</sup>, that could apply to several  
6 of the rulemaking topics. The discussion involved the  
7 inclusion of insights from the State-of-the-Art  
8 Reactor Consequence Analysis, SOARCA, into the final  
9 rule. The EP rule predates SOARCA, and no SOARCA  
10 input was used in development of this rule. The  
11 management of the Office of Nuclear Regulatory  
12 Research has directed us that there is to be no use  
13 made of SOARCA preliminary results, and that is as per  
14 Commission direction. The draft SOARCA document will  
15 go out for public comment, and potentially be revised.  
16 Additionally, an uncertainty analysis is to be  
17 performed to more fully accept the validity of those  
18 results.

19 With that, I would like to start my  
20 summary of the rulemaking topics. First rulemaking  
21 topic is on on-shift ERO responsibilities. There will  
22 be a new Section 4.8.9 to Appendix E of 10 CFR Part 50  
23 to address concerns regarding the assignment  
24 responsibilities to on-shift Emergency Response  
25 Organization, ERO personnel as I'll refer to them from

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1 now on, that potentially would overburden them, and  
2 prevent the timely performance of the Emergency Plan  
3 functions.

4 Currently, licensees must have enough on-  
5 shift staff to perform specified tasks in various  
6 functional areas of emergency response. All shifts  
7 must have the capability to perform these functions  
8 24-hours a day, 7 days a week, to minimize the impact  
9 of radiological emergencies, and to provide for public  
10 health and safety.

11 Existing NRC regulations state that on-  
12 shift staff leveling shall be adequate, but they don't  
13 give a clear definition of that term "adequate." This  
14 provides some leeway in how licensees assign Emergency  
15 Plan implementation duties to on-shift personnel. The  
16 final rule will better insure sufficient on-shift  
17 staff in the post-9/11 threat environment by requiring  
18 the performance of an analysis of the ERO members'  
19 Emergency Plan functions.

20 The Interim Staff Guidance Document  
21 identifies a need for the licensee to define the  
22 spectrum of accidents to consider, perform an analysis  
23 of emergency response functions, such as performing a  
24 job task analysis, or a time motion study, consider  
25 the functional areas identified currently in NUREG-

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1 0654, FEMA Rep 1, in a table in that document, Table  
2 B.1 when conducting the analysis, and compare current  
3 staffing levels with the results of that analysis. The  
4 guidance also states that the results of the analysis  
5 shall be available for inspection.

6           Going on to Rulemaking Topic 2, "Emergency  
7 Action Levels for Hostile Action." Previously,  
8 Emergency Action Levels, EALs, for security-based  
9 events did not focus on the hostile action events in  
10 the post-9/11 threat environment. A change to NRC  
11 regulations in 10 CFR Part 50, Appendix E, would  
12 require licensees to incorporate hostile action EALs  
13 into their emergency classification scheme.

14           As I stated, the NRC staff previously  
15 issued Bulletin 2005-02 for implementation of the  
16 Emergency Action Levels to address hostile action, and  
17 other security-based events. And, at that time, all  
18 licensees committed to incorporating the new EALs in  
19 their emergency plans, and they currently have them in  
20 their Emergency Action Level schemes today.

21           Current guidance for incorporating hostile  
22 action-based Emergency Action Levels is also contained  
23 in an NRC-endorsed NEI document, NEI 99-01, Revision  
24 5.

25           CHAIRMAN ABDEL-KHALIK: If you could go

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1 back to the previous slide, could you just explain to  
2 me why minimum staffing levels be site-dependent?

3 MR. KAHLER: That would be based upon  
4 numerous factors, such as the constitution of the  
5 personnel at the site, the training of those personnel  
6 in various areas. Some sites train staff to be both  
7 able to perform operational functions, and  
8 radiological response functions, other sites do not do  
9 that training, so they wouldn't be able to assign that  
10 to maybe one individual, they would have to assign it  
11 to two different individuals; hence, they would need  
12 to have two individuals on shift rather than just one,  
13 those kind of things.

14 Also, multiple unit sites have a slight  
15 advantage of being able to draw on non-affected sites  
16 for on-shift staff, and may not to have each  
17 individual unit have as many on-shift staff assigned  
18 to the ERO, because they can draw from that additional  
19 pool of personnel.

20 CHAIRMAN ABDEL-KHALIK: Okay. Thank you.

21 MEMBER SIEBER: Maybe I could enhance that  
22 a little bit from some practical experience. When an  
23 emergency occurs at a plant, the operators have to  
24 take care of the plant. On the other hand, there is a  
25 lot of notifications that have to occur, and somebody

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1 has to do it, and it can't be an operator, because  
2 they're busy with the plant, can't be operational  
3 supervision, because they're supposed to be paying  
4 attention to the event. And there is a Shift  
5 Technical Advisor, but he has defined duties in  
6 emergency situations, also, so that, typically,  
7 requires an additional person, which was not  
8 contemplated when the technical specifications were  
9 written.

10 Same thing occurs -- I think that's where  
11 this rule is directed, but when you look at overall  
12 shift staffing around the clock, you find that you  
13 need radiological technicians to be able to help  
14 assess and analyze actions, as far as releases, source  
15 term, and so forth are concerned, which, typically,  
16 will require round-the-clock coverage in that  
17 particular area. And when the concept of plant  
18 organization first came out in the 1970s, all of these  
19 features were not considered. Most of them were  
20 accommodated after TMI in the development of the early  
21 emergency plans, but it needs to be codified now, and  
22 that's why they're dealing with it now.

23 CHAIRMAN ABDEL-KHALIK: You know, my  
24 question pertained to the site dependence of that  
25 staffing requirement, but I appreciate the

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1 explanation.

2 MR. KAHLER: Okay. Additionally, the staff  
3 is proposing changes to rule language in Appendix E to  
4 correctly identify the regulatory process to use if a  
5 licensee desires to change its entire Emergency Action  
6 Level scheme, which is the license amendment process.

7 The changes of draft final rule language are shown in  
8 red text on this slide.

9 The proposed rule, and previous draft of  
10 the final rule would have required licensees to use  
11 Section 50.4, Reporting Requirement, to obtain prior  
12 NRC approval. However, in the 2005 final rule revising  
13 Section 4.(b)(2), the Commission stated that "a  
14 licensee's EAL scheme change requires prior NRC  
15 approval," which means that the licensee does not have  
16 the authority to change a new EAL scheme unless the  
17 NRC approves the change in advance. The NRC approval  
18 process of that EAL scheme change requires a license  
19 amendment; hence, the use of Section 50.90.

20 MEMBER ARMIJO: Does that make the change  
21 process slower?

22 MR. KAHLER: Pardon?

23 MEMBER ARMIJO: Does that make the change  
24 process slower than the previous approach?

25 MR. KAHLER: Yes, it definitely has that

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1 potential. However, it will permit public involvement  
2 in that change process.

3 MEMBER ARMIJO: But in this case, the  
4 licensee would be changing to a scheme that the NRC  
5 has -- most current NRC Action Level scheme, which  
6 would be, I would think, desirable.

7 MR. KAHLER: I would say yes, it would be  
8 a desirable move.

9 MEMBER ARMIJO: But they can't do it in a  
10 simpler, more --

11 MR. KAHLER: No, they can't, because of  
12 the way the approval process is defined, in that if  
13 the NRC is to grant approval, which the Commission  
14 says it wants to maintain that authority of granting  
15 approval of EAL scheme changes. We're not talking  
16 about changes to EALs within the scheme, we're talking  
17 about a wholesale change of the scheme itself, which  
18 is something that was part of its initial license. We  
19 approve the scheme to be used. If they want to then --  
20 and that was part of that initial license, was the  
21 approval process. If we want -- if they want then to  
22 change that scheme, they have to come back to us for  
23 approval, and that process, once it's dictated to be  
24 used, is the license amendment process.

25 MEMBER ARMIJO: Okay. Thank you.

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1 MR. KAHLER: Okay. Next slide, "Emergency  
2 Response Organization Augmentation and Alternative  
3 Facilities." Appendix E to 10 CFR Part 50 would be  
4 amended to address concerns regarding emergency  
5 response organization augmentation during hostile  
6 action. During hostile action, emergency responders  
7 will likely not have access to the site. The final  
8 rule would require licensees to identify an  
9 alternative facility, or facilities, for staging  
10 augmentation staff when onsite emergency response  
11 facilities are not accessible. The objective is to  
12 minimize delays in overall site response, and allow  
13 for a swift, coordinated augmented response when the  
14 site is eventually secured.

15 As stated in the final rule, "The  
16 alternative facility or facilities shall be accessible  
17 during a hostile action, and shall have the following  
18 collective characteristics; capability for  
19 communication with the Emergency Operations Facility,  
20 the EOF, the control room, and plant security  
21 personnel; capability to perform offsite  
22 notifications, and capability for engineering  
23 assessment activities, including damage control team  
24 planning, and implementation, and preparation," excuse  
25 me.

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1 "The alternative facility should also be  
2 equipped with general plant drawings and procedures,  
3 telephones, and either computer links, or some other  
4 means to access plant data. Details for each of the  
5 alternative facility characteristics are provided in  
6 the Interim Staff Guidance Document."

7 During the ACRS Subcommittee meeting in  
8 November of last year, a comment was made to clearly  
9 state the requirement that all alternative facilities  
10 need to be accessible during hostile action when  
11 multiple facilities are so designated. The rule  
12 language at that time inappropriately identified  
13 accessibility for use of all facilities. The wording  
14 of Section 4(e)(8)(d) of Appendix E will be revised to  
15 address this comment, as shown on this slide, to more  
16 clearly state the intent of this regulation. Next  
17 slide, please.

18  
19 CHAIRMAN ABDEL-KHALIK: Now, this facility  
20 would be offsite?

21 MR. KAHLER: Yes, it would be offsite.

22 CHAIRMAN ABDEL-KHALIK: Does that present  
23 an increased vulnerability, if that facility is able  
24 to somehow access plant data?

25 MR. MILLER: I think where we're headed

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1 with that one is to give the flexibility to access the  
2 data, and it would be -- could be envisioned anything  
3 from setting up a laptop in there, but you would still  
4 have the same controls to be able to access the data.  
5 So, that would be a consideration for designing that  
6 facility. If they wanted to have hardwired computers  
7 it would be a consideration. They'd have to put all  
8 the accessibility limits and locks on it, but one  
9 thought is they could just have a place where they  
10 could -- we didn't limit it to computer links,  
11 specifically. We limited it to being able to access  
12 the information. For example, a laptop computer and an  
13 ERO card could do the same thing.

14 CHAIRMAN ABDEL-KHALIK: Presumably, this  
15 facility would not be as secure --

16 MR. MILLER: Correct.

17 CHAIRMAN ABDEL-KHALIK: -- as a facility  
18 onsite. And the question then is, would access to  
19 that information make the plant more vulnerable?

20 MR. KAHLER: I can't respond to the fact  
21 of whether or not it would become more vulnerable, or  
22 whether the security would remain. But I can say  
23 that, as Chris has stated, expectations would be that  
24 normal security controls over the information, as is  
25 required now, would be at that facility. So, that is

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1 something that the licensees would have to incorporate  
2 into the design, and into the -- to incorporate those  
3 plant controls that they would have over that  
4 information.

5 CHAIRMAN ABDEL-KHALIK: Okay.

6 MR. KAHLER: That would be an expectation.

7 MEMBER ARMIJO: Is this facility staffed  
8 at all times, or --

9 MR. KAHLER: It would not, necessarily,  
10 have to be staffed at all times.

11 MEMBER ARMIJO: Be on standby in some --

12 MR. KAHLER: It could be on a standby. It  
13 could be in a current facility, such as a governmental  
14 office, offsite government office, could be even --  
15 some utilities are currently using fire departments  
16 for mustering stations.

17 MEMBER ARMIJO: Okay.

18 MR. KAHLER: Or it could be some sort of  
19 other space that they lease out.

20 MEMBER CORRADINI: So, it could be part of  
21 their nuclear services center separately from the  
22 facility.

23 MR. KAHLER: Yes.

24 MEMBER CORRADINI: Okay.

25 MR. KAHLER: And it is their choice of

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1 where that location is, that they would deem to be  
2 accessible during a hostile action event, and capable  
3 of having these other characteristics, whatever is  
4 best suited for them, knowing that the intent of it is  
5 to have an immediate response to the plant once the  
6 plant is secured. So, the intent is not to have it  
7 100 miles away, it is to have it close to the  
8 facility. Matter of fact, currently, by the bulletin  
9 there are facilities of this type set up for each  
10 site, and they are considered now mustering stations.

11 We are adding requirements to that going into the  
12 future with rulemaking; that it has these additional  
13 characteristics of engineering assessment, and  
14 planning and preparation for mitigation strategies  
15 once they can arrive on site. And, also, notification  
16 capabilities. The bulletin identified that you need  
17 to have mustering stations, an alternative facility.

18 CHAIRMAN ABDEL-KHALIK: Thank you.

19 MR. KAHLER: Topic four, "Licensee  
20 coordination with Offsite Response Organizations."  
21 Existing NRC regulations require the emergency plans  
22 can and will be implemented to protect public health  
23 and safety during a radiological emergency. A unique  
24 challenge during a hostile action is the increased  
25 demand on offsite emergency responders who are

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1 expected to both implement portions of the emergency  
2 plans, such as traffic control points and route  
3 alerting, as well as respond to the hostile action  
4 activities on the nuclear power plant site. Current  
5 regulations would be enhanced to consider hostile  
6 action activities when identifying those offsite  
7 resources that would respond to the plant site.

8 Licensees should review current  
9 arrangements they have in place with offsite resource  
10 providers, and revise existing, or obtain new  
11 agreements for these providers, as appropriate.  
12 Additionally, licensees should verify their  
13 arrangements for adequate offsite resources remain in  
14 effect as part of their annual update of their  
15 emergency plans and agreements.

16 MEMBER SIEBER: I might mention that that  
17 is not a simple task. Some points have multiple  
18 states, counties, municipalities, fire departments,  
19 all of which have mutual aid agreements, not only with  
20 the licensee, but among themselves as to how they will  
21 support each other. And if you consider the number of  
22 plants in the United States, and the number of states,  
23 and counties, and local governments involved, this  
24 would be a major task, and the implementation time for  
25 that is relatively short.

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1 MR. KAHLER: That topic did come up at our  
2 November 15<sup>th</sup> meeting. We received excellent feedback  
3 from offsite response organizations, and the staff is  
4 definitely considering some of that feedback we  
5 received --

6 MEMBER SIEBER: Right.

7 MR. KAHLER: -- on the capabilities of the  
8 offsite organizations to secure that additional  
9 assistance from other agencies.

10 MEMBER SIEBER: Right.

11 MR. KAHLER: Protection for onsite  
12 personnel. There is going to be a new Section IV.I to  
13 Appendix E to 10 CFR Part 50 to address concerns  
14 regarding the protection of onsite personnel during a  
15 hostile action. The final rule would require  
16 licensees to provide for the protection of onsite  
17 personnel in an emergency involving hostile action  
18 against a plant site. Such measures prudent to  
19 protect personnel necessary to safely shut down the  
20 reactor, and emergency responders necessary to  
21 implement the Site Emergency Plan. By specifying these  
22 measures for emergency responders, other onsite  
23 workers would benefit by being also protected because  
24 the protective measures will be provided to the site  
25 as a whole, and would not be directed to any

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1 particular group of workers. Interim Staff Guidance  
2 outlines the measures that should be considered for  
3 these protective actions.

4           Upon at number 6, "Challenging Drills and  
5 Exercises," and, actually, the last topic that is  
6 related to security events that came out of our review  
7 of the 9/11. There's going to be changes to Section  
8 IV(f)(2) to Appendix E to 10 CFR Part 50 that would  
9 insure that licensees develop and maintain key skills  
10 for emergency response through the conduct of drills  
11 and exercises.

12           NRC staff recognized that in the post 9/11  
13 threat environment, the Emergency Response  
14 Organization, ERO, will encounter challenges that  
15 differ from those practiced in longstanding drill and  
16 exercise programs because these programs have  
17 traditionally not included hostile action scenarios.  
18 Current NRC regulations are general in nature, and do  
19 not explicitly require licensees to include hostile  
20 action scenarios in drills and exercises, and certain  
21 predictable scenario attributes have emerged in almost  
22 all current biannual exercise scenarios, such as the  
23 ERO is not allowed to mitigate the accident before a  
24 release occurs, the release occurs after a general  
25 emergency is declared, the release is terminated

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1 before the exercise ends, and the exercise escalates  
2 sequentially through the four emergency classification  
3 levels.

