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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

May 17, 2005

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, taken on May 17, 2005, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

This transcript has not been reviewed, corrected and edited and it may contain inaccuracies.

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

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SUBCOMMITTEE ON FIRE PROTECTION

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TUESDAY,

MAY 17, 2005

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ROCKVILLE, MARYLAND

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The subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room T-
2B3, 11545 Rockville Pike, at 8:30 a.m., Stephen L.
Rosen, Chairman, presiding.

COMMITTEE MEMBERS:

STEPHEN L. ROSEN, Chairman

GEORGE E. APOSTOLAKIS, Member

MARIO V. BONACA, Member

RICHARD S. DENNING, Member

DANA A. POWERS, Member

GRAHAM B. WALLIS, Member

1 ACRS/ACNW STAFF:

2 HOSSEIN P. NOURBAKHS, Designated Federal

3 Official

4 JOHN G. LAMB

5 PANELISTS:

6 JEFF ERTMAN, Progress Energy

7 ELIZABETH KLEINSORG, Kleinsorg Group Risk

8 Services, LLC

9 ALEX MARION, NEI

10 NRC STAFF:

11 RICHARD A. DIPERT, NRR

12 RAY GALLUCCI, NRR

13 JOHN HANNON, NRR

14 PETER KOLTAY, NRR

15 PAUL W. LAIN, NRR

16 ROBERT F. RADLINSKI, NRR

17 SUNIL D. WEERAKKODY, NRR

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I-N-D-E-X

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

(8:31 a.m.)

CHAIRMAN ROSEN: The meeting will now come to order. Good morning. This is a meeting of the ACRS Subcommittee on Fire Protection. I am Steve Rosen, Chairman of the Subcommittee. Members in attendance are George Apostolakis, Rich Denning, Graham Wallis, Dana Powers, and Mario Bonaca.

The purpose of this meeting is to discuss the draft Final Regulatory Guide, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants. The Subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions as appropriate for deliberation by the Full Committee.

Dr. Hossein Nourbakhsh is the designated federal official for this meeting. Also, Mr. John Lamb, of the ACRS staff, is in attendance to provide technical support.

The rules for participation in today's meeting have been announced as part of a Notice of this meeting previously published in *The Federal Register* on May 4, 2005.

A transcript of the meeting is being kept and will be made available as stated in the *The*

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1 Federal Register Notice. It is requested that the
2 speakers first identify themselves, use one of the
3 many microphones, and speak with sufficient clarity
4 and volume so that they can be readily heard.

5 We have received no written comments or
6 requests for time to make oral statements from members
7 of the public today regarding today's meeting.

8 We will now proceed with the meeting. I
9 call upon Sunil Weerakkody of the Office of Nuclear
10 Reactor Regulation to begin.

11 MR. WEERAKKODY: My name is Sunil
12 Weerakkody. I am the Section Chief of Fire Protection
13 in NRR. Our Region Director is out today and my boss,
14 John Hannon, will join us shortly.

15 It has been a while, I think, more than
16 about six months since we last briefed this
17 Subcommittee. Today's briefing is solely focused on
18 NFPA 805, which we call the Risk-Informed,
19 Performance-Based Rule. We have a number of
20 presentations from the staff. The focus of the
21 discussion is the Reg. Guide, however, we will have a
22 presentation to you on the Inspection Guide. The main
23 message we want to convey to you, and that is under
24 the endorsement we will be seeking, is that you would
25 see that we have taken a number of steps to avoid the

1 kind of errors or the kind of confusions that got us
2 into the Appendix R. For example, the Appendix R Reg.
3 Guide was developed only about three years ago even
4 though Appendix R was issued in 1981. As compared to
5 that, in comparison, the Rule was issued in July of
6 last year and by July of this year, we hope to get the
7 endorsement of all stakeholders and have a finalized
8 Reg. Guide in place.

9 In addition, we are planning to have an
10 Inspection Procedure that will work with 805 in place
11 by the end of the year, available for the regions,
12 even though it will be used for the first time in
13 about two and a half years from now. So we are taking
14 all the steps to address any uncertainties in the
15 implementation of this new Risk-Informed Rule.

16 With that, I would like to introduce the
17 next speaker. Sitting here on my right is Paul Lain.
18 He is the Project Manager for NFPA 805. He has been
19 playing that role for the last three years, taking
20 care of all issues basically associated with 805.

21 Bob Radlinski here is in my staff. He is
22 the key responsible person for the Reg. Guide. He is
23 going to give you a presentation on the Reg. Guide.
24 Sitting in the back is Rick Dipert. He is going to
25 provide you with a presentation on the Inspection Plan

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1 because he is the Chairman of the Working Group that
2 we have put together to prepare the Inspection Guide.

3 With that, Paul, why don't you go ahead
4 and start?

5 MR. LAIN: Okay. As you said, my name is
6 Paul Lain. I am a Fire Protection Engineer in Sunil's
7 staff. I have a Master's in Fire Protection
8 Engineering from Worcester Polytech. And today we are
9 oohere to talk about the Regulatory Guide and seek
10 your endorsement.

11 Here's a brief outline of what I plan to
12 discuss today. I will start with the main purpose for
13 the meeting, review a short history of the 805 Rule,
14 fill in the Subcommittee on the various 805 activities
15 that are ongoing, review the Reg. Guide Schedule,
16 touch on industry's interests so far, and then add
17 some insight on a new standard for advanced reactors.

18 So the main purpose of the meeting today
19 is, as Sunil said, we are looking for ACRS endorsement
20 to publish the NUREG Guide. The ACRS gave us a
21 deferral on the review of the draft until the public
22 comments period was over and we've addressed those
23 public comments and are hoping for your endorsement.

24 Here is a short history of the Risk-
25 Informed Rule. NFPA 805 was born out of a few -- out

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1 of a number of issues. In the '90's, the Commission
2 embraced Risk-Informed, Performance-Based Regulation
3 and the reduction of regulatory burden. In addition,
4 some thought Appendix R was too deterministic with
5 hundreds of exemptions. A Thermo-Lag problem
6 heightened the need for the methodology to quantify
7 the risk, which could have minimized the resolution
8 impact. In '98, the staff formally proposed to the
9 Commission to work with NFPA to develop a Risk-
10 Informed, Performance-Based Consensus Standard and, if
11 acceptable, the staff would request the Commission to
12 endorse the rulemaking. In 2000, the staff had
13 confidence that the Standard would be acceptable and
14 requested the Commission approve the Rulemaking Plan
15 and adopt 805. In 2001, NFPA issued 805 and in 2002,
16 the Rule was published -- the proposed Rule was
17 published, and in 2004, the Final Rule was approved.

18 So here are some items that are left to do
19 with the 805. We will discuss the first four bullets
20 in more detail today, in the next couple of briefings.
21 The fifth bullet, the Subcommittee heard from Research
22 and EPRI earlier this month, NRR has been monitoring
23 these efforts and providing comments on the drafts.
24 Once the new Regs have been finalized, NRR will review
25 the limitations and address, you know, how to

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1 implement those in the next revision of the Reg.
2 Guide. So Revision Zero will not -- has placeholders
3 and discussions of those products, but not full
4 endorsement of those products until those products are
5 complete.

6 Finally, the last bullet there is the
7 Standard Review Plan. It may need to be updated for
8 review of the 805 License Amendment Process. We are
9 allowing licensees to transition in a graded approach.
10 If they have a clean licensing basis and follow the
11 Reg. Guides, it should be an administrative matter to
12 transition, but if they have gray issues within their
13 licensing basis, they can submit those issues to NRC
14 Review. One of our goals here is to have the 805
15 transitions bring clarity to the licensing basis, so
16 we are allowing them to submit extra license amendment
17 items that can be reviewed and approved through the
18 NSER Process so that they will have -- they will bring
19 their licensing basis up to proper clarity. That is
20 something industry wanted to do and we're allowing
21 that through this process.

22 We will also be reviewing the SRP during
23 the Product Program and any updates or any updates
24 that are needed.

25 Here is a short -- back to the main reason

1 why we are here today is that the Reg. Guide's
2 schedule -- we want the Reg. Guide published. This is
3 our current schedule. It has taken some time, but it
4 was expected since we have been working with NEI to
5 develop a consensus on their implementation guidance,
6 NEI 04-02, we will hear a little bit more about that
7 today. Bob Radlinski of NEI will be discussing these
8 documents further and, hopefully, we can get the
9 Committee's endorsement by the end of June and meet
10 our July publishing date.

11 MR. APOSTOLAKIS: When will you get the
12 CRGR Review?

13 MR. LAIN: We are meeting with them next
14 Tuesday.

15 MR. APOSTOLAKIS: So the document we are
16 reviewing then may not be the final document?

17 MR. LAIN: We are hoping it will be very
18 close to the final document, yes.

19 We don't see -- the CRGR pretty much gave
20 a pass on the Rule since the Rule is voluntary. We
21 don't see a lot of back-dated issues with this Rule,
22 and so we discussed, and we got a deferral from them
23 on the Reg. Guide, but they also said they wanted to
24 take a look at the Reg. Guide before the Reg. Guide
25 went out. So, yes, sir.

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1 MR. APOSTOLAKIS: Okay.

2 MR. LAIN: I have added this slide because
3 the Subcommittee, in the past, has shown some interest
4 on who may adopt this new Rule.

5 CHAIRMAN ROSEN: What is that LOI?

6 MR. LAIN: It is a Letter of Intent and we
7 will be discussing that a little bit later. I
8 probably shouldn't throw in acronyms there at the
9 beginning of the presentation.

10 As I've heard it said before, Duke has
11 volunteered to be the first penguin off the ice. I
12 think Dennis has said that. And Duke has sent us a
13 Letter of Intent in February --

14 DR. POWERS: Who uses an analogy for a
15 Fire Protection Rule?

16 (LAUGHTER.)

17 MR. LAIN: They've indicated their intent
18 to transition all seven of their units.

19 MR. APOSTOLAKIS: But why would they do
20 that? It's a little bit of a mystery to me. I mean,
21 we've been hearing over the years that they have
22 invested tremendous amounts of money and effort to
23 implement Appendix R. Why would they change now?

24 MR. WEERAKKODY: Let me try to answer that
25 using some of the material that Drew Barron, he's the

1 Chief Nuclear Officer of Duke, came to the RIC and he
2 gave a presentation on 805 and gave a number of
3 reasons --

4 CHAIRMAN ROSEN: You said he came to the?

5 MR. WEERAKKODY: The RIC, Regulatory
6 Information Conference 2005, and he provided a
7 presentation as to why he decided to go this way,
8 granted there is a mystery to the Appendix R, but at
9 the same time, on a year-to-year basis, from
10 Inspection Basis, they are having to deal with a large
11 number of mostly lower significant issues that are
12 non-compliances. They like -- you know, he is driven
13 by the need to go to a stable regulatory environment
14 through 805. That is his high-level intent. He also
15 sees that in addition to being able to focus his
16 attention to the risk significant issues in what are
17 the necessary modifications, he also sees as a way of
18 not having to do unnecessary modifications that does
19 not advocate --

20 MR. APOSTOLAKIS: So let me understand
21 this. Appendix RR has been around for 20 --

22 MR. WEERAKKODY: Twenty-four years.

23 MR. APOSTOLAKIS: -- for twenty-four
24 years. And some facilities still have a problem
25 complying with Appendix R?

1 MR. WEERAKKODY: Yes, there is -- in Fire
2 Protection, what you see, Dr. Apostolakis --

3 MR. APOSTOLAKIS: George, George is fine.

4 MR. WEERAKKODY: -- is a large number of
5 non-compliances, very few, a small fraction of them
6 greater than green, okay? Like, when I -- involved
7 research, all these findings since ROP began, only
8 five percent are greater than green, but we have like
9 70-some odd findings. So, you know, one would say all
10 those green findings that meet the Defense Index and
11 Safety Margin are non-issues. But as a regulator, we
12 can't tell the licensee, hey, you know, we know it's
13 a non-compliance.

14 MR. APOSTOLAKIS: But the green though, is
15 determined using risk arguments?

16 MR. WEERAKKODY: Yes.

17 MR. APOSTOLAKIS: So there is an
18 inconsistency then between the ROP finding, which is
19 based on the risk, and the compliance with Appendix R?

20 MR. WEERAKKODY: Yes, but --

21 MR. APOSTOLAKIS: Is that what you're
22 saying?

23 MR. WEERAKKODY: No, I'm -- what I'm
24 saying is if you go to Appendix R, the compliance
25 expectations are not really aligned with ROP. So the

1 Inspectors go -- they find issues that are non-
2 compliances, yet not important safety issues.

3 MR. APOSTOLAKIS: That is what they just
4 said?

5 MR. WEERAKKODY: Yes.

6 MR. APOSTOLAKIS: That there is an
7 inconsistency?

8 MR. WEERAKKODY: Yes. Yes, that is
9 correct. But in answer to your question, when a
10 licensee goes to 805 --

11 MR. APOSTOLAKIS: Maybe you would address
12 that later, but exactly does it mean to transition to
13 a Risk Informed Fire Protection Program? What does it
14 mean? What --

15 MR. PARTICIPANT: We will go into that in
16 more detail later.

17 MR. APOSTOLAKIS: Okay, fine. Fine.

18 So Duke is interested in this and Progress
19 Energy, right?

20 MR. WEERAKKODY: Yes.

21 CHAIRMAN ROSEN: What is a tentative
22 Letter of Intent? I'm not clear.

23 MR. WEERAKKODY: It is an intent of some
24 meeting on Federal intent.

25 MR. LAIN: Yes. Yes. I'll move on to --

1 well, let me finish up with Duke. Duke is, due to
2 expertise availability, they have chosen to overlap
3 their series and finish up with Catawba in 2009. With
4 Progress Energy, we have been in some conversations
5 with Progress, they're planning on coming and briefing
6 us this afternoon. They have indicated that they'll
7 send us Letter of Intent by the end of the month.
8 Their first plant, I think, they plan to transition
9 is Harris. They have shown interest, I guess, in
10 transitioning all five of their sites. So we've also
11 heard through the grapevine there's other sites
12 evaluating the 805 option, but these two sites have
13 really indicated that they've -- that they are
14 probably going to go.

15 DR. DENNING: Do all of those units have
16 existing fire PRAs?

17 MR. LAIN: Do all sites have?

18 DR. DENNING: Do all of those units have
19 fire PRAs?

20 MR. LAIN: Duke -- from what I know, Duke
21 is developing. They're going through a lot of cable
22 tracing, they're reconstituting their Appendix RR
23 licensing basis and then developing the fire PRAs.

24 MR. WEERAKKODY: The Rule does not require
25 that they have a fire PRA, but in answer to your

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1 question, the Oconee does have and we are telling all
2 licensees that if you are adopting 805, you really
3 need a fire PRA to do it right.

4 DR. DENNING: Yeah, I'd like to pursue
5 that just a little bit further because that's the --
6 one of the things that has me concerned is the
7 rational by which you would go to Risk Informed
8 Regulation when you don't have a fire PRA for a unit.
9 What's the basis on which you can really determine the
10 risk significance of changes?

11 MR. WEERAKODY: Okay, what the Rule
12 requires is if for a change, for a change -- you
13 Are using risk analysis and all changes do require
14 some level of risk analysis, you need to have a risk
15 analysis that can properly capture the scope and
16 nature of the change. So there is a requirement
17 there. Now, whether or not the licensee has a fire
18 PRA is not tied into the Rule itself.

19 MR. APOSTOLAKIS: Are you saying that, in
20 effect, they would have to have one?

21 MR. WEERAKODY: Yes.

22 MR. APOSTOLAKIS: But the Guide, though --
23 and we are going to pursue this a little bit from Page
24 4 -- says, "...transition to an NFPA 805 based fire
25 protection program does not require licensees to use

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1 a fire Probabilistic Risk Assessment model; however,
2 without a fire PRA, licensees may not realize the full
3 safety and cost benefits of transitioning to NFPA
4 805." Now, a statement like that is so confusing.
5 You want to have a Risk Informed Fire Protection
6 Program that says it does not require, but you can
7 have benefits. How can you have -- I mean, it seems
8 like you can't do it at all if you don't have a Fire
9 Protection --

10 MR. WEERAKODY: You could transition,
11 George. You could transition to an 805 licensee
12 basis. What you cannot do is, after you transition,
13 when you perform a change, you come to a point where
14 you have to demonstrate that -- to yourself and to
15 NFPA, if necessary, that the change you're making is
16 not very significant.

17 MR. APOSTOLAKIS: How do you transition --
18 I mean, that's my confusion -- what does it mean to
19 transition?

20 MR. WEERAKODY: Could we -- yes, because
21 I think that's -- most of your questions are going to
22 be answered by 04-02.

23 MR. APOSTOLAKIS: Okay.

24 MR. WEERAKODY: But in summary, you look
25 at each of your fire areas and you make a

1 determination as to whether you're meeting your
2 current deterministic rules and then you might
3 concentrate in some of those areas under the currently
4 demonstrated requirements for that area, but then in
5 certain other areas, you may decide that you're going
6 to use a performance based method to transition. So
7 really, when you transition, what you're saying to the
8 Agency is that from now on, I am operating under a new
9 set of rules.

10 MR. APOSTOLAKIS: And you said those rules
11 are based -- is based on risk?

12 MR. WEERAKKODY: Yes.

13 MR. APOSTOLAKIS: But, still, I don't need
14 the risk assessment? I mean that's where the
15 confusion is.

16 MR. LAIN: Well, within 805, there is a
17 parallel -- there's a deterministic side and a --

18 MR. APOSTOLAKIS: Yes.

19 MR. LAIN: So they could fall on the
20 deterministic side of go down the performance based
21 side, selectively as they need -- as they wanted to
22 make changes. But for economics, it would be -- it's
23 definitely more economical to have the fire PRA.

24 MR. APOSTOLAKIS: So the two parallel
25 paths, I remember. It's not one or the other? You

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1 can mix?

2 MR. LAIN: You can combine them, yes.

3 MR. POSTOLAKIS: It's still confusing. I
4 mean, with the Regulatory Guide titled Risk-Informed,
5 Performance-Based that no risk tools may be used for
6 it.

7 DR. BONACA: It's too confusing.

8 MR. HANNON: This is John Hannon, Plant
9 Systems Branch. Let me try to help with this because
10 I understand the confounding nature of this and we've
11 talked a lot about it and had a number of discussions
12 with these licensees. And it's true that you can
13 transition to an 805 regime, regulatory scheme,
14 without having a full fire PRA, but at the time -- at
15 the point where, for any one particular fire area, you
16 might want to make a change to that area for cost
17 beneficial reasons -- let's say you want to remove
18 some fire barriers or something. You do need to do at
19 least a mini-PRA for that change. It doesn't -- you
20 don't need a full-blown fire PRA. You can do a limited
21 scope risk assessment just for that change. And that
22 would be consistent with the 805 Rule. What the staff
23 is trying to suggest, though, is that -- that if you
24 do have a full-fledged fire PRA when you make the
25 transition to 805, it equips you to be able to move

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1 into that regime much more effectively because you
2 have the tools available to you at that point.

3 So what we've seen so far with these
4 utilities that are expressing the interest here is
5 they are developing a full-fledged fire PRA for their
6 facilities.

7 DR. BONACA: Yeah, well my main concern
8 about the ambiguity, I mean, whether or not they're
9 needed or not is tied mostly to the -- to an
10 expectation of standards for whatever is being used.
11 I mean, if you say that there is a requirement for
12 risk analysis in the Rule, then we know what
13 expectations you have for a solid risk analysis that
14 would support that. If you have no definition of
15 that, you're talking about a mini-PRA or whatever, you
16 know, you have no standards to judge what you're doing
17 there. I mean, I don't know how a reviewer in the
18 staff would be comfortable about approving something -
19 -

20 MR. APOSTOLAKIS: Not only that, but it's
21 made explicit in the NEI document, at least, that any
22 changes that are risk informed or risk based will be
23 governed by Regulatory Guide 1.174, which now says
24 that not only do you need the fire PRA, you need the
25 internal event PRA, too, because for the zone to

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1 access, it's a total CDF. So how can you do a
2 meaningful PRA and go to the Regulatory Guide?

3 CHAIRMAN ROSEN: I don't know how you do
4 a fire PRA without an internal events PRA, to begin
5 with, but let's drill down for a minute and --

6 MR. APOSTOLAKIS: But the Regulatory Guide
7 has explicit requirements. It says the total CDF is
8 on the horizontal line, so if you don't have that --

9 CHAIRMAN ROSEN: Yes, I understand.

10 MR. APOSTOLAKIS: -- you cannot go there.
11 You can calculate the depth of CDF using a small PRA,
12 but for the total, I don't know, unless it doesn't
13 matter. I mean, we have these flat lines there.

14 MR. LAIN: But if you envision a typical
15 case, George, where a licensee takes a fire area and
16 says he wants to do a mini-PRA for that fire area, he
17 goes into that fire area, he finds equipment and
18 cables, many cables presumably in some fire areas, and
19 now you have to ask yourself the question, "To what
20 equipment do these cables go?" and "Where does that
21 equipment show up in the PRA, in what sequences?" And
22 so pretty soon, you're into a full PRA anyway. I just
23 don't know how you can do it without that.