4 In short, responders may have been  
5 preconditioned to accident sequences that are not  
6 likely to resemble the accidents they could  
7 realistically face. For these reasons, the staff has  
8 developed rulemaking to require licensees to enhance  
9 their drill and exercise programs by incorporating a  
10 wider range of scenario elements, including hostile  
11 action, a no release, or an unplanned minimal release  
12 scenario, such that offsite protective actions are not  
13 required, and an initial classification, or a rapidly  
14 escalating scenario to a site area, or a general  
15 emergency.

16 Current NRC regulations also do not  
17 specify the content of drill and exercise scenarios,  
18 nor do they directly allow the staff to require  
19 specific scenario content. The final rule identifies  
20 the principal functional areas of EP that are to be  
21 included in the scenarios, and the key skills that  
22 must be demonstrated.

23 Other changes include the submittal of  
24 exercise scenarios for prior NRC review, and  
25 identifying the conditions for when the NRC, or FEMA

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1 would determine that a remedial exercise is warranted.

2 Interim Staff Guidance provides details on each of  
3 these areas of the final rule.

4 The next topical area, topic number seven,  
5 is a result -- is the first one of the result of the  
6 comprehensive review that was initiated in 2005.  
7 Backup means for alert notification systems. The  
8 final rule would amend 10 CFR Part 50, Appendix E.  
9 The current regulations require the capability to  
10 promptly alert and notify the public during emergency.

11 However, they do not currently require a backup alert  
12 or notification capability in the event that the  
13 primary system is unable to perform either or both of  
14 these functions.

15 The NRC is adding language to the  
16 regulations to require a backup alert notification  
17 capability without specifying the methodology to be  
18 used. This allows flexibility in the selection of the  
19 method best suited for each site, and also allows the  
20 use of newer technologies as they get developed, or  
21 other alternative methods identified by licensees and  
22 offsite organizations.

23 Currently, the most common primary  
24 alerting means is sirens, and the most common  
25 notification means is an Emergency Alert Message, the

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1 EAS message over the radio or TV. Guidance is  
2 providing the Interim Staff Guidance document to  
3 clarify design objectives, and other criteria for  
4 alert notification backup methods.

5 Topic number eight is Emergency  
6 Declaration Timeliness. A new paragraph to Section IV  
7 of Appendix E will first require nuclear power reactor  
8 licensees to maintain the capability to assess,  
9 classify, and declare an emergency condition within 15  
10 minutes after the availability of indications to plant  
11 operators that an EAL has been exceeded. And, second,  
12 it will require licensees to promptly declare the  
13 emergency following identification of the appropriate  
14 emergency classification level.

15 The NRC would require a capability  
16 criterion, rather than a flexible performance  
17 criterion. This allows some degree of flexibility in  
18 addressing extenuating circumstances that may arise  
19 during an actual emergency. For example, an emergency  
20 declaration may need to be delayed in order to perform  
21 actions that are urgently needed to protect public  
22 health and safety. The Interim Staff Guidance  
23 document provides information on how to implement this  
24 portion of the new rule.

25 Next topic, number nine, is "Emergency

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Operations Facility, a Performance-Based Approach." Section IV.E.8 of Appendix E to 10 CFR Part 50 would be amended to permit licensees to use a performance-based approach when siting their Emergency Operations Facility, the EOF. The final rule incorporates EOF distance criteria currently found in NRC guidance, and specifies that an EOF must be located within 10-25 miles of each nuclear power plant site, or if that EOF is located less than 10 miles from the site, then a backup facility must be provided within 10-25 miles from the site.

The performance-based criteria are applicable to all EOFs, regardless of their location with respect to the site. The EOF functions that would have to be addressed include the capability to obtain and display plant data for each unit or site that the EOF serves. Additionally, a co-located, or a consolidated facility would also need to be capable of effectively responding to events at more than one site simultaneously.

During the ACRS Subcommittee meeting on November 1<sup>st</sup>, a discussion occurred about remotely located consolidated EOFs, and the need for careful consideration for use of such facilities by licensees.

The staff acknowledges that licensees should

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1 carefully weigh several factors when considering a  
2 remotely located consolidated EOF, such as timely  
3 staffing by licensee personnel with the necessary  
4 technical knowledge and familiarity for each site and  
5 operating unit, and the suitability of the location  
6 for state and local agency personnel who would be  
7 responding to that facility. These factors have been  
8 addressed in the draft final rule language, and within  
9 the Statements of Consideration. Interim Staff  
10 Guidance provides detailed information on the  
11 performance criteria for all EOFs.

12 MEMBER SIEBER: I might point out that  
13 during the Subcommittee meeting, this was an area of  
14 discussion, and there is differences of opinion as to  
15 what should be allowed, and what should not be  
16 allowed. The philosophy is the greater the distance,  
17 from a public perception standpoint, the less the  
18 public feels that the EOF and senior personnel are  
19 involved in the public safety. In cases where a plant  
20 is located in a state different than the EOF might be  
21 located, that may pose some difficulties with state  
22 response to actions at a plant where the command and  
23 control center is not in the state. That may be an  
24 artificial concern, but, nonetheless, it could pose  
25 some interference. So, there are reasons to carefully

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1 consider why an EOF, particularly consolidated EOFs at  
2 great distances from the plant should be allowed, or  
3 perhaps discouraged. And that is an element that I  
4 think our Subcommittee and the Full Committee needs to  
5 ponder.

6 MR. KAHLER: Okay. Going on with the next  
7 slide, EP Rulemaking Topic Ten that was on the table,  
8 "Evacuation Time Estimate Updated." Current  
9 regulations require licensees to develop Evacuation  
10 Time Estimates, ETes, but they do not require a  
11 periodic update.

12 The NRC would amend 10 CFR 50.47(b)(10) to  
13 include additional requirements regarding ETes, such  
14 as periodic updates, and submittal to the NRC for  
15 review and confirmation of adequacy prior to their  
16 use. Section IV of Appendix E to 10 CFR Part 50 would  
17 also be amended to require that ETes be used by  
18 licensees, and be provided to state and local  
19 governmental authorities for use in developing their  
20 protection action strategies. As a minimum, they will  
21 be updated within 365 days of the availability of the  
22 decennial Census Data. We have developed a NUREG,  
23 NUREG/CR-7002, that details the process for  
24 development and review of the ETes. Don Tailleart of  
25 my staff is going to provide more details of this

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1 NUREG during his presentation.

2 MEMBER SHACK: Is there existing guidance  
3 now beside the NUREG, is there a Reg Guide that people  
4 have been using?

5 MR. KAHLER: There is an existing guidance  
6 document now, yes.

7 MEMBER SHACK: It's a Reg Guide?

8 MR. KAHLER: It is --

9 MR. SULLIVAN: NUREG and attachment to --

10 MR. KAHLER: NUREG-0654. It's contained  
11 within NUREG-0654 as an appendix.

12 MEMBER SHACK: And how old is that?

13 MR. KAHLER: 1980.

14 MEMBER SHACK: 1980.

15 MR. SULLIVAN: But there's been two NUREGs  
16 published on the topic since then.

17 MR. KAHLER: Could you introduce yourself,  
18 Randy?

19 MR. SULLIVAN: Oh, Randy Sullivan, NSIR  
20 staff.

21 MEMBER SIEBER: Okay. This has been an  
22 area again in the Subcommittee where there was  
23 discussion, and additional consideration. For  
24 example, there can be emergencies caused by hostile  
25 action which might have an external effect that would

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1 alter the evacuation of people in the vicinity of the  
2 plant. Additional consideration may be an extensive  
3 seismic event that could damage the plant, and also  
4 damage certain portions of the infrastructure; in  
5 other words, the evacuation routes that the local  
6 population would use. So, the decision comes, can you  
7 make some kind of an estimate as to how long  
8 evacuation would take when some of the evacuation  
9 routes are impaired, either by weather, or seismic  
10 event, or hostile action, or what have you. And,  
11 under those circumstances, and in considering the  
12 strength and expected duration of a release, is  
13 evacuation more appropriate than sheltering, or is the  
14 reverse the appropriate action?

15 MEMBER SHACK: But, Jack, all those  
16 estimates would be totally dependent on the  
17 assumptions you make for the event.

18 MEMBER SIEBER: That's right.

19 MEMBER SHACK: So it's kind of open-ended.  
20 You could get any answer you want.

21 MEMBER SIEBER: Yes, that's right, and I  
22 think you would have to pick out a few classic cases,  
23 because the evacuation estimates are not run real time  
24 for the accident. There is not a traffic reporter  
25 putting input into this so that they can crank it out.

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1 On the other hand, it would be a good idea to know  
2 that if you had a major interstate highway that  
3 traversed your site, or bridges, river crossings, or  
4 what have you, it would be good to know in those  
5 circumstances for some few typical cases, how that  
6 would affect and extend the evacuation time. And,  
7 perhaps, it would help make the protective action  
8 recommendation. So, that's an area of discussion that  
9 requires, at least in my mind, and perhaps some  
10 others, some further consideration.

11 MR. KAHLER: If I can Mr. Sieber, we did  
12 take back with us from the ACRS Subcommittee meeting  
13 some of those discussion points. Joe Jones of Sandia  
14 has met with staff and discussed it, and did some  
15 evaluation of the current document, and how it might  
16 address those issues, or some of the thoughts in that  
17 evaluation. If I can, Joe Jones of Sandia, if he can  
18 give us an idea of some of those discussions you had.

19 MR. JONES: All right. This is Joe Jones  
20 with Sandia. With regard to, first, the loss of a  
21 major artery leaving the site, or leaving the EPZ,  
22 there is construction scenario sequence that we asked  
23 for that does address the effect of the loss of a  
24 single major arterial road leaving the EPZ.

25 With regard to the natural hazards, such

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1 as a hurricane, with a hurricane we watch those days  
2 in advance, and regions are evacuated, so any  
3 hurricane that would enter a site near a reactor, it  
4 can be assumed that that area is largely evacuated  
5 long before the hurricane ever damaged the facility.

6 With regard to a seismic event, and that  
7 is an interesting one, because you potentially disrupt  
8 roadways, as well. A seismic event of the size you're  
9 describing that would affect a reactor, would also  
10 affect local structures within the EPZ, very likely  
11 damage, at the least, windows.

12 In that case, you've lost your shelter  
13 capacity. You no longer have a benefit from  
14 sheltering. Evacuation is your only protective  
15 action. And the time is no longer a factor in that  
16 protective action decision, and that's why we don't  
17 ask for an ETE for that scenario.

18 MEMBER SIEBER: Yes. I also looked at  
19 some events, including TMI, and how that was handled,  
20 Chernobyl, the Chilean mine disaster, the Katrina  
21 disaster where evacuations -- the Chilean mine  
22 disaster did not have any evacuation sense, but from  
23 the emergency standpoint, it was interesting. But  
24 there is a wide variety of things that could happen,  
25 but this is an item to be considered, is, in my

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1 opinion, not of sufficient importance to delay  
2 issuance of the rule at this time. But I think  
3 additional thought needs to be put to that for  
4 potential enhancement of future --

5 CHAIRMAN ABDEL-KHALIK: Now, did I hear  
6 you currently that this information needs to be  
7 updated at least once every 10 years?

8 MR. KAHLER: That is correct.

9 CHAIRMAN ABDEL-KHALIK: I assume that  
10 that's related to the Census.

11 MR. KAHLER: That's correct.

12 CHAIRMAN ABDEL-KHALIK: Now, is there any  
13 other sort of prompt --

14 MR. KAHLER: Yes.

15 CHAIRMAN ABDEL-KHALIK: -- that would  
16 require licensees to update this information on a more  
17 frequent basis?

18 MR. KAHLER: Yes, and that is contained  
19 within the rule, itself. And there is a trigger point  
20 at which either the ETE -- we are requiring the  
21 licensees to perform what is called a Sensitivity  
22 Analysis, whenever they do their ETE, which is that  
23 they will project what change in population for their  
24 evacuation time estimate scenario would increase that  
25 ETE by 30 minutes, or any time population changes by

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1 more than 25 percent within an area of the EPZ that is  
2 considered in the ETE, itself. So, those are --  
3 whichever is lower. So, those are the two additional  
4 trigger points that they must look at on an annual  
5 basis.

6 CHAIRMAN ABDEL-KHALIK: Okay.

7 MR. KAHLER: Any time that trigger point  
8 is crossed, they must then perform another analysis of  
9 their ETE to determine if an update is warranted.

10 CHAIRMAN ABDEL-KHALIK: Okay.

11 MR. TAILLEART: Just a slight  
12 clarification. The population increase would have to  
13 cause an increase in the ETE of either 30 minutes, or  
14 25 percent.

15 MR. KAHLER: Or 25 percent, I'm sorry.

16 MR. TAILLEART: Whichever is less. Not a  
17 population increase of 25 percent, the ETE increase of  
18 25 percent.

19 MR. KAHLER: The population that would  
20 cause a 25 percent increase in the ETE.

21 MR. TAILLEART: In the time.

22 MR. KAHLER: In the time.

23 MR. TAILLEART: Or 30 minutes, whichever  
24 is less.

25 MEMBER SIEBER: Yes. It's also interesting

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1 to note that population, the term "population" does  
2 not, necessarily, mean whatever the Census tells you  
3 it is, as far as residents are concerned. There is a  
4 quantity called "phantom population," which are,  
5 basically, transients, you may have an attraction near  
6 the site within the 10-mile EPZ, a racetrack, or what  
7 have you, that would add to the real population, but  
8 it would not a registered population. That has to be  
9 taken into consideration, also.

10 MR. KAHLER: It's considering the  
11 evacuated population.

12 MEMBER SIEBER: Right.

13 CHAIRMAN ABDEL-KHALIK: I assume that even  
14 though this analysis is done annually, when you talk  
15 about a change of 30 minutes, or 25 percent, that  
16 pertains to the cumulative change in the population  
17 since this information was last updated, rather than  
18 changes resulting from population changes in the --

19 MEMBER SIEBER: Right.

20 MR. KAHLER: From the last update, not  
21 from the last decennial Census.

22 CHAIRMAN ABDEL-KHALIK: Okay.

23 MR. KAHLER: That's correct.

24 CHAIRMAN ABDEL-KHALIK: All right.

25 MR. KAHLER: So, it's a continual effort.

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1 CHAIRMAN ABDEL-KHALIK: Okay.

2 MR. KAHLER: Right now, the regulations as  
3 they are written requires no periodic update. We have  
4 a RIS that we issued that states the intent is to do  
5 it at least once every 10 years, but now we're going  
6 to codify that.

7 CHAIRMAN ABDEL-KHALIK: Okay. Thank you.

8 MEMBER ARMIJO: I just want to kind of  
9 explore what you would do in the event that you  
10 postulated a credible hostile action that would  
11 significantly change your evacuation time estimate,  
12 what do you do then?

13 MR. KAHLER: We, actually, are writing  
14 guidance now for protective action strategies that  
15 licensees should consider during a hostile action.  
16 Part of that protective action strategy is to closely  
17 coordinate with offsite agencies what considerations  
18 during that event should be taken, such that it may be  
19 necessary for, even though radiologically there is no  
20 need to evacuate the population, offsite agencies have  
21 made a decision it's in their best public health  
22 interest, as a result of the hostile action, itself,  
23 to evacuate the population, or it may be in their best  
24 interest to shelter them. Part of that protective  
25 action strategy is do some of that up front thinking,

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1 and to include it in your plans and procedures as to  
2 what would cause the need to shelter or would cause  
3 the need to evacuate. And we're asking to do it up  
4 front.

5 MEMBER ARMIJO: Well, assuming you  
6 couldn't evacuate rapidly enough because some hostile  
7 action impeded a major road, or bridge, or something  
8 like that, then your alternative is remove the hostile  
9 people.

10 MR. KAHLER: That would be the ultimate,  
11 yes.

12 MEMBER ARMIJO: And assuming there's ways  
13 to do that, I don't know, or sheltering is kind of  
14 like really your only option, or develop some sort of  
15 backup exit through secondary roads, or things like  
16 that. Is that part of the process?

17 MR. KAHLER: That would be part of the  
18 offsite planning process, as to -- as it would be now,  
19 if there was a construction activity on a roadway that  
20 would inhibit the evacuation, if it were so needed  
21 during an actual event. Offsite agencies would have  
22 to make decisions on how to redirect that evacuation,  
23 whether it be a hostile action, or some sort of a  
24 manmade type of obstruction. It could even be such  
25 that the roads are impassible due to inclement

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1 weather, or whatever, at which time then sheltering  
2 does afford some protective action. There is a dose  
3 reduction.

4 MR. SULLIVAN: Randy Sullivan. I kind of  
5 feel the need to chime in here. We've studied  
6 hundreds, about 300 evacuations in the U.S. Almost all  
7 of them are ad hoc. At a nuclear plant, we have a  
8 level of planning that just doesn't exist elsewhere.  
9 And the loss of a road does not -- if somebody blows  
10 up a bridge in the middle of a hostile action event,  
11 that's not going to stop evacuation.

12 And, further, I'd like to express some  
13 humility, that we in Washington probably don't know  
14 how to evacuate a county as well as the police, who  
15 protect that county. These folks are actually very  
16 good at that, and the fact that we have preplanning  
17 only enhances their otherwise effective efforts. So,  
18 if there's a road problem, the locals would probably  
19 be able to detail with it much better than any  
20 guidance we could write from Washington telling them  
21 how to deal with it.

22 MEMBER ARMIJO: Good.

23 MR. KAHLER: I'd like to move on then to  
24 Topic number eleven, "The Emergency Plan Change  
25 Process." A licensee is required by 10 CFR 50.54(q) to

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1 follow and maintain in effect emergency plans which  
2 meet the requirements of Appendix E, and for nuclear  
3 power reactors standards of 10 CFR 50.47(b).

4 A section of 54(q) provides a process  
5 under which a licensee may make changes to its  
6 approved Emergency Plan without prior NRC approval,  
7 provided the plan, as changed, meets two criteria.  
8 These two criteria is that the plan continues to  
9 promptly - excuse me - the plan continues to comply  
10 with the requirements of Appendix E, and for nuclear  
11 power reactors, the planning standards in 47(b), and  
12 the changes do not reduce the effectiveness of a plan.

13 Current rule does not clearly describe  
14 what constitutes a reduction of effectiveness. The  
15 amended rule language with support of a new Regulatory  
16 Guide 1.219 that has been developed, provides  
17 clarification of this issue. Specifically, the final  
18 rule amendments to Section 54(q) would result in the  
19 following changes.

20 First, it provides a method for  
21 determining what emergency plan changes constitute a  
22 reduction of effectiveness. Second, it provides  
23 definitions for all the significant terms used in the  
24 rule language. And, third, the amended rule requires  
25 that the license amendment process of 50.90 be used in

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1 applying for prior NRC approval of changes determined  
2 to be a reduction of effectiveness.

3           Going on to the last rulemaking topic,  
4 this is the removal and complete of one-time  
5 requirements. Several regulatory provisions that  
6 require owners and licensees to take certain one-time  
7 actions following the TMI accident in 1979 would be  
8 removed. These actions are complete, and the  
9 requirements are no longer binding on any current  
10 licensee.

11           That concludes my portion of discussion of  
12 the 12 rulemaking topics. I'd like to go on now with  
13 talking about those specific requests for stakeholder  
14 input that we issued during the public comment period  
15 in May of 2009.

16           We requested input on, specifically, seven  
17 topics. The first topic was with the inclusion of  
18 National Incident Management System, NIMS, and the  
19 Incident Command System, ICS, into licensee emergency  
20 plans. After reviewing the comments received, NRC  
21 staff did not incorporate the requirement into the  
22 rulemaking. This decision was based upon the staff's  
23 determination that NRC regulations, as amended by this  
24 final rule, contain adequate requirements to insure  
25 licensee compliance with these regulations would

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1 result in effective coordination of emergency response  
2 activities between offsite organizations and the  
3 onsite responders, the licensees.

4 The second specific request for  
5 stakeholder input was on whether the regulations  
6 should explicitly state the number of emergency  
7 responders for both the on-shift staff, and the  
8 augmenting emergency response organization, something  
9 in addition to that shift staffing analysis I  
10 discussed earlier. Specifically, the NRC requested  
11 comments on a draft staffing table that provided  
12 proposed staff functions, and minimum staffing levels  
13 for the on-shift and augmenting ERO. After reviewing  
14 the comments received, the staff determined the  
15 staffing table would not be included in the  
16 regulations. The staff agreed with the commentors  
17 that the table would be too prescriptive, and would  
18 not accommodate differences in staffing levels at each  
19 site because of those site-specific issues we  
20 discussed.

21 The third request for stakeholder input  
22 was on the effective date of the rule for a Combined  
23 Operating License Early Site Permit applicants. The  
24 effective date of this rule is to be 30 days after the  
25 publication of the final rule in the Federal Register.

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1           The NRC was requesting input on how that  
2 effective date may impact docketed new reactor  
3 applications by Combined License and Early Site Permit  
4 applicants. The NRC received comments, the NRC should  
5 not require pending Combined License and Early Site  
6 Permit applicants to implement the final rule change  
7 until after the NRC issues the license or permit.

8           In response to these comments, the final  
9 rule will offer applicants the option to defer  
10 compliance with the final rule until time after the  
11 license or permit is issued. That period of  
12 compliance deferral between the effective date of the  
13 rule and a selected date of December 31<sup>st</sup>, 2013 was  
14 selected specifically to apply only to those  
15 applications that have already been docketed, and are  
16 nearing completion of the safety review, and  
17 applicable subsequent hearings prior to a licensing  
18 decision being made on the application.

19           The NRC decided to limit the duration of  
20 that deferral because future applicants and currently  
21 docketed applicants not nearing a licensing decision  
22 would have ample time to bring their applications into  
23 compliance with this final rule without the need to  
24 defer that compliance.

25           Item       number       four       is       with       the

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1 implementation dates. As proposed in May of 2009, the  
2 rule would be implemented on a schedule that varies  
3 from 30 days to upwards of three years. Based on input  
4 received during the public comment period, several  
5 adjustments to the implementation dates for various  
6 portions of the final rule were made that were  
7 published in October of 2010. And, as I stated  
8 previously, on November 15<sup>th</sup> of 2010, NRC conducted a  
9 public meeting, providing additional opportunity for  
10 stakeholders to provide input on implementation dates.

11 Excellent feedback was received during that public  
12 meeting, and that input is currently under evaluation  
13 by the staff.

14 And, finally, public comment was requested  
15 on whether the NRC should include requirements for  
16 non-power reactor licensees, Research Test Reactors,  
17 RTRs, in three specific areas, performance of that  
18 staffing analysis, requiring capability time limit the  
19 requirement for declaring an emergency, and having  
20 hostile action emergency action levels. All the  
21 comments received opposed the inclusion of these  
22 requirements on non-power reactor licensees.

23 The staff agrees with these commentors,  
24 and did not incorporate these three topics into the  
25 draft final EP rule for non-power reactors.

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1           At this time, this concludes my portion of  
2 the presentation, and I would like to now turn it over  
3 to Don Tailleart of my staff, the Team Leader that has  
4 been overseeing the EP rulemaking project.

5           MEMBER SHACK: Could you just give me the  
6 argument on Topic One, again?

7           MR. KAHLER: Inclusion of National  
8 Incident Management System, and Command System? That  
9 was directed by the federal government through a  
10 Presidential Directive that state and local  
11 authorities were to implement NIMS and ICS. So, it  
12 was directed toward governmental entities.

13          MEMBER SIEBER: You might explain what  
14 they are, so anybody that doesn't know what those  
15 terms mean --

16          MEMBER ARMIJO: Yes, what are they, and  
17 what are they supposed to do?

18          MR. KAHLER: The National Incident  
19 Management System is a methodology for response to an  
20 incident that is occurring, such that fire  
21 departments, police departments, and emergency  
22 responders, and federal agencies, and state agencies,  
23 along with those local agencies all use the same  
24 approach, the same terms, and the same organizational  
25 type of structures to respond to the event. As a

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1 result of 9/11, it was found different people were on  
2 different radio frequencies. They were implementing  
3 their response strategies differently. The National  
4 Incident Management System is trying to provide  
5 cohesiveness to that response.

6 Incident Command System is a portion of  
7 that methodology in how the incident command center,  
8 itself, that is the heartbeat of that response  
9 directly on the ground, how they are then responding  
10 to the event, and interacting between each other from  
11 an incident command post portion, which is something  
12 that would be between the offsite agencies that be  
13 responding to the site, and the licensee onsite  
14 response, that integration of that incident command  
15 response. The incident commander from the site, and  
16 the incident commander from offsite, how would they  
17 integrate their response capabilities?

18 MEMBER ARMIJO: And what was the objection  
19 to incorporating, or sort of coordinating with these  
20 systems, or organizations?

21 MR. KAHLER: I guess, first of all, the  
22 imposition of the NIMS/ICS was meant by the federal  
23 government to only be on governmental authorities.  
24 That's the high level portion of this.

25 The other idea of this, though, is that

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1 currently, the practice between onsite responders and  
2 offsite responders has been ongoing for numerous  
3 years, and they have worked together to create an  
4 incident command structure that even though it still  
5 meets NIMS/ICS, they have some slight differences  
6 within it, and if we, therefore, impose a federal  
7 structure upon the licensee, it may create some sort  
8 of a --

9 MEMBER ARMIJO: Confusion, at least.

10 MR. KAHLER: Yes, a disparity with the  
11 offsite response organization that didn't implement it  
12 completely. Basically, they're telling us we have a  
13 system that works now, and we have been working with  
14 it for years. We feel comfortable with it. We don't  
15 want imposition of this new federal response  
16 requirement for this specific commercial entity  
17 response.

18 MEMBER ARMIJO: You didn't see any major  
19 deficiencies in the existing system that our licensees  
20 are using?

21 MR. KAHLER: We didn't see any major  
22 deficiencies. The rule language, itself, continues to  
23 state that this coordination of Incident Command  
24 Response must be such that the effectiveness of that  
25 response is maintained in order to provide public

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1 health and safety.

2 Within the Interim Staff Guidance  
3 document, we have strongly suggested and recommended  
4 that NIMS/ICS be adopted as that means. So, we do  
5 point to it, but we're not making it a requirement.

6 MR. TAILLEART: Or at least licensees be  
7 familiar with it, so that they can communicate using  
8 the same terminology and language as the offsite  
9 response agencies. But to Bob's point, there are a  
10 number of existing regulations that do require  
11 effective coordination and communication between  
12 onsite and offsite agencies, and demonstrated  
13 routinely through drills and exercises. So, they have  
14 a chance to see if there are any issues, if there  
15 issues identified, then those have to be corrected,  
16 and then we can observe and make sure that --

17 MEMBER ARMIJO: Okay.

18 MR. TAILLEART: -- what does take place is  
19 effective.

20 MR. MILLER: If I could --

21 MEMBER SIEBER: Go ahead.

22 MR. MILLER: I was going to say, if I  
23 could add just a little bit more. It is fairly recent  
24 federal guidance that has required this of federal  
25 agencies. I think the move is to get all responders

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1 for all hazards on to this system, but it's not there  
2 yet. And there are some local and state agencies that  
3 actually don't use this Incident Command, and the  
4 NIMS, specifically. They have, as Bob said, they have  
5 developed their own specific methods, but the  
6 terminology is not the same, there's some differences  
7 in it. So, we felt that if we went ahead and  
8 implemented the NIMS and the ICS just exactly as it's  
9 required of the federal agencies in the federal effort  
10 right now, that it may cause a disruption, and be more  
11 difficult, and not result in --

12 MEMBER ARMIJO: Add much value.

13 MR. MILLER: -- much between the benefit  
14 that we were looking for. So, we made sure that they  
15 are -- we put language in there to say that licensees  
16 are able to effectively communicate with the offsite  
17 response organizations in whatever flavor that is.  
18 And, you know, six years from now, it might be a  
19 different system, and we don't want to have it limited  
20 by the fact that we specifically have this terminology  
21 highlighted in there.

22 MEMBER SIEBER: It's sort of interesting,  
23 I think, at least it's my impression that some of  
24 these utility government emergency planning  
25 communication systems are actually better than the

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1 NIMS system, because they have some dedicated lines,  
2 even though having a dedicated line is not all it's  
3 cracked up to be, because you're also dedicated to  
4 whatever failures occur on that line, that force you  
5 into the regular system. But communication systems  
6 have been in place for a long time, and that, to my  
7 knowledge, has not been, at least in recent years, a  
8 topic of concern.

9 CHAIRMAN ABDEL-KHALIK: I presume that the  
10 argument for your agreement with the input with regard  
11 to items 5-7 for non-power reactor licensees is sort  
12 of directly related to the risk level associated with  
13 those facilities.

14 MR. KAHLER: Yes, risk to the public,  
15 itself. Yes.

16 CHAIRMAN ABDEL-KHALIK: But, by the same  
17 token, the security level of those facilities is  
18 significantly less than that for power reactor  
19 licensees. How do you balance these two  
20 considerations?

21 MR. KAHLER: If I can, we do have a  
22 representative from -- who might be able to address  
23 the issues. They were -- helped us quite extensively  
24 in the resolution of these comments.

25 MS. REED: Hi, Beth Reed, NRR. I guess

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1 what was also said was because of the consequences,  
2 also applies with security requirements, as well. The  
3 consequences are so much lower, and so the security is  
4 a little bit lower. It's all based on the type of  
5 material, the percentages of enrichment, those sort of  
6 things. So, the non-power reactors are a lot lower  
7 than the power reactors for emergency preparedness and  
8 security. Does that answer the question?

9 CHAIRMAN ABDEL-KHALIK: No, not really.

10 MS. REED: Okay.

11 CHAIRMAN ABDEL-KHALIK: I do understand  
12 that the risk is lower. But, also, at the same time,  
13 the security level is lower, and the question is, how  
14 do you balance these two considerations?

15 MS. REED: Well, it also goes back to the  
16 Atomic Energy Act. There is a part in it about the  
17 minimum requirements that will still allow the  
18 Commission to protect the health and safety of the  
19 public and common defense. So, if we go beyond that  
20 and try to make the non-power reactors be power  
21 reactors, we get a lot of push-back from the licensees  
22 that we're not in compliance with the Atomic Energy  
23 Act. So, we've done security assessments, we've  
24 looked at what is needed to protect the common  
25 defense, and we walk a very fine line trying to not go

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1 beyond that. So, that's another reason why there's a  
2 difference, because of the minimum requirements.

3 CHAIRMAN ABDEL-KHALIK: Okay.

4 MR. SULLIVAN: I'd like to add to that.  
5 Randy Sullivan, if I could. Many of the emergency  
6 preparedness requirements apply to RTRs; however, when  
7 you look at the emergency planning zone for an RTR, it  
8 is often within the building where the reactor is, or  
9 certainly on the property of the university. So, even  
10 if there is hostile action, the effect on the public  
11 is well, minimal.

12 MEMBER ARMIJO: It's really a political  
13 action. That's where the damage would be to take on.  
14 These facilities are vulnerable, and --

15 MEMBER POWERS: One thinks of Virginia  
16 Tech, and does not come away with that conclusion.

17 MS. REED: I'm sorry?

18 MEMBER POWERS: Well, Sam asserted that it  
19 would be a political action on a university campus,  
20 and I'm thinking of a recent incident in which that's  
21 not the case.

22 MEMBER ARMIJO: No, I'm just saying that  
23 the impact is mostly political, and the -- because you  
24 don't have --

25 MEMBER POWERS: Again, I come back to

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1 Virginia Tech, and don't come to that conclusion.

2 MEMBER ARMIJO: Okay. You're talking about  
3 the shootings?

4 MEMBER POWERS: Yes, somebody shot up some  
5 things, I mean.

6 MEMBER ARMIJO: Yes. A certain number of  
7 people would be killed, we're not talking about -- I'm  
8 not ignoring that, but I'm saying these are --

9 MEMBER POWERS: Well, I mean, you're  
10 driving the conclusion of generality in it. And the  
11 one thing that comes to mind does not agree with that  
12 conclusion.