24 So it seems like, although you can say the
25 words, in practice, for implementation, if someone

1 tried that and tried to present it to a knowledgeable
2 person or group, it wouldn't pass. It might not -- it
3 most likely wouldn't pass unless the area was very
4 simple.

5 MR. WEERAKKODY: Well, let me try to
6 answer the question a different way. Let me think of
7 an 805 plan, you know, a plan that has fully
8 transitioned. What we are saying is if they had an
9 area with, say, ten barrels of oil and they want to
10 bring one more barrel of oil and then place it in that
11 area. Say, the Turban Building. Now, if you do a
12 fire modeling calculation and you show that any of the
13 potential targets cannot be affected because of that
14 Delta chain, with a high degree of certainty, okay?
15 You shouldn't have to have a full fire PRA to say,
16 from a risk assessment, you know, you basically go
17 through the Risk Assessment Methods to say that the
18 risk assessment is negligible. So what we are trying
19 to avoid or what the Rule is trying to avoid was to
20 impose undue requirements like that. But I do agree
21 with the Committee, all of you, that, -- and, in fact,
22 when licensees come for an 805 transition, one of the
23 messages I communicate with them is even though the
24 Rule doesn't require, you cannot -- it's almost
25 difficult -- any substantial changes, you are going to

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1 need a fire PRA to support that.

2 MR. APOSTOLAKIS: But the example you gave
3 us, wouldn't that be handled under 5059? I don't need
4 the FPA 805 at all. I mean, I can show that by adding
5 the extra barrel of oil, I don't affect the initiating
6 event frequencies, I don't affect any sequences, go
7 through the list, you know, the 5059 requirements, and
8 then say I don't even have to go to the NRC.

9 MR. WEERAKKODY: The elements that affect
10 the Fire Protection Program, George, 5059, has no
11 rule. It was -- it is done under a separate program.

12 MR. APOSTOLAKIS: But this seems to me to
13 be an extreme case, and to have such statements just
14 because of these previous situations -- maybe the
15 statement should be that you should have a fire PRA,
16 but there are some cases where you probably don't need
17 it. That would have been a more appropriate
18 statement.

19 DR. DENNING: Or there could have been the
20 position that it's mandatory that you have a fire PRA
21 before you go into this. I mean, that seems to me the
22 logical thing, and that that fire PRA has to meet
23 certain criteria.

24 MR. APOSTOLAKIS: I mean a Risk Informed
25 Performance Base without a PRA is kind of -- and

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1 what's worse, since we're at it, it says there two or
2 three times in the NEI document quantitative
3 evaluations can be a more complex qualitative
4 evaluation. What does that mean? Maybe we're jumping
5 ahead, but -- it will be there, even later. So it's
6 on Page 46, Footnote 10, "The quantitative evaluation
7 can be a more detailed qualitative evaluation." What
8 on earth does that mean? It's a general attitude
9 we've seen in the past, too, stay away from numbers as
10 much as you can, you know. And I don't like that.
11 And then that's repeated later. I don't remember
12 where.

13 MR. LAIN: Anyway --

14 MR. APOSTOLAKIS: Why don't we come out
15 and say, "If you want a Risk Informed System, you have
16 to have risk information." I mean, that stands to
17 reason. It's very simple. It's too simply.

18 DR. WALLIS: It's not only reasonable;
19 it's very logical.

20 MR. APOSTOLAKIS: Maybe that's the problem
21 with it. Okay, why don't we go on --

22 DR. WALLIS: It's not his fault, but --
23 could I ask a question?

24 CHAIRMAN ROSEN: Graham, a question?

25 DR. WALLIS: You've told us a bit about

1 what this is. Now, why is this industry interested?
2 Is it because they don't comply with the Regulations
3 now, but they could if they used this Guide, or are
4 they interested because they want to make significant
5 changes in the Plan?

6 MR. WEERAKKODY: I'll be speculating, Dr.
7 Wallis, if I -- what I know is that most of the -- the
8 two utilities that have come forward are confronted
9 with a number of non-compliances.

10 DR. WALLIS: And they want to comply by
11 doing it a different way, I guess.

12 MR. WEERAKKODY: Yes, exactly.

13 CHAIRMAN ROSEN: Non-compliances, don't
14 they -- that they agree are non-compliances, but they
15 think are not risk significant?

16 MR. WEERAKKODY: Exactly. Not only them,
17 we also know that.

18 CHAIRMAN ROSEN: And you agree they are
19 not risk significant?

20 MR. WEERAKKODY: Yes.

21 DR. WALLIS: And you've essentially
22 allowed these non-compliances, so nothing significant
23 would change except they will now sort of come under
24 the umbrella of the law if they go with this new
25 method.

1 MR. WEERAKKODY: Yes.

2 DR. WALLIS: So that's a very different
3 thing from are they going to make significant changes
4 in the PRA. If they are going to make significant
5 changes in the PRA, you might be a little weary of
6 that.

7 MR. WEERAKKODY: I've heard that concern.
8 One of the things that's not common knowledge, but is
9 that even the licensees who adopt 805 have to meet the
10 5048(a). Okay, that doesn't go away. And what 5048(a)
11 refers to is the old general design criteria 53. So
12 just because a licensee adopts 805, they can't go
13 report the suppression systems, you know, there are
14 measures against that. But where they can benefit is
15 where they have non-compliances -- you know, in fire
16 protection you find a lot of situations where when
17 they build the plans, things are not exactly according
18 to some quota out there. So you have a lot of stuff
19 out there which are non-compliance. Now, that kind of
20 stuff would go away.

21 CHAIRMAN ROSEN: Perhaps we should
22 continue.

23 MR. WEERAKKODY: Yes.

24 MR. LAIN: Well, I've included this extra
25 information here. It doesn't -- we're not talking

1 necessarily about the Reg. Guide, but we're talking
2 about something our group is working with that I
3 thought the Subcommittee might be interested in and
4 that is what we are doing with NFPA. Shortly after
5 805 was issued, DSSA requested NFPA to start working
6 on developing a Risk-Informed, Performance-Based
7 Standard for advanced reactors. 804 was the current
8 deterministic standard for advanced reactors and 805
9 was limited to existing light-water reactors. So we
10 noted the gap there and we requested NFPA to --

11 MR. APOSTOLAKIS: Now, advanced reactors
12 are Gen 4, Generation 4?

13 MR. LAIN: Yes.

14 MR. APOSTOLAKIS: Now, these are still
15 trying to prove feasibility, selecting materials, and
16 so on, and it seems to me that for a fire PRA, you
17 really need some idea of how the plant will be laid
18 out.

19 MR. LAIN: Well, I think what we're also
20 talking about could have been used for the AP 1000 and
21 could have been used for the --

22 MR. APOSTOLAKIS: Gen 3?

23 MR. LAIN: Yes, the ESBWR.

24 CHAIRMAN ROSEN: So let me be clear. This
25 is for AP 1000, the slide we're looking at now?

1 MR. LAIN: Well, AP 1000 has already been
2 reviewed to 804.

3 CHAIRMAN ROSEN: Okay. So it's not for AP
4 1000?

5 MR. LAIN: Right. It could have been used
6 if --

7 CHAIRMAN ROSEN: If it were available?

8 MR. LAIN: -- if it was available. So the
9 Technical Committee is wrestling with that. Is it
10 the, you know, the revolutionary plants versus the
11 evolutionary plants. We're trying to, I think, --

12 MR. APOSTOLAKIS: I think if somebody
13 decides to build an AP 1000, there is nothing to stop
14 them from using 805. Is there?

15 MR. LAIN: Except --

16 MR. APOSTOLAKIS: It is a light-water
17 reactor.

18 MR. LAIN: Yes, except it's part of the
19 Applicability Statement within it. It says "existing"
20 light-water reactors. So it would, you know, it would
21 have to be -- right now, we're taking it on a case-by-
22 case basis. And so, you know, the NRC would have to
23 review what they did and decide whether it would be
24 applicable to use it.

25 CHAIRMAN ROSEN: Is there some technical

1 issue you know about now for AP 1000 and other --

2 MR. APOSTOLAKIS: ESBWR.

3 CHAIRMAN ROSEN: ESBWR, any other light
4 water reactor that's existing?

5 MR. LAIN: No, but what we're doing with
6 that standard is we are raising the bar. The
7 Commission, at some point, said, you know, with the
8 new reactors, with new built, we shouldn't allow
9 twenty-foot separations. So in the Nuclear Safety of
10 Safe Shut-down Systems, we've raised the bar and
11 eliminated the twenty-foot separation between cables
12 with no limits.

13 CHAIRMAN ROSEN: So there is some
14 technical issue --

15 MR. APOSTOLAKIS: We shouldn't allow it.
16 We should not require it.

17 MR. LAIN: We -- I think it's -- it should
18 not allow it.

19 CHAIRMAN ROSEN: Right now, a twenty-foot
20 separation is enough to separate two redundant plants?

21 MR. LAIN: Two redundant, yes.

22 CHAIRMAN ROSEN: And what you're saying is
23 it won't be enough in huge plants?

24 MR. LAIN: Right.

25 CHAIRMAN ROSEN: Just pure separation of

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1 that amount wouldn't be adequate?

2 MR. LAIN: Yes. So this gives a short
3 schedule. We've -- the Technical Committee for
4 Nuclear Facilities established subcommittees last
5 summer and a rough draft has been assembled this past
6 April. And we'll see. We'll continue to work on this
7 draft and it will be issued for public comments next
8 May and comments will be reviewed and, hopefully,
9 we'll have something in 2008. And NRR also needs it.
10 We need to start working on a plan on how we're going
11 to implement this new standard, but we don't
12 necessarily have anything in the works right now to
13 look at, you know, are we going to do rule-making or
14 just still use it on a case-by-case basis. That is
15 something our group needs to look at. We'll put it on
16 our list of things -- items to work on in the future.

17 CHAIRMAN ROSEN: Okay, are you finished?
18 I guess that's your last slide.

19 MR. LAIN: Yes, I'm done and I'll hand it
20 over to Mr. Radlinski here.

21 MR. RADLINSKI: Okay. My name is Bob
22 Radlinski. I'm a licensed Fire Protection Engineer
23 working in Sunil's group and I'm going to talk about
24 the Regulatory Guide for the NFPA Fire Protection
25 Program.

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1 The Reg. Guide has two basic purposes.
2 One, of course, is to provide specific guidance that
3 is acceptable to the NRC for the implementation of a
4 Risk-Informed, Performance-Based Fire Protection
5 Program. The other is to provide licensees with a
6 basis for assessing the potential impact of
7 transitioning to an 805 program so they can adequately
8 assess whether they want to make the transition or
9 not.