13 MEMBER ARMIJO: I guess I don't understand  
14 your --

15 MEMBER CORRADINI: I'm a little bit in  
16 conflict, but I think what was stated over here, I  
17 think from an informational standpoint is true, is  
18 that from what I know, it's housed literally within  
19 security zone of most of these, if not the building,  
20 at least, if not the security zone of most of these  
21 facilities.

22 MR. SULLIVAN: Right. That's my  
23 understanding.

24 MS. REED: And I may also add that just  
25 because non-power reactors is not incorporated in this

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1 rulemaking doesn't mean that something will not come  
2 in the future. We are looking into that, going to  
3 develop a regulatory analysis to figure out do we need  
4 hostile action EALs, is there a need? There may be,  
5 there may not be. Is there, you know, the time lines  
6 for declaration of emergencies. They have the EALs  
7 very similar to the power reactors, but their response  
8 to them is very different. And, as Randy was saying,  
9 basically because it's all -- the whole emergency  
10 planning zone is the building, even sometimes smaller  
11 than the building, just the reactor bay, so you don't  
12 have this coordination with offsite response  
13 organizations, because you don't need to evacuate the  
14 public, you just evacuate the building.

15 MEMBER ARMIJO: Or the area.

16 MEMBER SIEBER: Source terms are very low  
17 in almost all of these cases.

18 MS. REED: Right.

19 MEMBER SIEBER: The only other aspect  
20 that's important is there are two facilities that are  
21 non-power reactor licensees who have high enriched  
22 material where the safeguarding of the material itself  
23 becomes important, and that usually results in an  
24 increase in security at the facility, but not for  
25 emergency purposes.

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1 MEMBER ARMIJO: Okay. We'll talk.

2 MR. KAHLER: Okay, I'd like to continue,  
3 turning over the presentation to Don, as I said, who  
4 will go over the NRC guidance documents, and our  
5 comment resolution of significant topical areas. Don.

6 MR. TAILLEART: Thank you, Bob, and good  
7 morning. Three NRC guidance documents were developed  
8 to provide additional information regarding the  
9 rulemaking topics, and they're shown on this slide.  
10 There's a NUREG/CR document for evacuation time  
11 estimate updating, a Regulatory Guide for the amended  
12 emergency plan change process, and an Interim Staff  
13 Guidance document for the remaining rulemaking topics.

14 As mentioned previously, these documents  
15 were provided as draft documents for public comment in  
16 2009. We made a number of revisions to these  
17 documents in response to several of those comments,  
18 and provided final drafts of these documents to the  
19 ACRS for review last October. I'll provide a brief  
20 summary of each document, and then I'll address public  
21 and ACRS Subcommittee comments on these documents, as  
22 well as on each of the rulemaking topics. And I'll  
23 cover that a little bit later in my presentation.

24 The first document is the NUREG for ETE  
25 updates. This document provides guidance for

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1 developing and updating the ETE analyses, including  
2 development of ETEs for the staged evacuation  
3 protective action, consideration of shadow evacuations  
4 in the analysis, consideration of the evacuation tail  
5 and ETE updates, in general.

6 Research in large-scale evacuations has  
7 shown that implementation of staged evacuations can be  
8 more beneficial to public health and safety. A staged  
9 evacuation is where one area is ordered to evacuate,  
10 while adjacent areas are ordered to shelter-in-place  
11 until directed to evacuate. This guidance document  
12 establishes an approach for developing ETEs for these  
13 situations.

14 The guidance also establishes the need to  
15 include a 20 percent shadow evacuation in the ETE  
16 analysis. A shadow evacuation is defined as an  
17 evacuation from areas outside an officially declared  
18 evacuation zone. The shadow population is considered  
19 in the analysis to account for any effect this  
20 population group may have on impeding the evacuation  
21 of those who are under evacuation orders.

22 ETEs provide information for use in the  
23 formulation of a licensee's protective action  
24 recommendations, and also for offsite response  
25 organization protective action strategies. ETEs that

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1 overestimate or underestimate evacuation times are not  
2 helpful in making the best protective action  
3 decisions. Research of previous evacuations shows that  
4 approximately 10 percent of the population takes a  
5 longer time to evacuate, and this is referred to as  
6 the evacuation tail.

7 Planning is established to evacuate all of  
8 the public, but decision makers should use 90 percent  
9 ETE values when making their protective action  
10 decisions. This provides the estimated time to  
11 evacuate the vast majority of the public without  
12 overestimating the evacuation time due to a small  
13 percentage of evacuees taking a longer time.  
14 Therefore, the time to evacuate 90 percent and 100  
15 percent of the population would be provided in the ETE  
16 studies.

17 Section IV of Appendix E to 10 CFR Part 50  
18 would require ETE updates after a decennial Census, or  
19 when the EPZ permanent resident population increases,  
20 such that it causes a material change in the ETE  
21 values, which we discussed a little bit earlier today.

22 Licensees shall estimate EPZ permanent  
23 resident population changes at least annually during  
24 the years between decennial Censuses using U.S. Census  
25 Bureau data, or state and local government population

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1 data, whichever is available. This guidance describes  
2 how to use this information to determine if an ETE  
3 update is needed.

4 The NRC staff considers this document to  
5 be an acceptable template for use by licensees to meet  
6 the new requirements for the development and updating  
7 of ETE studies. We would expect that each ETE analysis  
8 report be formatted consistent with the template  
9 provided in this document, or an appropriate  
10 alternative. And that update would be submitted to  
11 the NRC in accordance with 10 CFR 50.4 for review to  
12 confirm the adequacy of the ETE analysis. There is a  
13 set of criteria provided in the guidance document,  
14 Appendix B, that would be used to determine the  
15 adequacy of the ETE analysis.

16 Moving on to the next document, Regulatory  
17 Guide 1.219, this is a new Regulatory Guide that was  
18 developed in conjunction with the amended 50.54(q)  
19 rule language. Again, it provides a method acceptable  
20 to NRC staff for nuclear power reactor licensees to  
21 demonstrate compliance with the amended 50.54(q) rule.  
22 Although the examples and explanations provided in  
23 this guide are specific to power reactors, we do think  
24 this document would also be useful to non-power  
25 reactors who would also be subject to the 50.54(q)

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1 rule requirements.

2 It does provide general guidance on the  
3 50.54(q) change process, and it also provides an  
4 explanation of the definitions in the amended rule,  
5 and significant terms used in the guide, itself. The  
6 guide identifies for each planning standard in Section  
7 50.47(b) one or more emergency planning functions that  
8 are used in assessing whether a plan change would  
9 cause a reduction in effectiveness, and would require  
10 prior NRC approval.

11 The emergency planning functions are used  
12 only in assessing whether a reduction in effectiveness  
13 is involved. The licensee still needs to show that  
14 the plan continues to meet the requirements in  
15 Appendix E, and for power reactors Section 50.47(b).

16 The guide also provides illustrative  
17 examples of typical changes that would likely be a  
18 reduction in effectiveness, and those changes which  
19 would not. However, the examples are not intended to  
20 be all-inclusive, or all-exclusive.

21 The guide provides guidance on submitting  
22 changes that are reductions in effectiveness for NRC  
23 approval, documentation of the changes made, and the  
24 reduction in effectiveness evaluations, and there are  
25 also some record-keeping requirements.

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1           The third guidance document that was  
2 developed in support of the final rule is the Interim  
3 Staff Guidance document, NSIR/DPR-ISG-01. The purpose  
4 of this Interim Staff Guidance is to provide updated  
5 guidance information for addressing the new emergency  
6 planning requirements for nuclear power plants in the  
7 final rule. It should be used by licensees and  
8 applicants as guidance for implementing changes to the  
9 onsite Emergency Preparedness Programs based on these  
10 revised requirements. It is also intended for use by  
11 NRC staff in reviewing the adequacy of the revised  
12 onsite EP programs.

13           The staff recognized the need to update  
14 onsite Emergency Preparedness Program guidance in  
15 support of the new regulatory requirements, and  
16 identified changes that are needed in several existing  
17 guidance documents, such as NUREG-0696 and Supplement  
18 One to NUREG-0737, because of these rule changes.  
19 Additional updates of guidance were also warranted to  
20 address EP program lessons learned, in particular,  
21 issues involving security event-related response.

22           To provide guidance at the same time the  
23 final EP rule is published, the document consolidates  
24 several guidance changes for onsite Emergency  
25 Preparedness programs. Future updates of NUREG-0654

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1 and other guidance documents that I just mentioned, as  
2 appropriate, will include the information in the  
3 Interim Staff Guidance. These guidance changes were  
4 coordinated with FEMA, which is also addressing  
5 offsite EP program guidance changes in its documents.

6 There are eight specific rulemaking topics  
7 that are addressed in the document, and each topic is  
8 contained in its separate section. Within each  
9 section, we provided background information and a  
10 discussion of the issues that led to the rulemaking,  
11 along with guidance on the methods the NRC staff  
12 considers acceptable in implementing specific parts of  
13 the regulations. And, as mentioned earlier, the  
14 Interim Staff Guidance also provides guidance on  
15 integrating offsite response organization event  
16 response concepts with onsite EP programs.

17 As we talked about. Even though licensees  
18 are not required to adopt NIMS and ICS, licensee's  
19 state and local response organizations should make  
20 provisions to enable offsite resources to effectively  
21 support onsite response, particularly during hostile  
22 action. These provisions address capabilities,  
23 various capabilities, such as having primary and  
24 backup communication methods between the incident  
25 command post and licensee emergency response

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1 facilities, multiple notification pathways between  
2 licensees and offsite warning points, as well as  
3 offsite law enforcement agencies, and having  
4 appropriate liaisons from the licensee organization to  
5 interface with the incident command post personnel.

6 MEMBER SIEBER: Are NUREG-654 and 737  
7 reasonably up-to-date, or are they the way they were  
8 in the 1980s?

9 MR. TAILLEART: They're all of early 1908s  
10 vintage. There are a number of updates that are  
11 needed to each of those documents.

12 MEMBER SIEBER: That will be a significant  
13 amount of work. Do you plan to do that?

14 MR. TAILLEART: Yes.

15 MR. MILLER: Yes, that's a follow-on once  
16 we finish with this rulemaking and guidance effort  
17 here for the new EP rule, that's on our radar screen,  
18 on our planning screen.

19 MEMBER SIEBER: Pretty far out there I  
20 imagine.

21 MR. MILLER: It's going to be a heavy lift  
22 to accomplish that, so we've got a lot of work to do  
23 in the future to get that done. But it does need to  
24 be done.

25 MR. KAHLER: And to let you know, we've

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1 already laid the groundwork with FEMA. We've already  
2 developed a working group team with FEMA.

3 MEMBER SIEBER: Yes. FEMA Rep 1 is an  
4 offshoot of 654.

5 MR. KAHLER: That's correct. So, it's a  
6 joint document.

7 MEMBER SIEBER: Well, FEMA Rep 1 has been  
8 updated from time to time. Right?

9 MR. KAHLER: We added supplements to the  
10 documents.

11 MR. TAILLEART: Supplements to it, yes.

12 MEMBER SIEBER: Right.

13 MR. KAHLER: But the total revision of  
14 those 654 FEMA Rep 1, like I say, is in the works.  
15 We've laid some groundwork for it. We have already  
16 introduced it, our intent to industry and to offsite  
17 response organizations, and it's coming in the very  
18 near future.

19 MEMBER SIEBER: Okay. Thank you.

20 MR. TAILLEART: At this point, I'd like to  
21 go through an overview of the comment resolution  
22 process, and some of the more significant comments  
23 that we received on both the rule language, and the  
24 guidance documents, both during the public comment  
25 period, and during the ACRS Subcommittee review last

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1 year.

2 During the public comment period in 2009,  
3 the NRC received 95 submittals from which we  
4 identified approximately 700 individual comments on  
5 both the rule, and the guidance documents. In  
6 addition, FEMA received over 120 submittals which  
7 yielded about 2,300 comments on their guidance  
8 documents that they published in 2009.

9 We then binned the comments by rulemaking  
10 topic, and guidance document, and similar comments  
11 were in some cases combined, and there was a comment  
12 summary document that the staff generated, and that  
13 was provided to ACRS last year, as well.

14 A joint NRC-FEMA comment resolution team  
15 was formed to address comments that pertained to both  
16 onsite and offsite emergency planning. This effort  
17 was part of the overall strategy to insure alignment  
18 between our agencies on the content of both the final  
19 rule, and the development of the onsite and offsite  
20 guidance documents. So, with that, I'll go through  
21 each of the rulemaking topics, and any significant  
22 comments that we received, and the resolution of those  
23 comments.

24 Regarding on-shift multiple  
25 responsibilities, commentors questioned the need for

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1 the new regulation since Section 50.47(b)(2) already  
2 requires adequate on-shift staffing. The staff  
3 disagreed with these comments, since the present  
4 regulation is general in nature, and has resulted in  
5 inconsistent licensing implementation of on-shift  
6 staffing that has sometimes led to inadequate  
7 emergency response. The staff determined that a  
8 detailed analysis is necessary to demonstrate adequate  
9 on-shift staffing, which Bob discussed earlier. We  
10 feel that the new regulation will better insure that  
11 the duties assigned to on-shift staff are reasonable,  
12 and are not burdensome, or at least overly burdensome.

13 The staff made changes to the Interim  
14 Staff Guidance document in response to stakeholder  
15 comments requesting clarification of the events for  
16 which a detailed staffing analysis must be performed.

17 The Interim Staff Guidance was revised to specify  
18 that the detailed analysis must be performed for both  
19 the design-basis threat, as well as each design-basis  
20 accident presented in the site's updated final safety  
21 analysis report that would result in an emergency  
22 classification.

23 This guidance was also clarified to state  
24 that the detailed analysis should include all on-shift  
25 staff actions that must be performed in the period

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1 before the arrival of any augmented emergency response  
2 organization staff, as specified in the site's  
3 emergency plan. That could cover a period anywhere  
4 from 30 minutes to 60 minutes, or in some cases the  
5 augmented staff isn't slated to arrive until later  
6 than that, so we want to make sure that that time  
7 period is fully addressed in this analysis.

8 With respect to Emergency Action Levels  
9 for hostile action, comments were received that the  
10 proposed regulation would not allow for licensees to  
11 adopt Emergency Action Level schemes currently under  
12 NRC review. For example, NEI-0701, or any future  
13 Emergency Action Level schemes that would be endorsed  
14 by the NRC. The staff agreed with this comment and  
15 text in Section IV.B.2 of Appendix E was revised to  
16 address the comment.

17 For ERO augmentation and alternative  
18 facilities, the staff made several changes to the  
19 final rule in response to stakeholder comments, and we  
20 saw those changes in the slide earlier. One change  
21 that we did not talk about specifically earlier was  
22 the comment that in the proposed rule language, there  
23 was a phrase referring to threat or actual attack at  
24 the site. And the comment said that we should change  
25 the language to use the term "hostile action" instead

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1 of "attack" to be consistent with other rule language.

2 We agreed with that comment, and reworded the  
3 language so that now refers to hostile action.

4 Another commentor pointed out that the use  
5 of the parenthetical (or facilities) when referring to  
6 the alternative facility location, in other words,  
7 there could be more than one alternate facility  
8 designated for that function. It was unclear in the  
9 proposed rule language whether or not each facility  
10 must be capable of supporting all of the alternative  
11 facility functions if there was more than one facility  
12 so designated. The staff clarified that if licensees  
13 do use multiple locations as alternate facilities,  
14 then collectively, not individually, those facilities  
15 must have the necessary characteristics and  
16 capabilities.

17 The staff also made some revisions to the  
18 Interim Staff Guidance in response to comments, as  
19 well. We revised that document to state that  
20 licensees should consider providing event  
21 classification capability at the alternative facility.

22 We believe this is important so that the alternative  
23 facility could serve as a backup, for example, for the  
24 control room, if for some reason they were unable to  
25 perform that function at either that facility, or the

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1 emergency operations facility, or another emergency  
2 response facility that was not available during the  
3 event.

4 CHAIRMAN ABDEL-KHALIK: I assume that  
5 manning of the alternative facilities would be  
6 provided by off-shift people who are called.

7 MR. TAILLEART: That's correct.

8 CHAIRMAN ABDEL-KHALIK: Now, would Fitness  
9 for Duty requirements still be overriding in this  
10 situation?

11 MR. TAILLEART: There are still some  
12 Fitness for Duty considerations, yes. And, generally,  
13 when people are called off-shift, one of the questions  
14 that they're asked is, "Are you fit for duty before  
15 you respond?" And, in fact, what a lot of -- I would  
16 say most licensees do is they designate shifts of  
17 emergency responders to be on duty, even though  
18 they're offsite. And as part of that response, they  
19 have to maintain Fitness for Duty.

20 CHAIRMAN ABDEL-KHALIK: Okay.

21 MR. TAILLEART: So, there's always some  
22 minimum number of people who would be fit for duty.  
23 There may be additional, as well.

24 MEMBER SIEBER: I'm aware that that's a  
25 requirement at a number of sites. If you're on call,

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1 you have to be fit.

2 MR. TAILLEART: For the topic regarding  
3 licensee coordination with offsite response  
4 organizations, several commentors suggested that the  
5 NRC and nuclear power plant licensees should not, and  
6 do not have the authority to evaluate the  
7 appropriateness of offsite response organization  
8 staffing, training, or access to response resources.  
9 The staff agreed with the comment, and the proposed  
10 rule language was changed in the draft final rule by  
11 eliminating wording that could imply that the NRC has  
12 authority to evaluate the appropriateness of offsite  
13 response organization activities.

14 Several commentors suggested that the  
15 licensees will not be able to guarantee or insure the  
16 availability of local resources during hostile  
17 action, which was the wording in the proposed rule.  
18 They felt that licensees should only be responsible  
19 for reviewing agreements with these offsite agencies,  
20 and that the NRC should rely on existing requirements  
21 applicable to offsite response organization and state  
22 laws to insure adequate resources.

23 Again, the staff agreed with this comment,  
24 and the requirement in the draft final rule was  
25 changed to require licensees to identify and provide a

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1 description of the resources needed for a response to  
2 hostile action, and the assistance expected from those  
3 resources. Offsite officials will maintain the  
4 responsibility for and control the allocation of state  
5 and local resources through the use of mutual aid  
6 agreements, as is the case now.

7 For protection of onsite personnel during  
8 a hostile action event, we received comments that the  
9 proposed rule did not provide any specific protective  
10 actions that should be considered with regard to  
11 protection of onsite personnel. The staff agreed with  
12 the commentor; however, the intent was not to provide  
13 specific actions in the rule language, itself. While  
14 the final rule would require licensees to provide for  
15 the protection of onsite personnel, the range of  
16 protective actions will vary from site to site, and  
17 will be specific to each site. No change was made to  
18 the final rule or guidance documents in response to  
19 this comment.

20 Commentors also suggested that some  
21 licensees may utilize multiple procedures in response  
22 to security events rather than a single procedure, as  
23 was stated in the draft version of the Interim Staff  
24 Guidance. Again, the staff agreed that for many sites,  
25 multiple procedures will address licensee response

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1 actions for these types of events. They may be  
2 written in an event-specific format, and each  
3 procedure may describe the protective actions to be  
4 taken for that specific type of event, so the guidance  
5 was modified to clarify the intention of the guidance  
6 document.

7 MEMBER ARMIJO: Could you expand a little  
8 bit on that, what kind of multiple procedures would  
9 that be to protect onsite personnel?

10 MR. TAILLEART: It could be in a number of  
11 procedures. For example, it could be in an operations  
12 procedure that describes your initial actions to take  
13 during a security or hostile action type event. And  
14 our initial approach was that for most licensees we  
15 felt that those actions would be described in probably  
16 one procedure. And as part of that procedure, it  
17 would include here are the protective actions that  
18 site personnel would be directed to take during  
19 hostile action events.

20 The feedback we got was yes, for some  
21 licensees that may be the case. There would be one  
22 procedure that would describe actions to take for any  
23 type of security event. But other licensees said no,  
24 that's not the case, that they had -- for this type  
25 of event, they had a specific procedure. For another

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1 type of event, they would go to a different procedure,  
2 and each one of those would then provide the  
3 protective action information for site personnel.

4 So, we just clarified the guidance that --  
5 our intent wasn't that licensees would have to take,  
6 if they had multiple procedures, they would now have  
7 to put this all into one procedure. If they had it in  
8 multiple procedures, that's fine, as long as it  
9 addressed onsite protective actions.

10 Regarding challenging drills and  
11 exercises, there were several comments suggesting that  
12 the length of the exercise planning cycle be increased  
13 to allow more time to conduct the new required  
14 scenario variations and exercise elements. And this  
15 would also allow more flexibility in selection of  
16 these scenario elements and when to conduct the  
17 exercises that incorporate those elements.

18 The staff agreed with those comments, and  
19 increased the exercise planning cycle from six to  
20 eight years. This would then allow the ability to  
21 spread these scenario elements over four biannual  
22 exercises, rather than having to do all the elements  
23 within three exercises in a six-year cycle.

24 There were several comments regarding the  
25 use of the minimal or no radiological release

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1 scenarios, both supporting and opposing this proposed  
2 new requirement. Again, this was an element that we  
3 felt was important to increase the variability of  
4 scenarios, and make them more realistic.

5 The staff has retained the requirement,  
6 but offsite response organizations have several  
7 options, including not participating in the licensee  
8 biannual exercise, and conducting a separate exercise,  
9 if they so desire. Expanding upon the exercise  
10 scenario through controller injects, or mini scenarios  
11 to drive the offsite organizations to perform actions  
12 if a radiological release was occurring, or  
13 participate in the biannual exercise, and then FEMA  
14 would evaluate the offsite response objectives not  
15 demonstrated in that exercise through other means,  
16 such as plan reviews, staff assistance visits, or some  
17 other means available to FEMA.

18 Commentors suggested that the hostile  
19 action and rapidly escalating elements of scenarios  
20 should be conducted more often than once per exercise  
21 planning cycle. Other commentors suggested that the  
22 frequency for ingestion pathway exercises be  
23 maintained within the planning cycle. Currently,  
24 that's set at six years.

25 The staff did not agree with these

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1 comments. However, we did note that many licensees  
2 will likely practice these elements of drills and  
3 exercises that aren't evaluated by NRC or FEMA to  
4 insure a high level of preparedness. So, even though  
5 the minimum requirement is to only demonstrate a  
6 number of them once per cycle, if licensees and  
7 offsite organizations choose to do that more often in  
8 other drills that they conduct, certainly, they're  
9 free to do so.

10 For backup means for alert notification  
11 systems, several commentors suggested that the NRC  
12 should publish a design specification for backup  
13 methods to the primary alert notification system, and  
14 this would expand upon current methods that are  
15 commonly used, which typically involve rad alerting as  
16 the backup at least to the alerting portion of the  
17 alert notification system.

18 The staff agreed that such a specification  
19 could be useful, and is open to receiving such a  
20 proposal. However, FEMA is actually the agency that's  
21 responsible for reviewing and approving alert  
22 notification systems, including the backup means.

23 MEMBER SIEBER: Right.

24 MR. TAILLEART: It's our understanding  
25 that the industry may develop and submit such a

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1 specification for FEMA consideration.

2 MEMBER SIEBER: Actually, the FEMA rule  
3 right now does not require use of backup batteries,  
4 for example.

5 MR. TAILLEART: That's correct.

6 MEMBER SIEBER: And unless required by  
7 state or local authorities, and there's only one plant  
8 where that's been passed as a state law to require  
9 that.

10 MR. TAILLEART: Right.

11 MEMBER SIEBER: So, the FEMA regulation  
12 accommodates basically any scenario that's out there,  
13 as long as it's adequate from a notification  
14 standpoint.

15 MR. TAILLEART: Right. And that goes to  
16 the last bullet on this slide, which is, as Dr. Sieber  
17 stated, there's been no requirement for the use of  
18 backup batteries. And the comments we received also  
19 propose that if backup batteries were installed for  
20 sirens, that that would be considered an acceptable  
21 backup method. And the staff's position is that  
22 although backup power for sirens we believe is a good  
23 initiative, that in and of itself would not be  
24 adequate to insure that the entire system would be  
25 able to function if there was a failure in some other

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1 part of the activation system for the sirens. There  
2 could be a radio frequency, or transmitter issue, or  
3 some other problem, besides lack of power to the  
4 sirens, themselves.

5 MEMBER SIEBER: Yes. Your requirement is  
6 not design-based, it's performance-based.

7 MR. TAILLEART: Right. Regarding emergency  
8 declaration timeliness, the staff did implement a  
9 suggested change to the rule language to clarify when  
10 the declaration would be made. The proposed language  
11 could have been interpreted as stopping the  
12 declaration process or clock when the first emergency  
13 action level threshold was met, rather than when the  
14 correct emergency classification level was identified,  
15 which was really the staff's original intent. The  
16 staff also made changes to the Interim Staff Guidance  
17 document based on a number of suggestions provided  
18 during the public comment period. And, also to  
19 address some apparent misunderstandings reflected in  
20 some of these comments.

21 Among the more significant changes were  
22 providing additional guidance on when the timeliness  
23 clock starts, and when it stops to insure the staff's  
24 intent was clear. Also, providing additional guidance  
25 to address who the plant operator was, as referred to

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1 in the regulation.

2 The guidance does allow some degree of  
3 flexibility on who the plant operator is, so that the  
4 term encompasses person who may perform  
5 classifications outside of the control room. And,  
6 originally, the term "plant operator" was directed to  
7 the person in the control room who makes the  
8 classification, but there are personnel in other  
9 facilities, for example, the technical support center,  
10 who may also perform that function.

11 MEMBER SIEBER: Right.

12 MR. TAILLEART: We wanted to make it clear  
13 that the term "plant operator" refers to anyone who's  
14 designated as the person responsible for performing  
15 classification.

16 For emergency operations facilities,  
17 several commentors objected to the exemptions in  
18 Section IV.E.8.E of the Appendix E that would allow  
19 some licensees to continue using existing EOFs that  
20 are located more than 25 miles away from the site.  
21 The commentors stated that having a nearby EOF is  
22 important to facilitate coordination of emergency  
23 response. For example, one of the commentors  
24 highlighted the importance of access to real-time  
25 information from a plant, and also face-to-face

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1 interaction between decision makers as the benefits of  
2 having the EOF close to the site.

3 The staff disagreed with these particular  
4 comments. We believe that the effectiveness of EOFs  
5 located more than 25 miles from sites has been  
6 adequately demonstrated in drills, exercises, and  
7 actual events over a period of many years.

8 MEMBER SIEBER: I would point out that the  
9 face-to-face scenario was important in the original  
10 drafting of 0654 based on the TMI experience.

11 MR. TAILLEART: Right.

12 MEMBER SIEBER: And that persisted for a  
13 long time. And, I guess, it's a matter of opinion,  
14 and not a technical issue, but I happen to one of the  
15 proponents of that.

16 MR. TAILLEART: Well, one of the  
17 provisions that was included in exemptions to the  
18 distance criteria in the past was if an EOF is going  
19 to be located at some distance from a site more than  
20 25 miles, that there be provisions made to locate, or  
21 have a facility closer to the site --

22 MEMBER SIEBER: Right.

23 MR. TAILLEART: -- where NRC and other  
24 offsite officials could go, if they so desired, to  
25 facilitate this face-to-face coordination with

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1 responders at the site itself. And we do continue in  
2 the rule language provisions for that type of  
3 facility, so that even if there is a remotely located  
4 EOF, if offsite officials do wish to locate closer to  
5 the site, they have a place to go, and they can then  
6 interface face-to-face with the responders at the  
7 site.

8 We did receive comments objecting to the  
9 provisions allowing for the use of consolidated EOFs.

10 Commentors felt that having a single EOF for each  
11 site was more beneficial because of site-by-site  
12 differences in reactor design, and the age of the  
13 units, and in the surrounding communities.

14 Again, the staff disagreed. We feel that  
15 the effectiveness of these types of facilities has  
16 also been demonstrated in numerous cases during  
17 drills, exercises, and actual events for several  
18 years, and they perform very well. As Bob mentioned  
19 earlier, though, there are some important  
20 considerations that need to be accounted for by  
21 licensees if they do wish to consolidate a facility,  
22 particularly if it's going to be at a very remote  
23 location from the site.

24 For evacuation times and updating, we did  
25 receive a number of comments that the ETE update

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1 threshold should not be based on a generic population  
2 increase criterion. In the proposed rule, we had  
3 stated that a 10 percent change, and in particular, a  
4 10 percent increase in population should be the  
5 trigger for having to do an update to an ETE analysis.

6 The staff agreed that a generic population  
7 criteria was not the best approach, and we did revise  
8 the threshold, as Bob described earlier, that now  
9 we're looking at a population increase that causes  
10 basically a significant change into the ETE values  
11 themselves, not just the population increase by  
12 itself.

13 One of the other comments that we received  
14 was on the implementation period for performing ETE  
15 updates. We had originally proposed that once the  
16 Census data was available, or it was determined that  
17 the ETE threshold was met for performing an update,  
18 that that be done within 180 days. And the commentors  
19 stated that that was not a realistic time frame in  
20 which to gather the data, have the ETE analysis  
21 performed, review the results, and then submit that  
22 for NRC review. That was partly based on the limited  
23 number of commercial contractors that are available to  
24 perform these types of analyses. The staff did agree  
25 with the comment, and we have proposed that the

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1 implementation period for performing the update be  
2 extended to 365 days.

3 As we discussed earlier, there were a  
4 number of comments during the ACRS Subcommittee  
5 meeting last November regarding the guidance in the  
6 NUREG/CR document for performing ETE updates. And I  
7 know some of these we've already discussed, so I'm not  
8 going to cover those again. I'm not sure, though, that  
9 we talked about the comment which questioned why the  
10 guidance states that the shadow evacuation of the  
11 transient population in the area 10 to 15 miles from a  
12 plant does not need to be accounted for when  
13 calculating ETE values.

14 There were several factors that provide  
15 the basis for excluding this transient population in  
16 the analysis, and I'll just go through some of those  
17 factors real quickly. The Emergency Planning Zones  
18 for many sites have already been extended beyond 10  
19 miles to include areas with higher population  
20 densities, where it's determined that additional  
21 planning and considerations for evacuation are  
22 warranted.

23 There are many special events in  
24 facilities, such as a sports stadium or amusement park  
25 that may be located in the area that is 10 to 15 miles

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1 from a site which attract very large transient  
2 populations, but these areas are very localized. They  
3 tend to have a typical higher vehicle occupancy rate,  
4 and they also have relatively short mobilization  
5 times.

6 And then, finally, there are a number of  
7 events which involve large transient populations which  
8 are often at night or on weekends, and these typically  
9 have less traffic, and less impact on overall ETE  
10 values. So, even though we feel that it's justified  
11 not to include the transient population in the 10 to  
12 15-mile area, we do state that ETEs should take into  
13 account 20 percent of the permanent resident  
14 population in these areas as part of the shadow  
15 evacuation effect. In other words, recognize that  
16 even though residents out to the 10 mile limit of the  
17 Emergency Planning Zone may be directed to evacuate,  
18 there's a high likelihood that residents beyond the 10  
19 miles, particularly in that 10-15 mile region may also  
20 evacuate, as well. We think by accounting for 20  
21 percent of the resident population, that that would  
22 adequately reflect the impact of the shadow  
23 evacuation.

24 We talked about the severe natural  
25 hazards, so I won't go through that again. There was

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1 a comment from the Subcommittee meeting last year with  
2 regards to determining number of scenarios for which  
3 ETEs should be calculated. And these scenarios involve  
4 different times of the day, different days of the  
5 week, and different weather conditions.

6 The existing ETEs do account for a number  
7 of different scenarios. The specific comment had to  
8 do with adverse weather conditions during nighttime  
9 hours. As part of the background or the development of  
10 the guidance for developing ETEs, a number of existing  
11 ETEs, or existing ETEs for a number of sites were  
12 analyzed to understand those scenarios that had the  
13 greatest impact on evacuation times.

14 What was found was that the relatively  
15 small set of scenarios provided in the guidance, we  
16 believe, provides an adequate information set to  
17 licensees and offsite emergency response officials to  
18 make informed decisions regarding evacuation without  
19 having to consider a larger number of scenarios and  
20 ETE values. And that providing additional ETEs would  
21 not provide any significant useful information.

22 The review of the existing ETEs also  
23 factored in the decision of whether to include this  
24 evening adverse weather scenario as one of the  
25 scenarios for which ETEs should be calculated.