10 To achieve those purposes, Number One, the
11 Reg. Guide endorses two industry guidance documents.
12 The first is NEI 04-02, which provides -- it's about
13 a 200-page document that provides rather detailed
14 guidance on the implementation of an 805 program. The
15 other is NEI 00-01, which provides guidance for doing
16 post-fire safe shutdown circuit analysis. The Reg.
17 Guide avoids repeating the information that's in these
18 guidance documents, but we do include emphasis in the
19 area that we consider E-guidance issues. It addresses
20 exceptions to NEI 04-02 and there may not be any at
21 the rate we're going. We're getting pretty close to
22 reaching full agreement. One that has to remain as a
23 -- there is a section in NEI 04-02 on the use of
24 Performance- Based methods for plants that do not
25 transition to 805 and that is not something that we're

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1 addressing. It's not addressed in the Reg. Guide.
2 It's not addressed in the Rules. So that's sort of an
3 administrative exception, but other than that we're
4 pretty close to a hundred percent agreement on the
5 interpretation of this.

6 CHAIRMAN ROSEN: Well why would -- why
7 would NEI leave it in there if you've decided not to
8 allow that?

9 MR. RADLINSKI: Well, it's not that we
10 don't allow it. It's an acceptable use of the
11 methods. A licensee can choose not to transition,
12 making full transition to an 805 license basis, but
13 yet, they can use methods. But they would have to use
14 them as the basis for an exemption request.

15 CHAIRMAN ROSEN: Oh, I see.

16 MR. RADLINSKI: Their License Amendment
17 Request. They couldn't just use it without any type
18 of -- without going through NRC approval.

19 It also provides high-level guidance on
20 the License Amendment Requests, the transition from
21 the current license basis to an 805 license basis,
22 guidance on enforcement discretion and on the
23 documentation that the licensee must have, both during
24 the transition and post-transition for maintaining
25 this program.

1 It identifies suggested fire models that
2 can be used and also provides high-level guidance on
3 fire PRAs. There was, I believe, a presentation
4 earlier this month on both fire models and the PRAs.

5 And lastly, it describes the staff
6 position on 805, the 805 Appendices, which 805 does
7 not necessarily endorse nor does the Rule endorse,
8 however, there is useful information, useful guidance
9 in the Appendices, so we include that -- some guidance
10 in the Reg. Guide as to which aspects of those
11 Appendices we consider to be acceptable.

12 DR. DENNING: Could I address the next to
13 the last bullet there? "Clarifies acceptable fire
14 models and fire PRAs." When we heard earlier this
15 month, I guess, the status of some RES activities, it
16 certainly looked like, as far as fire PRA is
17 concerned, that the work that's ongoing is very
18 important that the current state of fire models --
19 fire PRA -- I'm sorry -- is certainly not at the level
20 of Level One PRA internal events. And as we look at
21 fire models and the V&V of those fire models, there's
22 a lot of work still required towards determining
23 acceptable -- what's acceptable for V&V are those
24 models. And I have grave concerns about what the
25 standards are for V&V fire models. I have concern

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1 that we'll go through certain validation exercises and
2 even though the uncertainties are extremely large,
3 they will now be recognized in the validation and will
4 bless a certain model and say, "It's now V&V." Then
5 the applicant -- not the applicant, but the utility
6 has the ability to use a V&V model without a lot of
7 regulatory oversight, as I see it, as to whether
8 they're truly recognizing the very broad uncertainties
9 that exist in those models. So the question is how do
10 we go forward with the Regulatory Guide at this point
11 when the state-of-the-art is limited and why wouldn't
12 we wait two years or whatever is required to -- for
13 the state-of-the-art to catch up? Because I think
14 that the current state of V&V of the models in here is
15 inadequate. So that's my question.

16 MR. WEERAKODY: I'll take that. Dr.
17 Denning, I saw the preliminary wording of the same
18 document. Now I'm speaking about the fire models
19 where the office of Research as we read four of the
20 five, completed four of the five fire models and
21 provided answers on a number of key parameters on the
22 five models. I walked away with a totally different
23 conclusion than -- from the same data. And I'll tell
24 you why. I think the information that Research has
25 put together is sufficient for us to not just do risk

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1 assessment, but a good grip on the uncertainties and
2 safety margins. And if you bear with me for this long
3 answer, let me bring a separate example from a
4 different agency that I was in charge of heavy loads.
5 Okay, you have cranes that are good for a hundred tons
6 and sometimes we'd get questions from licensee because
7 they have to lift loads higher than a hundred, a
8 hundred ten tons. Consequently, I talked to my, you
9 know, guy who's responsible and I said, "How much
10 safety factors are there?" He said, "Oh, five, ten."
11 So, in other words, my point is to put things in
12 context, no matter what data you go to, you find those
13 same kinds of uncertainties. So, to me, when I see
14 the V&V documents, not only do I know I have these
15 five models, but I know my range of uncertainty. And
16 I believe, in some of those models, with some
17 parameters, if the answer is one, they would say it
18 may be as high as ten. And in a number of other
19 things like C-fast (phonetic), the answer is one, then
20 range could be .9 to .7. Now, the reason I am very
21 optimistic about those things is if you look at how
22 plants have been in an 805, not only do they have to
23 meet CDF, they have to meet something called the
24 Safety Margin. And if you read the verbiage in Reg.
25 Guide 1.174 for Safety Margin, one of the things that

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1 they mention is calculation of uncertainty. So this
2 is -- I'm sort of thinking ahead into the Inspection
3 area now. So if I tell an Inspector, "Look, has that
4 licensee properly used the models?" the first question
5 the Inspector would ask is, "Did you or NRC do a V&V
6 of this model?" And if the Inspector is doing that
7 evaluation of the safety margin, I have the perfect
8 tool. Research has provided me the perfect tool to
9 make an assessment on that because my other counter
10 point in terms of waiting is that as with any other
11 highly complex areas, we will never be there to that
12 level of perfection, but I think right now we have
13 enough of a perfect tool to move forward. So that is
14 -- I know it was a long answer, but I think this is
15 something that I have been struggling with. I don't
16 know whether --

17 MR. HANNON: This is John Hannon again.
18 Let me just supplement what you said, Sunil, because
19 I don't -- I don't want anyone to get the impression
20 that we don't have any Regulatory Oversight here. We
21 will, and you'll hear more about that later when Rich
22 Dipert talks about our Inspection Program. As Sunil
23 mentioned, we are going to be looking at the use of
24 these fire models during our Inspection Program, so
25 it's not like the licensees are out operating without

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1 any oversight at all. And we will have the
2 opportunity to come in and check what they're doing
3 and make sure it's reasonable. So there is Regulatory
4 Oversight being provided in the program. We'll hear
5 more about that later when Rich talks.

6 MR. RADLINSKI: The next few slides are
7 going to talk about is some of the key issues and the
8 basis for an issue. A key issue is that we weren't
9 necessarily in alignment with NEI on these issues and
10 we discussed them and we have now come to agreement
11 for the most part.

12 The first one is what constitutes NRC
13 approval to get existing program elements. The Reg.
14 Guide identifies two types of documentation that we
15 clearly represent or constitute NRC approval, one of
16 which, of course, is SER and the other would be
17 approved Exemption Requests and Deviation Requests. It
18 also identifies a couple of types of documentation
19 that we do not consider to constitute NRC approval,
20 and those are the Inspection Reports and Meeting
21 Minutes.

22 The 04-02 document lists a number of other
23 documents that they consider to constitute NRC
24 approval and we're taking the position that those need
25 to be addressed or evaluated on a case-by-case basis

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1 before we can say that they are actually basis for NRC
2 approval. We continue to work with OGC on this and
3 try to increase the list of documents that are
4 considered from concept through approval.

5 CHAIRMAN ROSEN: And this is important
6 because licensees have relied on those kinds of
7 documents that exist on their dockets for making
8 decisions in their current fire protection programs?

9 MR. RADLINSKI: That is correct. And some
10 licensees consider their fire protection design
11 documents as being the basis for -- their license
12 basis and that they don't require NRC approval, that
13 they have essentially been accepted as the basis for
14 their design.

15 I would also like to point out that if we
16 aren't able to achieve a hundred percent alignment
17 with NEI on this issue, that we expect that during the
18 Pilot Programs we'll be able to identify other samples
19 or types of documentation that we would consider to be
20 acceptable. That will be addressed in a future
21 addition or revision to the Reg. Guide.

22 CHAIRMAN ROSEN: Well, I'm just thinking,
23 wondering how a licensee could think that a document
24 is acceptable to you if you haven't reviewed it. For
25 instance, an internal document of any kind, whatever

1 its position in the document hierarchy. It seems
2 obvious, but that is not always the case.

3 MR. RADLINSKI: The other issue is how to
4 address plant changes and, when I say "plant changes,"
5 that includes both modifications of the plant -- and
6 that obviously is the changes -- but also identify
7 deviations, a licensee or an Inspector, identify
8 something that deviates from Regulatory requirements.
9 It can either be corrected, of course, by the licensee
10 or it can be addressed as part of a plant change
11 evaluation using their procedure.

12 The Reg. Guide provides high-level
13 guidance on screening of changes that we would
14 consider not to be really plant changes that don't
15 need to be addressed as a plant change,
16 inconsequential changes that have no impact on the
17 Fire Protection Program. We're still working with NEI
18 on this issue. They have some examples in their
19 documents. They have some criteria. We are not in
20 full alignment for either of those, but we hope to be
21 before we issue our respective documents.

22 DR. DENNING: Excuse me. Can we get a
23 little more specific about Delta CDFs and Delta LERFs
24 and all that kind of stuff that are in Section 5 of
25 the NEI 04-02 and what your position is on those? I

1 noticed that on Page 52, they talk about the ability
2 to make changes that are fire related, but without a
3 fire PRA. And then there are Delta CDFs and Delta
4 LERFs that are discussed there. It isn't clear to me
5 how you make that -- how you really know that you can
6 allow a positive increase in CDF if it's an internal
7 events. I mean, I'm interpreting it based on this as
8 being because they didn't have a fire PRA, that their
9 Delta CDF is an internal events change. And I agree,
10 it's small, but I have no idea how the -- what the
11 implications are to the true overall CDF. I'm talking
12 right now in that second paragraph on Page 52. It
13 says --

14 MR. WEERAKKODY: The paragraph that starts
15 with "The PRA CDF"?

16 DR. DENNING: Yeah, yeah, that's right.

17 MR. RADLINSKI: Well, first of all, let me
18 just say -- high level. When you're in to this level
19 of evaluation, you're into the plant change process.

20 DR. DENNING: Yes.

21 MR. RADLINSKI: This is not something that
22 we screen out as not being a change and doesn't have
23 to be evaluated. So if you're looking at CDF, you're
24 in the plant change process.

25 DR. DENNING: Yes.

1 MR. RADLINSKI: CDF is not a basis for
2 screening anything out of the process.

3 DR. DENNING: Right, but you're -- but you
4 would allow, without review by the staff, as I
5 understand here, they could then make an assessment
6 that they could make a plant change, right?

7 MR. RADLINSKI: Correct.

8 DR. DENNING: It has fire implications and
9 there are some criteria here that relate to, it looks
10 to me like, internal events PRA changes, and without
11 specifically looking at what the Delta CDF is, as it
12 relates to fire, they could make a change that
13 increases risk. I don't quite understand what the
14 rationale is by which we would allow that.

15 MR. WEERAKKODY: The question is how can
16 you say something is related and then if ten to the
17 minus seven --

18 CHAIRMAN ROSEN: Well, they're saying --

19 MR. WEERAKKODY: -- they are not going to
20 ten to the minus seven unless we have done a
21 quantification.

22 CHAIRMAN ROSEN: Yeah. Well, it sounds to
23 me like the only basis they have for saying it is less
24 than ten to the minus seven is that the impact of that
25 change on internal events is less than ten to the

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1 minus seven. But that doesn't give me any
2 understanding of what it is with regards to total
3 risk, which would include the fire risks. And these
4 are fire risk related changes.

5 MR. APOSTOLAKIS: I think we have answered
6 it, so can we proceed with the presentation?

7 CHAIRMAN ROSEN: You can proceed with the
8 presentation.

9 DR. DENING: The ten to the minus seven
10 for Delta CDF, if you look at Figure 5-2 on the
11 preceding page, is even lower than what the staff
12 approved for Region 3. Right? It is an order of
13 magnitude lower? So maybe somebody thought that if
14 you have such a low Delta CDF, it doesn't really
15 matter what the CDF is. And that was their
16 supplemental, Regulatory Guide 1.174.

17 CHAIRMAN ROSEN: They're saying you could
18 add fire risk if you're very, very low. You can add
19 some fire risk without knowing how much.

20 MR. APOSTOLAKIS: Without knowing how
21 much?

22 CHAIRMAN ROSEN: Well, it looks like --

23 DR. DENNING: You don't have a fire PRA.

24 CHAIRMAN ROSEN: -- if you don't have a
25 fire PRA, the way you would assess it, presumably, is

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1 just on the basis of a change in internal events, but
2 that may not be the case. I think it -- there is a
3 lot of interpretation.

4 MR. APOSTOLAKIS: No, it's not on the
5 basis of internal events; it's on the basis of, you
6 know, this limited PRA. You are doing a fire related
7 small PRA and, you know, if everything else drops out,
8 then you are calculating a Delta CDF. You don't need
9 the specific PRA to do that. I mean, you don't need
10 the whole plant PRA because the common elements drop
11 out when you go to the Delta.

12 CHAIRMAN ROSEN: But if you read that
13 paragraph, George, the last sentence says, "If an
14 existing fire PRA or IPEEE is available, it should be
15 used to obtain a Fire Induced CDF and level of
16 contribution for the plant." Implying that there is no
17 quantification.

18 MR. APOSTOLAKIS: So how do they get the
19 ten to the minus seven? No, you're -- I think it
20 comes back to your comment about the small, you know,
21 you're changing, say, -- let's say you are removing a
22 fire barrier between two divisions. Okay? And you're
23 doing the calculations there, by how much would the
24 frequency of fire, common cause fire, go up by the
25 removal of that thing. Okay? And then you manage to

1 go all the way to core damage frequency from there.
2 You see, the Delta CDF is this. But I don't know what
3 the total CDF is. I can do a sequence calculation,
4 but I'm not doing the full plant. So I can calculate
5 Delta CDF, but the point is by then they are putting
6 an uncertainty requirement that it should be even
7 lower than what the staff allows for the Region 3.
8 Right? That's what they are doing.

9 And the next question is, I mean, we keep
10 talking about all those huge uncertainties we have,
11 can you really trust the number that is ten to the
12 minus seven in this field?

13 I don't know what it means, but again,
14 this general philosophy of trying to do things without
15 the necessary infrastructure, where your PRA or --
16 it's really very disturbing after awhile. I mean, I
17 can see how one can stretch things and do things, but
18 to call this a Risk-Informed, Performance-Based
19 approach and then say if you have a fire PRA, wow! So
20 what kind of a Risk-Informed, Performance-Based
21 approach is this? And how many -- I mean, all these
22 plants that you mentioned earlier that may submit a
23 Letter of Intent to do this, do they have fire PRAs?

24 MR. WEERAKKODY: The plants that are?

25 MR. APOSTOLAKIS: Yes, what you mentioned

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1 earlier.

2 CHAIRMAN ROSEN: The Progress Energy
3 Plants.

4 MR. WEERAKKODY: Yes, they --

5 MR. APOSTOLAKIS: What do they do?

6 MR. WEERAKKODY: Yes, this is from --

7 MR. MARION: Alex Marion, NEI. If I might
8 respond to that question. The two utilities that have
9 announced tentatively or permanently their intentions
10 to make the transition plan to develop a fire PRA.

11 MR. APOSTOLAKIS: But they must have done
12 an IPEEE.

13 MR. MARION: Yes, as a minimum. And we'd
14 recommend --

15 MR. APOSTOLAKIS: So you will update those
16 studies --

17 MR. MARION: Yes. We'd recommend it to
18 utilities that if they're going to move forward with
19 this transition that a fire PRA is practically
20 mandatory because you can't do the quantification
21 without it.

22 MR. APOSTOLAKIS: But again, listen to
23 what this says. "... if an existing fire PRA or IPEEE
24 is available ..." We have all agreed for a long time
25 the IPEEE is not good enough.

1 MR. WEERAKKODY: Yeáh, Page 12 of the Reg.
2 Guide specifically refers to IPEEE. So evidently, the
3 whole --

4 MR. APOSTOLAKIS: I mean, as a matter of
5 fact, I mean, they will have to do a fire PRA because
6 otherwise you can't communicate with the stuff. But
7 this idea of -- no, you don't put it on paper. We can
8 do all this without the risk assessment. I don't know
9 why we have to fight this all the time. And this
10 gives a false impression that the fire PRA and the
11 IPEEE are equivalent because it says if one or the
12 other is available.

13 Maybe we can extrapolate and you can do localities
14 without similar hydraulic models.

15 MR. WEERAKKODY: We got the message. But
16 I think, as you've heard, we got the message, but
17 there are a couple of other things there that bear in
18 here. As you know, the Reg. Guide can't go out of the
19 envelope of the Rule itself. It couldn't use a Reg.
20 Guide for refinements. So it -- as Alex Marion said,
21 and we have said in every public forum that it doesn't
22 make sense to go to an 805 without a fire PRA.

23 MR. APOSTOLAKIS: Okay, you are in a very
24 awkward position. You cannot impose new requirements,
25 that is true. On the other hand, you cannot really

1 put statements together that are not true. And we all
2 know that the fire PRA and the IPEEE are not the same
3 thing.

4 CHAIRMAN ROSEN: No, if it is conveying
5 that, we agree it is not.

6 MR. APOSTOLAKIS: Well, if an existing
7 fire PRA or the IPEEE is available, it should be used
8 to obtain --

9 CHAIRMAN ROSEN: Remember, these are not
10 the staff's words, but you are endorsing them.

11 MR. WEERAKKODY: Oh, yes, yes. We are
12 endorsing it, so we are not saying it is NEI and then
13 -- no.

14 DR. BONACA: I mean if you are --

15 MR. APOSTOLAKIS: If you adopt this,
16 that's it.

17 DR. BONACA: The Reg. Guide is a regular,
18 you know, it's NRC and is specifically here on Page 4,
19 refers to IPEEE.

20 CHAIRMAN ROSEN: It does.

21 MR. APOSTOLAKIS: Let me ask what
22 endorsement means. Suppose I'm a licensee. And I'm
23 doing my thing and then I come to you with an IPEEE.
24 Okay, and I request whatever change. And you come
25 back and you say, "Well, gee, your IPEEE needs to be

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1 updated and all that." And I say, "No, no, it
2 doesn't." It says, "... if an existing fire PRA or
3 IPEEE is available..." You have to accept --

4 MR. WEERAKKODY: They couldn't do that.
5 They couldn't do that.

6 MR. APOSTOLAKIS: Why not?

7 MR. WEERAKKODY: That's because --

8 MR. APOSTOLAKIS: That's what it says
9 here.

10 MR. WEERAKKODY: The Rule requirement --

11 DR. GALLUCCI: This is Ray Gallucci from
12 Sunil's staff. That statement does not say that the
13 fire -- that an existing IPEEE or even an existing
14 fire PRA is adequate. All that statement is implying
15 is that you use that as a building block for the next
16 step. You could take the information that's in there.
17 It doesn't say that you can just take an internal
18 events calculation and superimpose a couple of fire
19 frequencies on it and use that. Although that tends
20 to be conservative, it's not always conservative
21 because the internal events does not necessarily
22 credit some of the systems; it may not include some of
23 the multiple spurious actuations. So I think that
24 statement -- maybe it's not clear enough, but it
25 doesn't say that you use the fire IPEEE or even an

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1 existing fire PSA as a substitute. You use that as a
2 starting point.

3 MR. APOSTOLAKIS: Well, it doesn't say it
4 explicitly.

5 DR. GALLUCCI: No, it doesn't, but that's
6 the implication.

7 MR. APOSTOLAKIS: Well, your endorsement
8 says clearly though, "The transition to an NFPA 805
9 based IPEEE does not require licensees to use a fire
10 probabilistic risk assessment model. However, without
11 the fire PRA, licensees may not realize the full
12 safety and first benefits of transitioning to NFPA
13 805." So it is a matter of benefits. This is a
14 loaded statement actually, isn't it?

15 CHAIRMAN ROSEN: Well, I think it sends
16 the message. Was that its intent? To send a message
17 to the industry that without a fire PRA, you may not
18 achieve the full benefits, which is to say the staff
19 may be less than over-awed by your lack -- by your
20 presentation.

21 MR. WEERAKKODY: Yes, it is intended to
22 send a message because we recognize that the Rule
23 necessarily doesn't require a fire PRA. But we want
24 the plants to know without that, any time they want to
25 make a significant change -- I'm not talking about

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1 bringing a barrel of oil and adding two hundred
2 barrels, but anything more progressive than that, the
3 staff and the licensee couldn't come to an agreement
4 on the risk there without a fire PRA. So you are
5 correct, Steve.

6 CHAIRMAN ROSEN: I think we've beaten that
7 one to death.

8 MR. WEERAKKODY: Yes. Can I say one
9 thing, please? I was looking for the applicable
10 Section 805 Rule. One of the things -- and I was
11 looking for the paragraph here -- reads -- says, "The
12 risk assessment should be based on the as-built
13 plant." In other words --

14 CHAIRMAN ROSEN: Where does it say that?

15 MR. WEERAKKODY: I have to find it and
16 point to the paragraph. The Rule itself -- I point to
17 this as the Rule because the Rule in this 805 -- there
18 is language here that tells practically you can't pull
19 out a IPEEE or likely to pull it and use that as the
20 basis for a good risk calculation. I'll find the
21 exact words and point to it.