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1 Historically, this type of scenario has not been  
2 included in ETE analyses because the evacuation time  
3 is bounded by the ETEs for the normal nighttime  
4 weather, and the adverse daytime weather scenarios.  
5 So, by adding this additional scenario, we did not  
6 believe it would provide any additional useful  
7 information for the decision makers.

8 MEMBER ARMIJO: I guess I don't understand  
9 that, that if you have really bad weather, and you're  
10 doing the evacuation at night, it's equivalent to  
11 doing an evacuation in the daytime with really bad  
12 weather. Is that your basis for --

13 MR. TAILLEART: Right. That it's already  
14 bounded by the daytime adverse weather scenario, and  
15 also the -- it would be somewhere between the  
16 nighttime scenario under good weather, and the daytime  
17 adverse weather scenario.

18 MEMBER ARMIJO: I guess that doesn't  
19 compute with me. I think bad weather at night, it's  
20 harder to deal with, than bad weather in the day, at  
21 least for me.

22 MR. JONES: This is Joe Jones from Sandia,  
23 again. One of the offsetting factors of that, that's  
24 a good insight, is that during the day we have a  
25 greater vehicle population on the road, so those times

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1 tend to be longer, and when you add adverse weather,  
2 you end up with an even longer ETE. So, a nighttime  
3 adverse weather condition is then bounded by that  
4 scenario. You have fewer vehicles on the road to  
5 begin with.

6 MEMBER RYAN: So, it's really the traffic  
7 flow of day versus night, not the --

8 MR. TAILLEART: Exactly.

9 MEMBER RYAN: -- light or dark.

10 MR. TAILLEART: Correct.

11 MEMBER SIEBER: Okay. I think we've  
12 already covered the change process adequately. Why  
13 don't we move to the next steps slide.

14 MR. TAILLEART: Okay. So, to conclude our  
15 presentation to the Committee, I want to present the  
16 current and future activities that the staff has  
17 planned with regard to the rulemaking project. We  
18 continue to assess the impact of the rule  
19 implementation, the dates, and the impact of those  
20 dates on licensees, applicants, and the offsite  
21 agencies, and to review the impact with these groups.

22 Presently, in conjunction with FEMA, the  
23 staff has attended and are continuing to attend  
24 several meetings with stakeholders where we present  
25 the draft rule language, and the significant changes

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1 that were made as a result of the public comments in  
2 order to keep these stakeholders informed of the  
3 rulemaking status and activities. We got some good  
4 feedback from that. There's a great appreciation for  
5 the additional information on what we did with  
6 stakeholder comments.

7 NRC and FEMA staff also continue to  
8 evaluate the impact of the new requirements and  
9 guidance on the internal stakeholders, that is, the  
10 NRC and FEMA staffs, including the development of new  
11 inspection procedures, training of the NRC inspectors,  
12 and training of the FEMA evaluators. Of course, we  
13 can't complete some of that, we can't finalize that  
14 until we know exactly how the rule is going to come  
15 out, but we are working on what we can in those areas.

16 The next major steps are the submittal of  
17 the Emergency Preparedness final rule package to the  
18 Executive Director for Operations, and that's  
19 scheduled for no later than March 25<sup>th</sup> of this year,  
20 and then to the Commission. Following the publication  
21 of the Emergency Preparedness final rule and guidance,  
22 NRC and FEMA will be conducting public information  
23 workshops. Currently, NRC and FEMA anticipate that  
24 the Emergency Preparedness final rule, the NRC  
25 guidance, and the supporting FEMA documents will be

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1 published in the second half of 2011. And, of course,  
2 that's pending Commission and FEMA final approval.

3 And that concludes our presentation.  
4 Thank you very much.

5 MEMBER SIEBER: Okay. Do any of the  
6 Members have any additional questions that they would  
7 like to ask the staff? If none, Mr. Chairman, I would  
8 like to turn it back to you within 30 seconds of the  
9 allotted time.

10 CHAIRMAN ABDEL-KHALIK: Thank you very  
11 much for a very informative presentation. At this  
12 time, our schedule calls for us to take a 15-minute  
13 break. We will reconvene at 10:45.

14 (Whereupon, the proceedings went off the  
15 record at 10:32:00 a.m., and went back on the record  
16 at 10:48:15 a.m.)

17 CHAIRMAN ABDEL-KHALIK: We're back in  
18 session. We will now proceed to the next item on the  
19 agenda, Staff Assessment of the RAMONA5-FA Code.

20 Our Power Uprate Subcommittee held a  
21 meeting on this subject on November 17<sup>th</sup>, 2010.  
22 During that meeting, both AREVA and the staff  
23 discussed the use of the RAMONA5-FA Code to evaluate  
24 the cycle-specific DIVOM curve used to generate the  
25 set points for the detect and suppress stability

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1 option 3 for operation of BWRs in the expanded flow  
2 window operating domains.

3 The main objective of the review was to  
4 determine whether the 10 percent penalty imposed by  
5 the staff on the DIVOM slope calculated by RAMONA5-FA  
6 can be removed. That penalty was imposed by the staff  
7 following the evaluation of AREVA's enhanced option 3  
8 methodology performed nearly three years ago.

9 As indicated in the opening remarks this  
10 morning, portions of this meeting may be closed to the  
11 public to protect material that is proprietary to  
12 AREVA. Also, we have received a request from a member  
13 of the public, Mr. Robert Leyse, to make a statement  
14 at today's meeting. We have allotted five minutes for  
15 Mr. Leyse to make his statement during the open part  
16 of the meeting beginning at 12:10. He will be  
17 prompted at that time.

18 The subject of today's meeting is quite  
19 extensive, so without further delay, I'd like to call  
20 on Ms. Holly Cruz of the NRC to bring the staff's  
21 presentation. Ms. Cruz.

22 MS. CRUZ: Thank you. Again, my name is  
23 Holly Cruz. I'm the AREVA Project Manager for the  
24 Office of Nuclear Reactor Regulation, and presenting  
25 the AREVA Topical Report EMF-3028P RAMONA5-FA, a

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1 computer program for BWR transient analysis in the  
2 time domain on behalf of the NRC, DR. Tai Huang from  
3 the Division of Safety Systems, and Dr. Jose March-  
4 Leuba from Oak Ridge National Labs.

5 DR. HUANG: Okay. I'm Tai Huang from  
6 Reactor System Branch, and try to summarize this  
7 review process. Back in November 14, 2007, and then  
8 December 6, 2007, we have these two Topical Report  
9 presented to the Committee. And then at that time we  
10 have some comment from the Committee, so we followed  
11 that. And then back to November 17 Subcommittee  
12 meeting this year, and we have another comment from  
13 the ACRS. And then we tried to address those. And  
14 then in 2007 review, there are three items to be  
15 result. One is bypass boiling. Second will be the  
16 oscillation dry out, and rewet mechanisms. And number  
17 three will be RAMONA5-FA Code review.

18 And after this December 6, 2007, the staff  
19 followed that, and send out the question to the AREVA,  
20 try to resolve those issues, bypass boiling, and the  
21 CPR prediction, rewet issue, and the response in April  
22 4<sup>th</sup>, and the staff review their response. And we have  
23 issued the SER for cycle-specific DIVOM methodology  
24 May 21<sup>st</sup>, 2008. And then 10 percent penalty on that  
25 SER, and we closed the bypass boiling issue, and

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1 closed the oscillation dry out, rewet issue.

2 And then today, the purpose of this  
3 presentation is to try to complete a review on the  
4 RAMONA5-FA, and to remove the 10 percent penalty. And  
5 then following this, November 17 ACRS Subcommittee  
6 meeting, some question raise up. And one of them is  
7 the treatment of the varying flow area. Second would  
8 be the treatment of system pressure and rate of  
9 evaporation, and documentation issue. And AREVA has  
10 into this documentation, issue a revised copy of the  
11 RAMONA5-FA manual, and will be EMF-3028(P) Volume 2,  
12 Revision 4 in January, 2011. And all correction were  
13 related to documentation, and those are caused by the  
14 cut and paste error. And they find out that there are  
15 no error propagated to the code, so that's been  
16 important point. And the detail of this review will  
17 be presented by AREVA, and by the staff following the  
18 closed session.

19 CHAIRMAN ABDEL-KHALIK: So, at this time,  
20 I guess we will move to a closed session, and AREVA  
21 will start their presentation.

22 (Whereupon, the proceedings went off the  
23 record in the open session at 10:54:12 a.m., and went  
24 back on the record to begin closed session.)

25 MR. LEYSE: Hello.

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1 CHAIRMAN ABDEL-KHALIK: Mr. Leyse?

2 MR. LEYSE: Yes, can you hear me?

3 CHAIRMAN ABDEL-KHALIK: Yes, we can. You  
4 have five minutes to make your remarks.

5 MR. LEYSE: Well, do you want me to start  
6 now?

7 CHAIRMAN ABDEL-KHALIK: Yes.

8 MR. LEYSE: Okay. It'll take me 10  
9 seconds to walk to my notes, and we'll be going. I'm  
10 Bob Leyse, I have five minutes starting with slide  
11 one. On December 2, 2010, I talked full ACRS, that  
12 2200 degrees Fahrenheit is too high as a PCT to insure  
13 that thermal runaway would not occur in a LOCA. Today  
14 I'll focus on two items, RBHT at Penn State, and the  
15 user need request Leeds to Sheron, April 26, 2010,  
16 which is a user need request for a technical analysis  
17 of PRM 5093 docketed November 17<sup>th</sup>, 2009.

18 Starting with RBHT, RBHT has apparently  
19 explored the relatively low temperature regions of  
20 LOCAs utilizing its 49-rod full-length assembly with  
21 Inconel-clad heaters. Very likely millions of dollars  
22 have been spent over the 13-year activity.

23 The most recent public discussion of RBHT  
24 was at the ACRS Thermal Hydraulic Phenomena  
25 Subcommittee, Monday, October 18<sup>th</sup>, 2010. Of course,

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1 the general uselessness of RBHT is due to its lack of  
2 data with zirconium alloy cladding in the region  
3 greater than 1800 degrees Fahrenheit. That is  
4 documented in plant licenses.

5 NRC has avoided exploring this region with  
6 multi-rod assemblies having zirconium alloy cladding.

7 NRC outrageously has promoted RBHT at Penn State as  
8 highly applicable to TRACE and licensing. However,  
9 their documents are generally not available to anyone  
10 outside of NRC and its contractors.

11 ACRS Consultant Wallis may have had  
12 access, because at the cited meeting of the Thermal  
13 Hydraulic Phenomena Subcommittee he observes, "Are we  
14 going to hear about this later, because the only thing  
15 I've seen from the Penn State work was some sort of  
16 crude results, but they measured all kinds of stuff."

17 Next, I'll move to the user needs request,  
18 and I'll cite a tie-in to Penn State's RBHT. In the  
19 user need request Leeds to Sheron April 26, 2010,  
20 Leeds refers to the Technical Safety Analysis dated  
21 April 29<sup>th</sup>, 2004, of my PRM-50-76 documented May 8<sup>th</sup>,  
22 2002, as "outstanding technical analysis." However,  
23 the fact reveal that NRC's Technical Safety Analysis  
24 of PRM-50-76 is most certainly not an outstanding  
25 technical analysis.

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1 Referring to RBHT, the Technical Safety  
2 Analysis of April 29<sup>th</sup>, 2004 reports, "Current  
3 programs at Pennsylvania State University are far more  
4 cost-effective." So, in 2004, NRC staff was praising  
5 RBHT, but more than six years later expert consultant  
6 Wallis reported, "Penn State work has some very sort  
7 of crude results."

8 Now, since RBHT has only used Inconel-clad  
9 bundles, it is absurd that Leeds lauds the 2004  
10 Technical Safety Analysis of PRM-50-76 as a  
11 "outstanding Technical Analysis." Of course, there is  
12 much more documentation of the defects in RBHT, and  
13 the user need letter that I am covering in five  
14 minutes.

15 Slide two has blue and black type. The  
16 blue type is what the Thermal Hydraulic Subcommittee  
17 was told on October 10<sup>th</sup> via its list of reports that  
18 are dated 2008. The black type reveals that none of  
19 the reports have been released by NRC, and three of  
20 the reports don't even have an assigned date of  
21 release.

22 I still have over one minute. It's not on  
23 either slide, but in the referenced meeting of the  
24 Thermal Hydraulic Subcommittee, there was a lot of  
25 discussion of the impact of various grid features,

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1 such as mixing veins on test results. However, if  
2 zircalloy grids have been used for comparison with  
3 Inconel, and if the tests were conducted at realistic  
4 temperatures depicted in actual plant licenses, the  
5 impact on test results would have been far greater  
6 than the relatively minor impact of mixing veins.

7 Finally, I should not have been restricted  
8 to five minutes, more later on that. That's it.

9 CHAIRMAN ABDEL-KHALIK: Thank you, Mr.  
10 Leyse. Are there any questions for Mr. Leyse? Well,  
11 hearing none, thank you. Are there any additional  
12 questions to either the staff, or to AREVA considering  
13 the fact that this is an open session? Hearing none,  
14 we will recess at this time. Our schedule calls for  
15 us to go to a lunch recess. We will reconvene at  
16 1:15, and at that point we will be off the record.

17 (Whereupon, the proceedings went off the  
18 record at 12:11 p.m.)  
19  
20  
21  
22  
23  
24  
25

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# **EMERGENCY PREPAREDNESS FINAL RULE AND GUIDANCE**

**NRC Staff Presentation  
for ACRS Meeting**

**January 14, 2011**

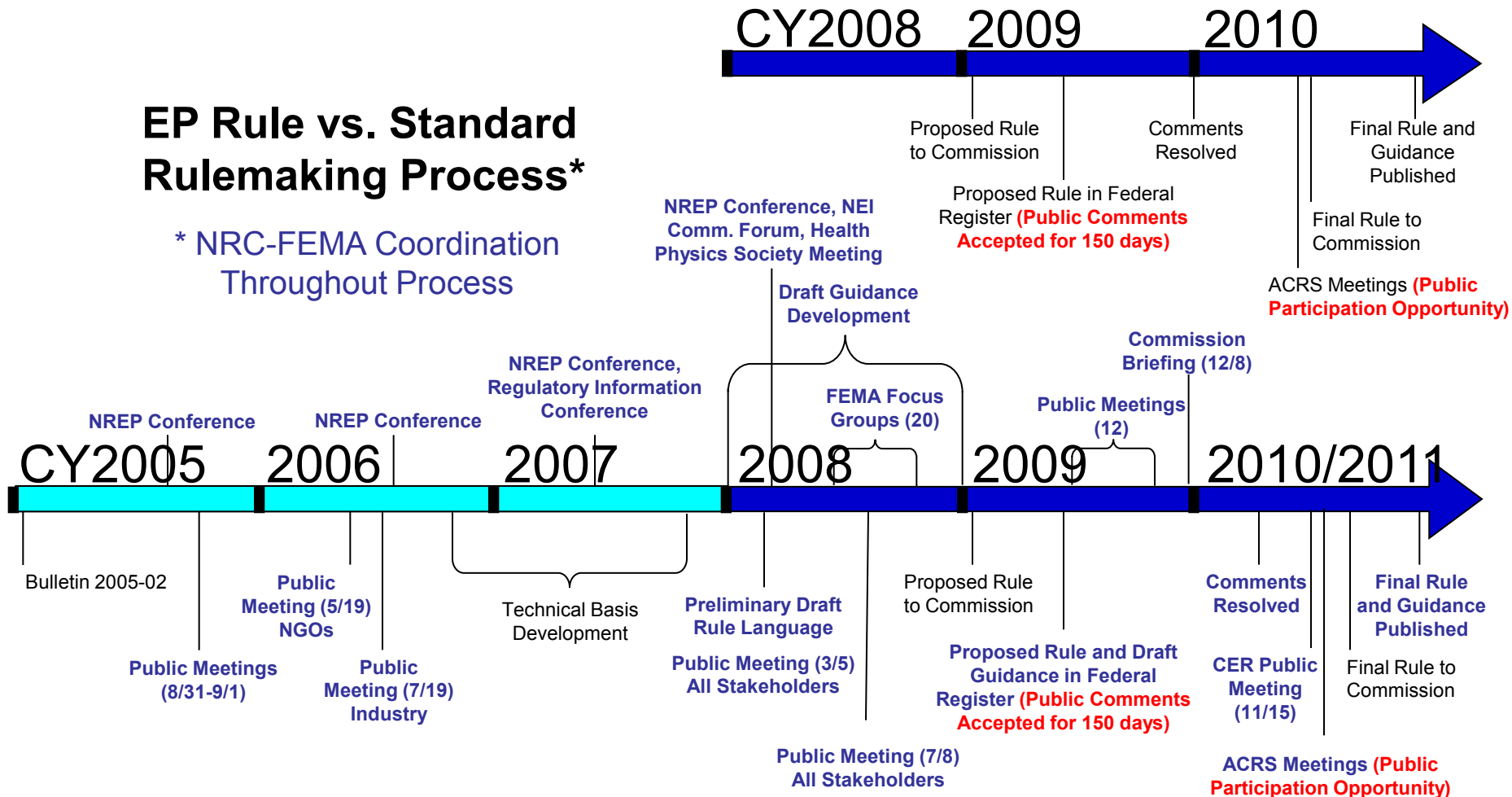
# TOPICS

- Emergency Preparedness Rule Background
- Emergency Preparedness Rule Topics
- Requests for Input
- Guidance Documents
- Resolution of Public Comments