22 MR. APOSTOLAKIS: But this ten to the
23 minus seven, I mean, it's thrown out there without any
24 warning. I mean, you really have to look at the -- go
25 back to the figure and realize that it's an inordinate

1 amount lower than the Regulatory Guides limit. Why?
2 Why such a silent thing? And then for LERF, it's the
3 same thing. If you compare it with 5-3, Figure 5-3,
4 the implication here, which may be true, is that if
5 you are so low, if your CDF is so low, it really
6 doesn't matter what your CDF is. I tend to agree with
7 that. It really doesn't. You can be anywhere you
8 want on the horizontal axis. The question is, of
9 course, how credible is the ten to the minus seven we
10 calculated, but that's a separate question.

11 MR. WEERAKKODY: Yes, very quick add to
12 what I said, lowering the number -- one number
13 magnitude below what's in the 1.174, you know, when
14 you do a change evaluation, you are looking at one
15 change. So obviously, anyone has a concern, okay, you
16 know, if it's a one circuit issue, you know, you've
17 got to hold individual issues to a higher threshold
18 than if cumulative. But if you want to -- because I
19 know you work with NEI.

20 DR. GALLUCCI: Well, remember that the
21 risk number by itself is not -- is necessary, but not
22 sufficient for a plant change. There is also the
23 defense-in-depth and safety margin and if one wants to
24 think of those in quantitative terms, essentially
25 you're talking about the uncertainty which can serve

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1 as the surrogate for the defense-in-depth and safety
2 margin. So if you're going to make a plant change and
3 you crunch out a ten at the minus seven, you also need
4 to satisfy the Reg. Guide 1.174 Defense-in-Depth and
5 Safety Margin, which, to me, implies that if you were
6 to do a purely quantitatively, you would have already
7 calculated that the uncertainty on that ten to the
8 minus seven is going to be small enough or tiny enough
9 that you feel that you're -- and certainly below ten
10 to the minus six, even with a reasonable uncertainty.
11 So, again, the plant change process, you always have
12 to go through that step that says Defense-in-Depth and
13 Safety Margin. The risk number by itself is
14 necessary, but not sufficient.

15 MR. APOSTOLAKIS: Well, I can't imagine
16 that a calculation that shows that you have a Delta
17 CDF of ten to the minus seven will be rejected on the
18 basis of safety margins. I mean, ten to a minus seven
19 is ten to a minus seven.

20 MR. WEERAKKODY: I -- if I --

21 MR. APOSTOLAKIS: By the way, there is an
22 excellent discussion of safety margins in this. That
23 was very good. There are some good elements in this.

24 MR. WEERAKKODY: George, I -- and I have
25 a slightly different opinion there -- because I think

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1 the DID is there, and especially with things like the
2 fire models where, like, Dr. Denning pointed out,
3 things are not perfect; we have a lot of
4 uncertainties, so obviously if somebody came in in the
5 minus seven, we would look at differences.

6 MR. APOSTOLAKIS: I know you would, but
7 I'm saying the chances are that the Defense-in-Depth
8 and Safety Margins have not been affected
9 significantly.

10 MR. WEERAKKODY: Oh, yes. Yes, we agree.

11 MR. APOSTOLAKIS: Because, my God, the ten
12 to the minus seven is so low, so low. It's like your
13 extra barrel of oil, you know.

14 MR. WEERAKKODY: Yes.

15 MR. APOSTOLAKIS: But I guess, you know,
16 you can argue about some serious points here, but what
17 really bothers me is this constant -- the attitude
18 that, you know, you really don't need to do much; you
19 can use this; don't worry about the underlining thing,
20 and I don't understand that. When everybody included
21 in this just says that, in practice, yeah, you would
22 have to have the fire PRA, so why then write it this
23 way? To satisfy whom? Who is scared so much -- I
24 mean, if they don't want to do it, don't do it. But
25 to say this is a Risk-Informed approach and then have

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1 statements, "... if a fire PRA is available ..." so
2 what kind of a Risk-Informed approach is this?

3 MR. WEERAKKODY: We look at both -- I
4 understand where you're coming from. We look at both,
5 I think. First off, Section 2.433 --

6 MR. APOSTOLAKIS: Of what?

7 MR. WEERAKKODY: This is -- you were
8 asking how or why a licensee can --

9 MR. APOSTOLAKIS: 2.2 of what?

10 MR. WEERAKKODY: This --

11 MR. PARTICIPANT: The NFPA Reg.

12 MR. APOSTOLAKIS: The NFPA.

13 MR. WEERAKKODY: And what it says is, with
14 respect to the PSA approach -- let me just read, "The
15 PSA approach methods and data shall be acceptable to
16 the 8J.

17 MR. APOSTOLAKIS: 2.2-what?

18 MR. WEERAKKODY: It is Page 805-11,
19 Section 2.433.

20 CHAIRMAN ROSEN: You don't have 805, do
21 you?

22 MR. WEERAKKODY: Oh --

23 MR. PARTICIPANT: This is an 805.

24 MR. APOSTOLAKIS: Oh, 805?

25 MR. WEERAKKODY: Yeah because that -- you

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1 have words there under Section 2.433 that tells you
2 that you can't -- you know, what you model in your PSA
3 has to be what's in that plant. So that's the Rule
4 and that overrides anything that -- the Reg. Guide or
5 anything I have.

6 MR. APOSTOLAKIS: See, I asked the
7 question earlier. Maybe we will talk about it later --
8 what exactly does it mean to transition to 805?

9 CHAIRMAN ROSEN: Well, we're going to --
10 we're going to get to that.

11 MR. APOSTOLAKIS: Some other time?

12 CHAIRMAN ROSEN: Yes, we're going to talk
13 about that.

14 MR. APOSTOLAKIS: Okay. So let's discuss
15 then --

16 MR. RADLINSKI: Right after the break, I
17 think, we're going to talk about that.

18 MR. APOSTOLAKIS: Okay. So why don't you
19 go ahead then?

20 MR. RADLINSKI: Okay. Alright, we're on
21 the second bullet with respect to plant changes again.
22 The Reg. Guide also emphasizes the need to perform the
23 integrated assessment of risk, Defense-in-Depth and
24 Safety Margin for all Fire Protection Program changes.
25 Okay. The key issue there or question was with

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1 regards to whether or not a risk assessment or risk
2 evaluation had to be done for all types of changes.
3 There's a little bit of grayness in the way it's
4 written in 805, but the position that the NRC is
5 taking is that this is a Risk-Informed Fire Protection
6 Program, so any changes to it must be evaluated for
7 the impact on overall risk. We emphasize that.

8 The Reg. Guide also endorses NEI 04-02
9 guidance with respect to the various methods of
10 evaluating changes, which include the deterministic
11 approach, the fire model, risk assessment, and any
12 combination of these to evaluate changes.

13 Another key issue, of course, is circuit
14 analyses. As I noted earlier, the Reg. Guide endorses
15 NEI 00-01, which is the industry guidance document for
16 performing post-fire safe shutdown circuit analyses.
17 It also -- the Reg. Guide also advocates addressing
18 spurious actuations using a Risk-Informed Performance-
19 Based approach. And it emphasizes that Information
20 Notice 92-18 type failures should be considered.
21 Those are failure -- fire-induced failures to
22 protective circuits of motor operated valves to the
23 extent that the valve can be over-torqued and you
24 could damage the valve and then it would not be
25 functional after the fire.

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1 Finally, it provides guidance for
2 addressing the cumulative effects of changes, plant
3 changes involving circuits.

4 CHAIRMAN ROSEN: See, when you use the
5 word "advocates," in the second bullet, I'm puzzled.
6 Because I would have expected you to say "requires
7 addressing spurious actuation." Why is it that when
8 a licensee comes in and wants to make a change, and
9 says that it's going to be Risk-Informed, that he
10 wouldn't use the most modern way of looking at things
11 which is available, rather than not consider spurious
12 actuations? All you say is, "We think you ought to do
13 that."

14 MR. WEERAKKODY: Okay. That's -- do you
15 want to answer that?

16 MR. RADLINSKI: No, that's a policy issue.

17 MR. WEERAKKODY: In fact, this is
18 intentional, the use of the word, "advocate" rather
19 than "requires." If you look at the two areas which
20 has main fire protection legacy confusing, and those
21 two are circuits and the associated manual actions,
22 okay?

23 CHAIRMAN ROSEN: Right.

24 MR. WEERAKKODY: If you go to the manual
25 action rulemaking, the Agency has -- the whole Agency,

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1 including OGC, we have taken a common stock position
2 which says, "III.G.2 manual actions not allowed
3 without prior staff approval." and the Commission
4 agreed. So it's very clear what the expectations
5 there are and we use the word "require" there. So if
6 a plant transitions from, you know, the licensing
7 basis to 805, you basically say, "Hey, those things
8 are non-compliances and, therefore, if you want to
9 come back into compliance, you are required to do
10 this. The word "advocate" for circuit, is if you look
11 at a circuit area -- and I don't want to go to a whole
12 history of the circuit plan, but one of the drivers
13 there is the confusions, the multiple interpretations,
14 of the circuit issues. You know, how many -- what
15 should you populate? We have approved License
16 Amendments that said only one, but now we have data
17 that says, "No, more than one," and those need to be
18 addressed. But, Steve, I think we are in a sort of a
19 state of flux there, legally speaking. Again, we are
20 in the realm where legally we are in a volatile area,
21 but we know that if a licensee wants to go to a
22 regulatory stability, they should look at things from
23 a Risk-Informed manner, using the current data.

24 CHAIRMAN ROSEN: I'll come back to
25 George's point then. If the licensee doesn't want to

1 do this thing, then he doesn't have to. It's
2 voluntary. But if he does want to do it, then you
3 should -- it seems to me you should require the
4 consideration of spurious actuation. I'm not just
5 jawboning.

6 MR. WEERAKKODY: Okay. What we -- we have
7 something this is tied to. We have a generic letter
8 in the works that would do that. Okay. What we can do
9 is we can preempt the intentions of the generic letter
10 where we would tell the licensees, look, it's true
11 that we have approved the single spurious in the past,
12 but we have new data that says multiple can happen
13 and, therefore, you should consider and address that.
14 So that is in the works.

15 CHAIRMAN ROSEN: That's in a new generic
16 letter coming out?

17 MR. WEERAKKODY: Yes. Yes, sir.

18 CHAIRMAN ROSEN: So that would change this
19 "advocates" to "requires" once that is --

20 MR. WEERAKKODY: Yes, now if that generic
21 letter was issued, then I would say I am more inclined
22 to use the word "requires." I think -- but I think,
23 you know, for your information, like, for example,
24 Ocone, if you look at the Ocone's Letter of Intent,
25 they specifically say in their Letter of Intent that

1 they are going to use risk-informed multiple spurious
2 as their new licensing basis. And Progress Energy, I
3 don't object, but at a later time, you'll have to
4 comment on that. But the licensees -- just like
5 these, just like the fire PRAs, it doesn't make sense
6 for licensees to invest in the transition.

7 MR. RADLINSKI: Also, I mention in the
8 next slide, under Recovery Actions or Operator Manual
9 Actions, NFPA requires any circuit analyses that rely
10 on Operator Manual Actions to be done using
11 performance-based methods. So if your spurious
12 actuations are mitigated using -- by crediting
13 Operator Manual Actions, the NFPA requires that you
14 use the performance-based methods.

15 CHAIRMAN ROSEN: Well, that's helpful, but
16 it doesn't mean you have to identify it.

17 MR. RADLINSKI: It -- on the prior slide
18 now -- it says if you don't address spurious
19 actuations, you don't identify them, then you --

20 MR. PARTICIPANT: You have to identify
21 them. That's in 804.

22 CHAIRMAN ROSEN: You know, I come back to
23 the same thing. We're dancing around it. It's all
24 there. Every time we ask a question, you say it's
25 there; you have to do it. But we don't come out and

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1 say it. So it looks like the fire PRA discussion we
2 had a moment ago.

3 MR. WEERAKKODY: You're right. I think
4 you could put it that way, we are dancing around it,
5 but I think again, what we need to recognize is we are
6 trying to transition from the confusing legacy to the
7 clear expectation. So even for the Appendix R Plant,
8 Steve, they are going to have to deal with multiple
9 spurious actuations, and so does 805. But to say,
10 when we use the word "require," we look at and look
11 for clear Regulatory expectations in the circuits that
12 is not there with the Commission consensus. So if I
13 use the word "require" with the licensee, I make sure
14 that the Commission has agreed with me.

15 CHAIRMAN ROSEN: I don't know what else
16 needs to be said.

17 MR. RADLINSKI: Okay. What we refer to as
18 "Operator Manual Actions" are referred to in 805 as
19 "Recovery Actions," which includes and encompasses
20 both Operator Manual Actions and repairs. We don't
21 say a whole lot in the Reg. Guide about them. We do
22 mention that an unapproved Operator Manual Action,
23 credited in a III.G.2 area must be evaluated as a
24 plant change. And, again, per 805, it has to be done
25 on a performance-based approach.

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1 MR. APOSTOLAKIS: What does that mean,
2 using "Performance-Based methods?"

3 MR. RADLINSKI: As opposed to the
4 deterministic approach. You'd have to go into the
5 plant change process and evaluate it based on risk,
6 fire modeling, a combination of the two.

7 MR. APOSTOLAKIS: Oh. So, Delta CPF and
8 all that stuff?

9 MR. RADLINSKI: Sure.

10 MR. APOSTOLAKIS: This is considered
11 "Performance-Based?"

12 MR. RADLINSKI: Right.

13 MR. APOSTOLAKIS: Oh, I see.

14 CHAIRMAN ROSEN: And you have to use the
15 appropriate HRA methods?

16 MR. WEERAKKODY: Yes.

17 CHAIRMAN ROSEN: Considering all the
18 factors, the performance-shaping factors?

19 MR. APOSTOLAKIS: Which HRA method would
20 you use?

21 CHAIRMAN ROSEN: Well, considering
22 performance-shaping factors for the actions that are
23 being analyzed.

24 MR. APOSTOLAKIS: Yeah, but, I mean, I'm
25 serious. Which method do you have in mind?

1 CHAIRMAN ROSEN: I --

2 MR. APOSTOLAKIS: ATHENA?

3 MR. WEERAKKODY: No, I --

4 MR. APOSTOLAKIS: No? No, he says and he
5 laughs.

6 DR. GALLUCCI: It's Ray Gallucci again.
7 The licensee is free to use the one he chooses. You
8 don't have to --

9 MR. APOSTOLAKIS: How can you know that
10 that method is good enough?

11 DR. GALLUCCI: You test it out and you
12 check it with sensitivities and you see how robust it
13 is, but there's no advocated method. No one has ever
14 come up and said this is the perfect method. There --
15 obviously, there is some aspects that work better for
16 some techniques than others, but there's no -- there's
17 no approved Regulatory HRA method and there may never
18 be.

19 MR. APOSTOLAKIS: Well, we've been
20 investigating this topic now for more than ten years.
21 And we still don't have it.

22 MR. WEERAKKODY: Well, we have -- I would
23 say that where we have used with consensus agreement,
24 like when I was in the Office of Research for the
25 accident sequence, because of the program, we used

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1 something called "ASCP." Again, no matter which HRA -
2 - like Ray said, no matter which HRA method you take,
3 there's going to be uncertainties and so we deal with
4 that through the requiring of the Defense-in-Depth and
5 the Safety Module.

6 MR. RADLINSKI: Okay, that's it for the
7 key issues. I'm going to address in the Reg. Guide
8 this one last slide here before the Conclusion with
9 respect to the burden on licensees. Again, this is a
10 voluntary rule so the Reg. Guide provides guidance for
11 implementation of the rule. It does not cause any
12 undue burden to the licensees.

13 On the other hand, there will be an Impact
14 Report on licensees who perform the transition and to
15 maintain the program. The Reg. Guide provides
16 guidance or provides a basis for a licensee to assess
17 what that impact would be.

18 So, in conclusion, the Reg. Guide does
19 provide licensees with specific guidance on the
20 implementation of an 805 Fire Protection Program. The
21 Reg. Guide also does not cause any undue burden to
22 licensees and it provides suitable guidance to
23 licensees to assess the impact of adopting a Risk-
24 Informed, Performance-Based Fire Protection Program.

25 MR. APOSTOLAKIS: So "Performance-Based"

1 means using those figures?

2 MR. RADLINSKI: Yes.

3 MR. APOSTOLAKIS: So why would there be a
4 "Risk-Informed" program without it being Performance-
5 Based? Is there such a thing as "Risk-Informed"
6 without "Performance"?

7 MR. WEERAKKODY: The Maintenance Rule was
8 --

9 MR. APOSTOLAKIS: Oh, that's an
10 interesting point because if he finds the targets for
11 the unavailability without redoing anything in Delta
12 CDF?

13 MR. WEERAKKODY: Yes, there are some
14 parallels, you know, even if you go back to the
15 Maintenance Rule -- again, it's been a while -- I'm
16 not sure Maintenance would have required a PRA, but
17 internally, you know, we had PRAs support the meeting.
18 And then Dr. Gallucci, Ray Gallucci, who is a Senior
19 Fire PRA Expert, if he was here, he would basically
20 one hundred percent agree with me and say fire PRAs
21 should be mandated for all plants.

22 MR. APOSTOLAKIS: If he was where?

23 MR. WEERAKKODY: If he was here.

24 MR. APOSTOLAKIS: I think he is there.

25 MR. WEERAKKODY: He would still say it.

1 MR. APOSTOLAKIS: Oh.

2 DR. GALLUCCI: I can say it from here,
3 yes.

4 (LAUGHTER.)

5 CHAIRMAN ROSEN: Well, on that note --

6 MR. APOSTOLAKIS: Can you explain to me --
7 I'm really perplexed now. Why this argument? I mean,
8 every step of the way, you know, let's make sure that
9 we don't demand the PRA.

10 MR. WEERAKKODY: Well, let me answer this,
11 Dr. Apostolakis. I know I've come here and I'm not
12 going to change your opinion on this, but -- that's a
13 compliment, okay? But when we put the Reg. Guide out,
14 our initial version said all changes will require risk
15 assessment. And one of the public comments that we
16 got from the industry is that, hey, you know, we don't
17 think so because they will pull out the same document
18 and they went to a different page and said we don't
19 think every change requires risk assessment. But on
20 one hand, we dug into their differences and said, you
21 know, where are they coming from, and then we did some
22 of our own research and we concluded, no, you do
23 require risk assessment. But at the same time, we
24 understood what was driving them, you know, because
25 when you say a change, and then you go and say, you

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1 know, what is the change. Anything could be a change
2 out there, so they were worried that down the line,
3 you know, five years from now, after their transition
4 to 805, you may have an Inspector who walks in with an
5 extremely different interpretation of what that is,
6 and basically for the smallest difference in the PRA,
7 require a full-blown risk assessment. So that was a
8 valid concern. The duplicity that you see, or the
9 lack of clarity you see there, you are not saying you
10 need fire PRAs and you need fire PRAs and a full-blown
11 risk assessment for every change is somewhat due to
12 that. And your asking Steve why we cannot satisfy it,
13 and I would say it is straightforward, honest answer,
14 you have to satisfy the licensees.

15 MR. APOSTOLAKIS: Okay. But if the
16 licensee calculates a Delta CDF, that goes way beyond
17 an Inspector walking around and saying something. The
18 guy's calculating a Delta CDF and he wants to do that
19 without a PRA. You know, and then the next thing is
20 what? He's going to calculate it without a PRA? No,
21 that would be, you know, completely black magic. This
22 is gray now, but -- so this is the problem. If, at
23 least, we stayed away from Delta CDF, I can understand
24 your point. We are doing certain things and we don't
25 always need a PRA. The moment you start saying I'm

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1 calculating Delta CDF and in the same paragraph it
2 says, now if you have a fire PRA, your life would be
3 easier. I have already calculated a Delta CDF. And
4 then, of course, it goes below even the smallest
5 allowed change in the Regulatory Guide. So, I mean,
6 we are really amending the Regulatory Guide here,
7 1.174.

8 CHAIRMAN ROSEN: Well, I --

9 MR. APOSTOLAKIS: Well, yeah. If you go
10 to 1.174, nowhere in there does it say that if it's
11 ten to the minus seven, you don't need a risk
12 assessment. And 1.174 is also a Regulatory Guide,
13 which has been approved.

14 CHAIRMAN ROSEN: Well, I don't understand
15 how you can say if it's 1.174, you don't need a risk
16 assessment because you -- the fact that it's saying
17 1.174 means you have a risk assessment. How do you
18 know it's less than ten minus seven without a risk
19 assessment?

20 MR. APOSTOLAKIS: I can see someone doing
21 a calculation with one sequence in one room and saying
22 the change is this. Somehow that can be done. You
23 don't need a full PRA to do that. But then when you
24 go and say that if that is less than ten to the minus
25 seven, that's okay even without the CDF, this is now

1 a very new and innovative use of the Regulatory Guide
2 1.174. It was not intended, anyway.