# EP RULE BACKGROUND

## EP Rule vs. Standard Rulemaking Process\*

\* NRC-FEMA Coordination Throughout Process



# EP RULE SUMMARY

#	RULEMAKING TOPIC	GUIDANCE
1	On-Shift Multiple Responsibilities	NSIR/DPR-ISG-01
2	Emergency Action Levels for Hostile Action	NEI 99-01, Rev. 5
3	Emergency Response Organization Augmentation and Alternative Facilities	NSIR/DPR-ISG-01
4	Licensee Coordination with Offsite Response Organizations	NSIR/DPR-ISG-01
5	Protection for Onsite Personnel	NSIR/DPR-ISG-01
6	Challenging Drills and Exercises	NSIR/DPR-ISG-01
7	Backup Means for Alert and Notification Systems	NSIR/DPR-ISG-01
8	Emergency Declaration Timeliness	NSIR/DPR-ISG-01
9	Emergency Operations Facility – Performance-Based Approach	NSIR/DPR-ISG-01
10	Evacuation Time Estimate Updating	NUREG/CR-7002
11	Amended Emergency Plan Change Process	Reg. Guide 1.219
12	Removal of Completed One-Time Requirements	N/A

# **EP RULEMAKING TOPIC #1**

- On-Shift Multiple Responsibilities
  - 10 CFR Part 50, Appendix E, Section IV.A.9 (new)
  - On-Shift Staffing Analysis
    - Adequate staffing
    - Multiple responsibilities
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #2**

- Emergency Action Levels for Hostile Action
  - 10 CFR Part 50, Appendix E, Section IV.B
  - Incorporate Hostile Action Events
  - NRC Bulletin 2005-02
  - NEI 99-01, Revision 5

# APPENDIX E, SECTION IV.B.2

## Draft Final Rule:

A licensee's revision to its emergency action level scheme ~~must be submitted as specified in § 50.4 for NRC approval before implementation may not be implemented without prior approval by the NRC~~ if the licensee is changing its entire emergency action level scheme to the most current NRC-approved emergency action level scheme applicable to the design of the licensee's reactor. **A licensee desiring to make such an emergency action level scheme change shall submit an application for an amendment to its license.** Licensees shall follow the change process in § 50.54(q) for all other emergency action level changes.



## **EP RULEMAKING TOPIC #3**

- Emergency Response Organization Augmentation and Alternative Facilities
  - 10 CFR Part 50, Appendix E, Section IV.E.8.d (new)
  - ERO Augmentation During Hostile Action
  - Alternative Facility Characteristics
  - NSIR/DPR-ISG-01 Interim Staff Guidance

# APPENDIX E, SECTION IV.E.8.d

## Revised Draft Final Rule:

For nuclear power reactor licensees, an alternative facility (or facilities) **that would be accessible even if the site is under threat of or experiencing hostile action**, to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: ~~accessibility even if the site is under threat of a, or during an actual, hostile action; the capability for~~ communication ~~links~~ with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action. ~~The alternative facility (or facilities) will also be equipped with general plant drawings and procedures, telephones, and computer links to the site;~~

## **EP RULEMAKING TOPIC #4**

- Licensee Coordination with Offsite Response Organizations
  - 10 CFR Part 50, Appendix E, Section IV.A.7
  - Resource Needs During Hostile Action
  - Identification of Offsite Resources
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #5**

- **Protection for Onsite Personnel**
  - 10 CFR Part 50, Appendix E, Section IV.I (new)
  - Ability of Site Personnel to:
    - Perform reactor shutdown
    - Implement emergency plan
  - Provide Protection for Non-Responders
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #6**

- Challenging Drills and Exercises
  - 10 CFR Part 50, Appendix E, Section IV.F.2
  - Hostile Action-Based Exercises
  - Predictability and Preconditioning
    - No Release/Minimal Release
    - Rapidly Escalating Scenarios
  - Submittal of Scenarios
  - Remedial Exercises
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #7**

- Backup Means for Alert and Notification Systems
  - 10 CFR Part 50, Appendix E, Section IV.D.3
  - Alert and Notification Functions
  - Flexibility in Methods
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #8**

- **Emergency Declaration Timeliness**
  - 10 CFR Part 50, Appendix E, Section IV.C.2 (new)
  - Capability to Declare an Emergency in 15 Minutes
  - Prompt Declaration
  - NSIR/DPR-ISG-01 Interim Staff Guidance

## **EP RULEMAKING TOPIC #9**

- Emergency Operations Facility –  
Performance-Based Approach
  - 10 CFR Part 50, Appendix E, Section IV.E.8
  - Distance from Plant Site
  - Performance Criteria
  - NSIR/DPR-ISG-01 Interim Staff Guidance



# **EP RULEMAKING TOPIC #10**

- **Evacuation Time Estimate Updating**
  - 10 CFR 50.47(b)(10)  
10 CFR Part 50, Appendix E, Section IV
  - Periodic Updates
  - Prior NRC Review and Confirmation
  - NUREG/CR-7002

# **EP RULEMAKING TOPIC #11**

- Amended Emergency Plan Change Process
  - 10 CFR 50.54(q)
  - Method for Determining Reduction in Effectiveness
  - License Amendment Process
  - Regulatory Guide 1.219

## **EP RULEMAKING TOPIC #12**

- Removal of Completed One-Time Requirements
  - 10 CFR 50.54(r)
  - 10 CFR 50.54(s)(1)
  - 10 CFR 50.54(s)(2)(i)
  - 10 CFR 50.54(u)

# REQUESTS FOR STAKEHOLDER INPUT

#	INPUT TOPIC	DISPOSITION
1	Inclusion of National Incident Management System (NIMS)/Incident Command System (ICS)	Not Incorporated
2	Shift Staffing and Augmentation	Not Incorporated
3	Effective Date for COL/ESP Applicants	Deferred Compliance
4	Implementation Dates	Dates Modified
5-7	Non-Power Reactor Licensees <ul style="list-style-type: none"><li>• staffing analysis</li><li>• emergency declaration timeliness</li><li>• hostile action emergency action levels</li></ul>	Not Incorporated

# **BACKGROUND AND SUMMARY OF GUIDANCE DOCUMENTS**

- NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimate Studies”
- Regulatory Guide 1.219, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors”
- NSIR/DPR-ISG-01, “Interim Staff Guidance Emergency Planning for Nuclear Power Plants”

# **GUIDANCE DOCUMENTS**

- NUREG/CR-7002, “Criteria for Development of Evacuation Time Estimate Studies”
  - Development of Evacuation Time Estimate Studies
  - Evacuation Time Estimates for Staged Evacuation Protective Action
  - Evaluation Criteria for Reviewers

# **GUIDANCE DOCUMENTS**

- Regulatory Guide 1.219, “Guidance on Making Changes to Emergency Plans for Nuclear Power Reactors”
  - Explanation of Definitions
  - Explanation of Emergency Planning Functions
  - Examples of Changes Requiring/Not Requiring Prior NRC Approval
  - Guidance on Change Submittals, Documentation, and Record Retention

# **GUIDANCE DOCUMENTS**

- NSIR/DPR-ISG-01, “Interim Staff Guidance Emergency Planning for Nuclear Power Plants”
  - Guidance on Remaining Topics
  - Integration of Offsite Response with Onsite EP Programs
  - Future Incorporation into NUREG-0654



# COMMENT RESOLUTION OVERVIEW

- Comment Resolution Process
- Emergency Preparedness Rulemaking Working Group
- NRC-FEMA Joint Comment Resolution Team

# RESOLUTION OF COMMENTS

- On-Shift Multiple Responsibilities
  - Types of Events to Be Analyzed
  - Time Period Covered by Analysis

# RESOLUTION OF COMMENTS

- Emergency Action Levels for Hostile Action
  - Use of Future Emergency Action Level Schemes

# **RESOLUTION OF COMMENTS**

- Emergency Response Organization Augmentation and Alternative Facilities
  - Reference to “Hostile Action”
  - Multiple Locations for Alternative Facilities
  - Event Classification Capability

# **RESOLUTION OF COMMENTS**

- Licensee Coordination with Offsite Response Organizations
  - Identification of Offsite Resources
  - Letters of Agreement/Memoranda of Understanding with Offsite Agencies

# **RESOLUTION OF COMMENTS**

- **Protection for Onsite Personnel**
  - Specification of Required Protective Actions
  - Use of Multiple Procedures for Hostile Action

# RESOLUTION OF COMMENTS

- Challenging Drills and Exercises
  - Length of Exercise Planning Cycle
  - Use of Minimal/No Radiological Release Scenarios
  - Frequency of Certain Scenario Elements

# RESOLUTION OF COMMENTS

- Backup Means for Alert and Notification Systems
  - Need for Backup ANS Design Specification
  - Use of Batteries in Lieu of Backup Means



# RESOLUTION OF COMMENTS

- Emergency Declaration Timeliness
  - Clarification of When Declaration Is Made
  - Start/Stop of Timeliness “Clock”
  - Reference to “Plant Operator”

# **RESOLUTION OF COMMENTS**

- Emergency Operations Facility (EOF) – Performance-Based Approach
  - Exemptions for Existing EOFs
  - EOF Consolidation

# RESOLUTION OF COMMENTS

- Evacuation Time Estimate (ETE)  
Updating
  - ETE Update Threshold
  - Completion of ETE Updates
  - ACRS Subcommittee Comments

# RESOLUTION OF COMMENTS

- Amended Emergency Plan Change Process
  - Changes to Final Rule Language
    - Definitions of “Change” & “Emergency Plan”
    - Timing of Required Reports of Changes
    - Summary of 50.54(q) Analyses
  - Use of License Amendment Process

# RESOLUTION OF COMMENTS

- Amended Emergency Plan Change Process
  - Changes to Regulatory Guide 1.219
    - Alignment with Final Rule
    - Consistent Application of Term “Change”
    - Changes That Are Not Reductions in Effectiveness
    - Guidance Regarding “Margin”
    - Implementation Guidance

## **NEXT STEPS**

- Submittal to OEDO
- Submittal to SECY
- Final Rule Publication
  - Includes Onsite/Offsite Guidance Issuance
- Implementation Workshops

## **BACKUP SLIDES**

- [The following slides address the major changes between the proposed rule and draft final rule language, implementation dates, an overview of the regulatory analysis/backfit analysis, and several comments regarding NUREG/CR-7002. They are provided as backup slides and are not part of the handout.]

# 10 CFR 50.47(b)(10)

## Draft Final Rule:

A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Evacuation time estimates and updates must be submitted to the NRC for review **and approval to confirm adequacy**. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.



# 10 CFR 50.54(q)

## Draft Final Rule:

### (1) Definitions for the purpose of this section:

- (i) *Change* means an action that results in modification or addition to, or removal from, the licensee's emergency plan ~~or the resources, capabilities, and methods identified in the plan~~. All such changes are subject to the provisions of this section except where the applicable regulations establish specific criteria for accomplishing a particular change.
- (ii) *Emergency plan* means the document(s), prepared and maintained by the licensee, that identify and describe the licensee's methods for maintaining ~~and performing~~ emergency ~~planning functions preparedness and responding to emergencies~~. An emergency plan includes the plans as originally approved by the NRC and all subsequent changes made by the licensee with, and without, prior NRC review and approval under § 50.54(q).
- (iii) *Emergency planning function* means a capability or resource necessary to prepare for and respond to a radiological emergency, as set forth in the elements of section IV. of appendix E to this part and, for nuclear power reactor ~~s licensees~~, the planning standards of § 50.47(b).
- (iv) *Reduction in effectiveness* means a change in an emergency plan that results in reducing the licensee's capability to perform an emergency planning function in the event of a radiological emergency.

## 10 CFR 50.54(q) (cont.)

### Draft Final Rule (continued):

- (2) A holder of a license under this part, or a combined license under part 52 of this chapter after the Commission makes the finding under § 52.103(g) of this chapter, shall follow and maintain the effectiveness of an emergency plan that meets the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).
- (3) The licensee may make changes to its emergency plan without NRC approval only if the licensee ~~can demonstrate through performs and retains an~~ analysis **demonstrating** that the changes do not reduce the effectiveness of the plan and the plan, as changed, continues to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).
- (4) The changes to a licensee's emergency plan that reduce the effectiveness of the plans as defined in § 50.54(q)(1)(iv) may not be implemented without prior approval by the NRC. A licensee desiring to make such a change shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

# 10 CFR 50.54(q) (cont.)

## Draft Final Rule (continued):

- (5) The licensee shall retain a record of each change to the emergency plan made without prior NRC approval for a period of three years from the date of the change and shall submit, as specified in § 50.4, a report of each such change, including **a summary of** its analysis, within 30 days after the change is **made-put into effect**.
- (6) The nuclear power reactor licensee shall retain the emergency plan and each change for which prior NRC approval was obtained pursuant to § 50.54(q)(4) as a record until the Commission terminates the license for the nuclear power reactor.

# APPENDIX E, SECTION IV

## Draft Final Rule:

3. Licensees shall use NRC approved evacuation time estimates (ETEs) and ~~NRC-confirmed~~ updates to the ETEs in the formulation of protective action recommendations and shall provide the ETEs and ETE updates to State and local governmental authorities for use in developing protective action strategies.
4. Within 365 days of the later of the availability of the decennial census data from the U.S. Census Bureau or **[INSERT EFFECTIVE DATE OF FINAL RULE]**, nuclear power reactor licensees shall develop an ETE analysis using this decennial data and submit it under § 50.4 to the NRC ~~to confirm adequacy~~. **Licensees shall submit this ETE analysis to the NRC at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.**
45. During the years between decennial censuses, licensees shall estimate EPZ permanent resident population changes once a year, but no later than 365 days from the previous estimate, using the most recent U. S. Census Bureau annual resident population estimate and State/local government population data, if available. Licensees shall maintain these estimates so that they are available for NRC inspection during the period between decennial censuses and shall submit these estimates to the NRC with any updated ETE analysis.

# APPENDIX E, SECTION IV (cont.)

## Draft Final Rule:

**56.** If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ, to increase by 25 percent or 30 minutes, whichever is less, from the licensee's currently approved or **confirmed-updated** ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the NRC ~~for review and confirmation~~ under § 50.4 no later than 365 days after the licensee's determination that the criteria for updating the ETE have been met **and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.**

**67.** After an ~~license~~ applicant **for a combined license under part 52 of this chapter** receives its license, the licensee shall conduct at least one review of any changes in the population of its EPZ at least 365 days prior to its scheduled fuel load. The licensee shall estimate EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. If the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ, to increase by 25 percent or 30 minutes, whichever is less, from the licensee's currently approved ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the NRC for review ~~and confirmation~~ under § 50.4 no later than 365 days before the licensee's scheduled fuel load.

# APPENDIX E, SECTION IV.A.7

## Draft Final Rule:

Specifically, the following shall be included:

\* \* \* \* \*

Identification of, and **a description of the** assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, **including hostile action at the site. For purposes of this appendix, “hostile action” is defined as an act directed toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.**

# APPENDIX E, SECTION IV.A.9

## Draft Final Rule:

Nuclear power ~~plant reactor~~ licensees ~~under this part and Part 52 must provide shall perform~~ a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned ~~any~~ responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.

# APPENDIX E, SECTION IV.C.2

## Draft Final Rule:

Nuclear power ~~plant reactor~~ licensees ~~and applicants under this part and Part 52~~ shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following **a determination that an emergency action level has been exceeded-identification of the appropriate emergency classification level. These criteria must not be construed-Licensees shall not construe these criteria** as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due to an **EAL-emergency action level** that has been exceeded. **These criteria must not be construed-Licensees shall not construe these criteria** as preventing implementation of response actions deemed by the licensee to be necessary to protect public health and safety provided that any delay in declaration does not deny the State and local authorities the opportunity to implement measures necessary to protect the public health and safety.



## APPENDIX E, SECTION IV.D.3

### Draft Final Rule:

...The use of this alerting and notification capability will range from immediate alerting and notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the appropriate governmental authorities to make a judgment whether or not to activate the public alert and notification system. ~~The licensee shall identify and demonstrate that the appropriate governmental authorities have both the alerting and notification capability shall additionally include~~ administrative and physical means for a backup method of public alerting and notification capable of being used in the event the primary method of alerting and notification is unavailable during an emergency to alert or notify all or portions of the plume exposure pathway EPZ population. The backup method shall have the capability to alert and notify the public within the plume exposure pathway EPZ, but does not need to meet the 15-minute design objective for the primary prompt public alert and notification system. When there is a decision to activate the alert and notification system, the appropriate governmental authorities will determine whether to activate the entire alert and notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public alert and notification system shall remain with the appropriate governmental authorities.

# APPENDIX E, SECTION IV.F.2.b & d

## Draft Final Rule:

b. Each licensee at each site shall conduct a subsequent exercise of its onsite emergency plan every 2 years. Nuclear power **plant-reactor** licensees shall submit exercise scenarios under § 50.4 for prior NRC review and **approval-verification**. The exercise may be included in the full participation biennial exercise required by paragraph 2.c. of this section. In addition, the licensee shall take actions necessary to ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of the licensee's onsite emergency response capabilities. The principal functional areas of emergency response include activities such as management and coordination of emergency response, accident assessment, event classification, notification of offsite authorities, assessment of the onsite and offsite impact of radiological releases, protective action recommendation development, protective action decision making, plant system repair and **corrective-mitigative actions implementation**...

d. A State should fully participate in the ingestion pathway portion of exercises at least once every **6 years-exercise planning cycle**. In States with more than one site, the State should rotate this participation from site to site.

## APPENDIX E, SECTION IV.F.2.j

### Draft Final Rule:

The exercises conducted under paragraph 2 of this section by nuclear power ~~plant-reactor~~ licensees ~~under this part and Part 52~~ must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section. Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center. Additionally, in each ~~six-eight~~ calendar year exercise planning cycle, nuclear power ~~plant-reactor~~ licensees ~~under this part and Part 52~~ shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements: hostile action directed at the plant site (~~at an exercise frequency of at least once every 8 years~~), no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency, implementation of strategies, procedures, and guidance developed under § 50.54(hh), and integration of offsite resources with onsite response. The licensee shall maintain a record of exercises conducted during each ~~six-eight~~-year exercise planning cycle that documents the contents of scenarios used to comply with the requirements of this paragraph.

# **APPENDIX E, SECTION IV.F.2.j (cont.)**

**A licensee shall begin its first eight year exercise planning cycle no later than the date of its first biennial exercise conducted after [INSERT DATE 395 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER], and that first biennial exercise must include a hostile action scenario.**

# IMPLEMENTATION PERIODS

- Amended Emergency Plan Change Process
  - Effective date of final rule (30 days after final rule publication in *Federal Register*)
- Evacuation Time Estimate Update
  - 365 days from later of availability of decennial census data or effective date of final rule
- Licensee Coordination with OROs
  - 24 months from effective date of final rule
- On-Shift Staffing Analysis
  - 365 days from effective date of final rule

# IMPLEMENTATION PERIODS (cont.)

- Emergency Action Levels for Hostile Action
  - 180 days from effective date of final rule
- Emergency Declaration Timeliness
  - 180 days from effective date of final rule
- Alert and Notification System Backup Means
  - 180 days from effective date of final rule (with existing FEMA-approved ANS backup means)
  - 365 days from effective date of final rule to submit ANS backup means for FEMA review, then 365 days from date of FEMA approval to implement ANS backup means

## **IMPLEMENTATION PERIODS (cont.)**

- Emergency Operations Facility – Performance-Based Approach
  - 180 days from effective date of final rule
- ERO Augmentation at Alternative Facility
  - 180 days from effective date of final rule for staging area and communications capability
  - 36 months from effective date of final rule for remaining capabilities
- New Drill and Exercise Requirements
  - Starting with biennial exercise conducted in 2014 or 2015
- Protective Actions for Onsite Personnel
  - 180 days from effective date of final rule

# REGULATORY ANALYSIS

- Costs/Benefits Evaluated Relative to Current Regulations, Orders, and Voluntary Actions
- Costs Are Site-Based Rather Than Reactor-Based
- Average Power Reactor Site Cost
  - One-Time = \$485,000
  - Annual = \$40,000
- Average Non-Power Reactor Site Cost
  - One-Time = \$14,000
  - Annual = \$0

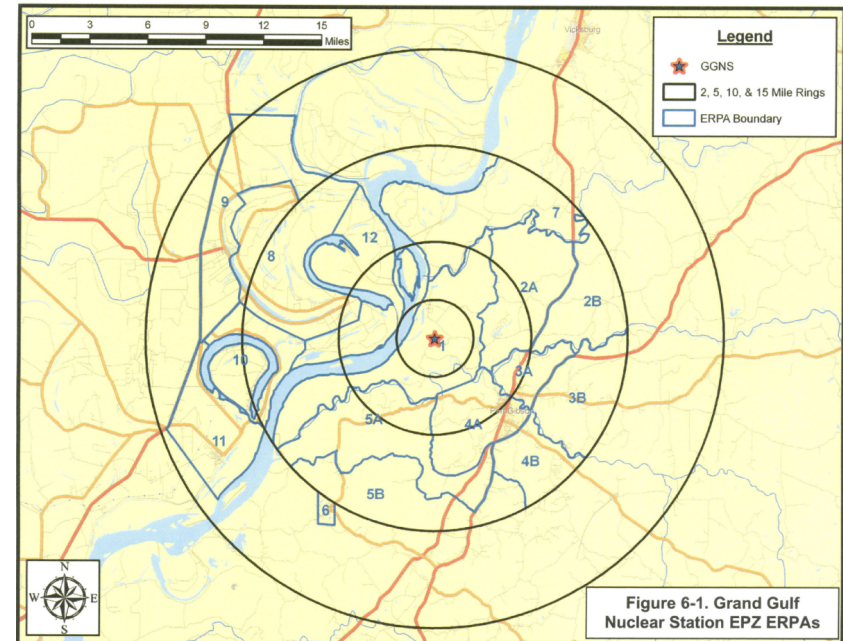


# BACKFIT ANALYSIS

- Final Rule Requirements Qualify as Backfits
- Two Exceptions
  - Amended Emergency Plan Change Process
  - Performance-Based Emergency Operations Facility
- Backfits Substantially Increase Level of Emergency Preparedness
- Backfits Substantially Enhance Protection of Public

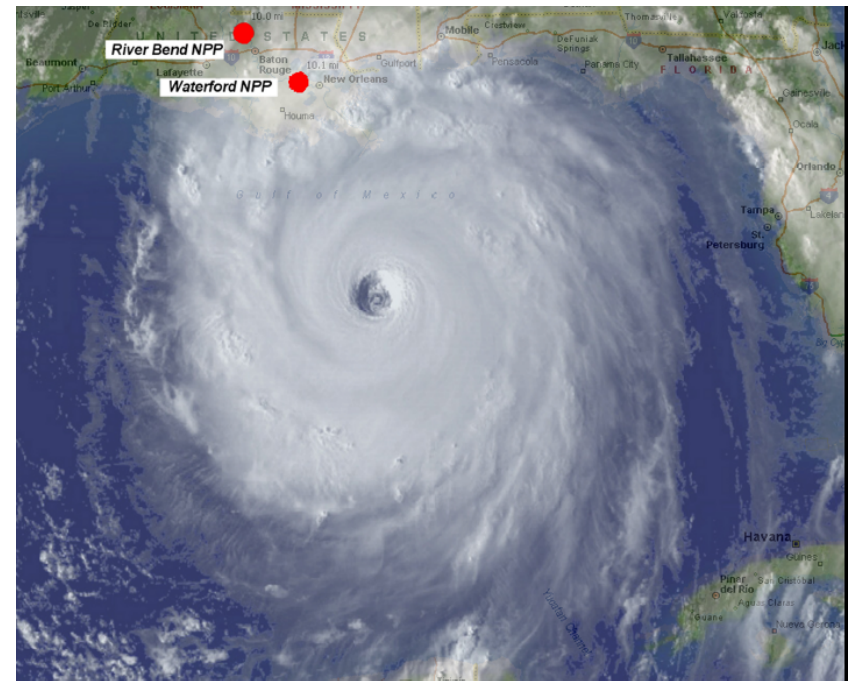
# TRANSIENT POPULATIONS BEYOND EPZ

- EPZ Often Extended to Accommodate Population Centers
- For Events Beyond EPZ:
  - Localized, high density areas
  - Higher vehicle occupancy
  - Shorter mobilization times
  - Events often evening or weekend



# SEVERE NATURAL HAZARDS

- Nuclear Power Plant Area Relatively Small, Affects Thousands
- Hurricane Evacuation Starts Days in Advance, Typically Affects Millions
- Seismic Consequences Site-Specific, Do Not Always Increase ETE



**Hurricane Katrina was approximately 400 miles across compared to the 10 mile EPZs shown**

# NUMBER OF ETE SCENARIOS

- Scenarios Multiplied by Number of ERPAs
  - Hundreds of ETEs generated with each study
  - Typically little variation among scenarios
  - Additional scenarios would result in same ETE values
- Evening Adverse Weather ETEs Bounded by Daytime Adverse Weather and Evening Normal Weather ETEs

# ETE UNCERTAINTIES

- High Confidence in:
  - Demographic data (US Census)
  - Roadway network data (visually surveyed)
  - Roadway network analysis (Highway Capacity Manual)
  - Evacuation models - calibrated, validated
- Mobilization Time Has Inherent Uncertainty; Requires Assumptions
  - Primary contributor to evacuation tail

## Bob Leyse slides for Full ACRS, December 14, 2011

On December 2, 2010 I taught Full ACRS that 2200 is too high.

Today's focus is on two items:

### RBHT at Penn State

User Need Request, Leeds to Sheron, April 26, 2010, ML100770117  
USER NEED REQUEST FOR TECHNICAL ANALYSIS OF  
PETITION FOR RULEMAKING ON 10 CFR 50.46

NRC (outrageously) has always promoted RBHT at Penn State as highly applicable to TRACE and licensing. However, the documents are not available to anyone unless NRC apparently provides selected access.

Apparently ACRS Consultant Wallis has had such access because at  
Advisory Committee on Reactor Safeguards  
Thermal Hydraulic Phenomena Subcommittee  
Monday, October 18, 2010  
Page 86

CONSULTANT WALLIS: Are we going to hear  
16 about this later? Are we going to hear about this  
17 later? **Because the only thing I have seen from the**  
**18 Penn State work was some very sort of crude results,**  
**19 but they measured all kinds of stuff.**

Moving to the User Need Request, Leeds to Sheron:

In the User Need Request, Leeds to Sheron, April 26, 2010, ML 100770117, Leeds refers to the Technical Safety Analysis of PRM-50-76, April 29, 2004, ML 041210109, as an "... outstanding technical analysis ... ." However, the facts reveal that ML041210109 is most certainly not an outstanding technical analysis. (Unless that means outstandingly deficient).

Referring to work at PSU and elsewhere, ML041210109, reports on April 29, 2004, "Current programs at Pennsylvania State University ... are far more cost effective."

So, in 2004, NRC staff was praising RBHT, but more than 6 years later, Expert Consultant Wallis reported, "...**Penn State work was some very sort of crude results.**"

The next slide details the Penn State reporting.

**From ACRS SUBC. ON THERMAL HYDRAULIC PHENOMENA, OCTOBER 18, 2010**

RBHT was discussed by Seungjin Kim, Assistant Professor, Pennsylvania State University. His slides list six reports that were submitted to NRC during 2008. Kim's list is in blue. A corresponding list in black type is from Penn State University Reports as reported by NRC, McGinty to Leyse, April 16, 2010, (ML100950085). McGinty discloses that only one of the six reports is available to the public and it was not placed in ADAMS until 07/31/2010 (ML102290227). Three of Kim's six reports have **no publishing date set**. Another **is now predecisional but is expected to be published by December 2011**. Finally, **NRC expects to publish NUREG/CR 6975 as a public document by December 2010; however, it is not yet in ADAMS**.

- Reports Submitted to NRC

**Penn State University Reports as reported by NRC, McGinty to Leyse, (ML100950085)**

- Rod Bundle Heat Transfer Facility Test Plan and Design, *NUREG/CR-6975, September 2008*

L. E. Hochreiter, F. B. Cheung, T. F. Lin, C. Frepoli, A. Sridharan, D. R. Todd, E. R. Rosal, **NUREG/CR 6975**, "Rod Bundle Heat Transfer Facility Test Plan and Design," submitted to U.S. Nuclear Regulatory Commission (NRC) October 2008 (218 pages).  
*Status: Actually 567 pages. The NRC's Office of Nuclear Reactor Regulation (NRR) and the Office of New Reactors (NRO) is reviewing NUREG/CR-6975 (ADAMS Accession No. ML082831698). The NRC expects to publish this as a public document by December 2010*

- Rod Bundle Heat Transfer Test Facility Description, *NUREG/CR-6976, September 2008*

**NUREG/CR-6976** was not placed in ADAMS until 07/31/2010 (ML102290227)

- RBHT Reflood Heat Transfer Experiments Data and Analysis Report, *NUREG/CR-6980, November 2008*

L. E. Hochreiter, F. B. Cheung, T. F. Lin, S. Ergun, A. Sridharan, A. Ireland, E. R. Rosal, **NUREG/CR-6980**, "RBHT Reflood Heat Transfer Experiments Data and Analysis Report," submitted to the NRC October 2008 (338 pages).  
*Status: Actually 539 pages, the NRC's Office of Nuclear Regulatory Research (RES) has reviewed and provided comments on NUREG/CR-6980 (ADAMS Accession No. ML082830388). Penn State is revising this NUREG. It is now predecisional but is expected to be published by December 2011.*

- RBHT Two Phase Mixture Level Swell and Uncovery Experiments Data Report, *PSU/MNE Draft Report, December 2008*

L. E. Hochreiter, F. B. Cheung, T. F. Lin, D. J. Miller, B. R. Lowery, **NUREG/CR-XXXX**, "RBHT Two Phase Mixture Level Swell and Uncovery Experiments Data Report," submitted to the NRC December 2008 (198 pages).  
*Status: Actually 1111 pages, not currently in NUREG format, needs staff review, no publishing date set.*

- Rod Bundle Heat Transfer Facility – Steady State Steam Cooling Experiments, *PSU/MNE Draft Report, December 2008*

L. E. Hochreiter, F. B. Cheung, T. F. Lin, D. M. McLaughlin, J. P. Spring, P. M. Kutzler, and S. Ergun, **NUREG/CR-XXXX**, "Rod Bundle Heat Transfer Facility Steady State Steam Cooling Experiments," submitted to the NRC December 2008 (206 pages).  
*Status: Actually 474 pages, text has been reviewed, data and plots will be reviewed, no publishing date set.*

– Rod Bundle Heat Transfer Facility – Steam Cooling with Droplet  
Injection Experiments Data Report, *PSU/MNE Draft Report*,  
December 2008

L. E. Hochreiter, F. B. Cheung, T. F. Lin, D. J. Miller, B. R. Lowery, **NUREG/CR-XXXX**, "Rod Bundle Heat Transfer Facility Steam Cooling with Droplet Injection Experiments Data Report," submitted to the NRC December 2008 (427 pages) ***no publishing date set.***