3 MR. WEERAKKODY: When you say, "The
4 amended 1. ..." is that because of the lower
5 threshold?

6 MR. APOSTOLAKIS: Yeah, that's what I'm
7 saying. It doesn't say that if you are below ten to
8 the minus seven, you don't need to worry about the
9 CDF. It says that the CDF is always there and if you
10 enter a CDF and Delta CDF and if you are here, you do
11 this. And if you are there, you do that. And now you
12 guys are saying, "No, no, no, no. If Delta CDF is
13 even lower than what the Guide says, we really don't
14 care about CDF." Now if 1.174 said that, then you
15 would be okay, but it doesn't say that. Now, it
16 doesn't preclude it either.

17 MR. WEERAKKODY: When you --

18 MR. APOSTOLAKIS: I don't know what to
19 say. I mean --

20 MR. WEERAKKODY: No, we cannot and
21 shouldn't be contradicting 1.174. I'm trying to
22 understand --

23 MR. APOSTOLAKIS: You are not
24 contradicting it exactly. You are expanding it.

25 MR. WEERAKKODY: Let me say we are

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1 building another layer of concern or something, or is
2 that --

3 MR. APOSTOLAKIS: It is not a concern; it
4 is just a novel application.

5 DR. BONACA: I appreciate any concern that
6 you may have that you would force using the cannon to
7 do any minute changes. That is a concern that I have
8 to have, but I am saying even if you put additional
9 clarity on the need for risk information, you can
10 still deal with the issue without having this kind of
11 confusion. It seems to me that, you know, you claimed
12 before with regard to the statement that advocates
13 addressing spurious actuations that these are the
14 Guides that provide nuclear education. There is much
15 more to it.

16 CHAIRMAN ROSEN: Well, it does and does
17 not.

18 DR. BONACA: I mean there is still this
19 confusion on, you know, how do you use the risk tools
20 and what sort of risk information do you use. It makes
21 reference to the IPEEEs. This advocates addressing
22 spurious actuations. I totally agree with Mr. Rosen
23 here that there should be clarity there and if there
24 is spurious actuation, you have to deal with it. So,
25 it's -- you know, again, I appreciate the concern of

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1 the industry that you would be forcing them to use
2 your full-fledged evaluations for any minor exemption.
3 Common sense has to help there.

4 CHAIRMAN ROSEN: Okay.

5 MR. APOSTOLAKIS: Let's take a break.

6 CHAIRMAN ROSEN: Yeah, I think we'll take
7 a break now until 10:15 a.m.

8 (Off the record at 10:00 a.m.)

9 (On the record at 10:17 a.m.)

10 CHAIRMAN ROSEN: We're back on the record.
11 Alex, I'll turn it over to you.

12 MR. MARION: Good morning. My name is
13 Alex Marion. I'm the Senior Director of Engineering
14 at NEI and I appreciate the opportunity for the
15 industry to provide an overview of the Guidance
16 document that we've developed for implementing the
17 NFPA 805 Rulemaking.

18 The industry, through NEI, has been
19 supporting the application of Risk-Informed and
20 Performance-Based approaches for a number of years.
21 The basic objective is to apply those methodologies so
22 that we can better focus resources on the part of the
23 industry as well as the NRC on matters that are
24 extremely important in terms of plant safety, and in
25 this particular case, in terms of fire risk.

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1 Let me just offer a perspective on fire
2 protection, historically, if you will. Despite the
3 best efforts of NRC and the industry to establish a
4 stable and consistent Regulatory Process, if you look
5 back over time, we keep raising or identifying these
6 issues related to compliance and we all recognize that
7 there are alternatives that are effective in terms of
8 dealing with the fire risk, although you still have
9 the compliance issue. And that's a fundamental
10 Regulatory challenge that you always have to deal
11 with, whether we're talking about fire protection or
12 any other Regulations. But more importantly, you've
13 had a continuing and diverse set of expectations and
14 interpretations in the Regulations over the years and
15 different processes involved. Let me just cite an
16 example with regard to manual actions. There have
17 been two processes that have been used in the industry
18 that deal with NRC review and approval or acceptance
19 of manual actions. One has been formal through the
20 Exemption Request Process and the other has been less
21 formal through documented information and Safety
22 Evaluation Reports Satisfaction Reports. Whether we
23 like it or not, that has been the accepted practice
24 over the past twenty-five/thirty years. Now, we're
25 trying to apply some stability and the Commission has

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1 decided that, okay, going forward, you will use the
2 Exemption Process or you will use this new Regulation
3 that's currently in the process of being developed,
4 which is fine, but we need to recognize that as we
5 move forward with the new Regulatory construct,
6 whether it be Manual Actions or whether it be this
7 particular Rulemaking, we don't want to lose sight of
8 the fundamental objective. The fundamental objective
9 is to have a consistent, stable process that allows us
10 to continually focus on safety and demonstrate to
11 anyone, internal stakeholders and external
12 stakeholders, that the plants are safe and the
13 programs we have in place are assuring that level of
14 safety over the longer term. We have an opportunity
15 with the NFPA to apply Rulemaking to do that. And
16 that is the best opportunity we've had since Appendix
17 R and 50.48 were issued.

18 There were some questions raised this
19 morning about why the utilities are making the
20 transition from a deterministic philosophy, if you
21 will, under 50.48 Appendix R, with all these
22 interpretations that allow alternative methods, but
23 deterministic framework nonetheless, to one that's
24 risk-informed and performance-based. The point was
25 raised about don't you need a fire PRA as a benchmark

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1 or foundation to make this transition. We absolutely
2 agree that a fire PRA is necessary. And the two
3 utilities that are -- one has officially announced
4 that they are going to make the transition for their
5 plants and another one is going to make the
6 announcement this afternoon -- plan to develop a fire
7 PRA. So they can optimize or maximize the benefit
8 with this transition.

9 CHAIRMAN ROSEN: I presume they're going
10 to use the new Guidance that just came out in the NRC,
11 as a result of the NRC and EPRI work on fire PRA?

12 MR. MARION: The vulnerability assessment?

13 CHAIRMAN ROSEN: No, the --

14 MS. KLEINSORG: Re-quantification.

15 CHAIRMAN ROSEN: -- re-quantification. Is
16 that a good assumption?

17 MR. MARION: Yes. Yes.

18 DR. WALLIS: That's also why the Agency
19 doesn't require it. Usually the Agency elects to
20 require things that you guys have some good reason why
21 you shouldn't, but if you guys want all industry to
22 have the PRA, what's the inhibition the Agency has
23 about requiring it?

24 MR. MARION: Well, the challenge to the
25 Agency is to demonstrate that there is a safety

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1 benefit in requiring PRAs and they have to go through
2 the back fit analysis, the Regulatory analysis to
3 demonstrate that the cost associated with
4 implementation of that requirement is commensurate
5 with the safety improvement.

6 DR. WALLIS: There seems to be a sine qua
7 non requirement. If you're going to use risk-informed
8 methods, you've got to have a PRA.

9 MR. MARION: Right. From an industry
10 perspective, we don't need the NRC to require us to
11 apply PRA.

12 MR. WEERAKKODY: But we are --

13 MR. MARION: We are doing that in a number
14 of areas already.

15 DR. WALLIS: With regards to the
16 implementation of this, and the Regulatory Guide,
17 would the industry object then if it said having a
18 fire PRA was a prerequisite to this risk-based, risk-
19 informed rather, approach?

20 MR. MARION: On a matter of principle, we
21 would.

22 DR. WALLIS: We're not saying you have to
23 have it, but --

24 MR. MARION: Because we don't --

25 DR. WALLIS: -- but if you wanted to use

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1 this.

2 MR. MARION: I understand, yes. We are
3 communicating that to the utilities, so I don't see
4 any value of NRC weighing in on that at this
5 particular point in time. It's being done.

6 DR. WALLIS: What was the matter of
7 principle?

8 MR. MARION: The fact that we don't need
9 the NRC to make that kind of statement in the
10 Regulatory Guide. It's not necessary. Because we are
11 doing it anyway. And the NRC weigh-in on this, in any
12 way, shape or form, brings into the process additional
13 trappings because it's an opinion, an interpretation,
14 an expectation, if you will, of the Regulator without
15 the discipline process of capturing a new Regulatory
16 position and all the trappings associated with it.

17 DR. WALLIS: One thing I'm concerned --

18 MR. MARION: I hate to get legalistic, but
19 that's one of the --

20 DR. WALLIS: -- about is the Agency doing
21 something that appears illogical, which is saying
22 we're going to have a risk-informed without having a
23 PRA as part of it. That seems so illogical.

24 MR. MARION: Well, I don't think that's
25 what the NRC is really saying, okay.

1 Anyway, I'd like to move on because we do
2 have some material I would like to cover. But I do
3 want to offer one more point and I would ask you to
4 think about it during the presentation. There were
5 comments made about compliance. What I would ask you
6 to think about is, what is it; what does it mean; how
7 is it established; how is it verified; and how is it
8 maintained. It sounds like a very straightforward
9 respond to those questions, but if you look back over
10 the history of fire protection under 50.48 and
11 Appendix R and you look at all the interpretations and
12 expectations, compliance isn't what you think it is.

13 I would just leave that thought with you,
14 and I would like to introduce Liz Kleinsorg who is the
15 Managing Partner with Kleinsorg Group Risk Services.
16 She's our contractor who's been devoted to developing
17 the Guidance document that we've put together for
18 implementation of NFPA 805 Rulemaking. With that,
19 Liz?

20 MS. KLEINSORG: Hi, I'm Liz Kleinsorg and
21 before we get started, I would like to talk a little
22 bit about my partners that helped develop this. I was
23 the team lead, but I had assembled a group of
24 individuals who are very well known and very excellent
25 in their fields. We had Andy Ratchford and myself

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1 worked mostly on the programmatic aspects of NEI 04-
2 02, the transition of the traditional Appendix R
3 information into the new Risk-Informed, Performance-
4 Based Rulemaking. We had Sheldon Trubatch as our
5 legal counsel and we had Kiang Zee who did our PRA
6 from Aaron Engineering. So, with that, I would like to
7 talk a little bit about -- I'm going to talk about the
8 transition process in a great amount of detail, and
9 talk to you a little bit about how the transition
10 process we see working. And it might add -- actually
11 shed a little bit of light as to why a -- how you can
12 transition into a PRA. So whereas a PRA, you can see
13 from the two utilities that are going to be doing the
14 transition, or considering the transition, they will
15 be embarking on developing new fire PRAs. But from a
16 transition perspective, and a timing perspective, it's
17 not required to start the transition process. And
18 you'll be able to see a little bit about that.

19 I'm mostly going to talk to you about the
20 change process. These are two real fundamental
21 backbones of the new NFPA 805 Regulation, and they are
22 the -- there are a few issues associated with that
23 that Bob touched on -- Radlinski -- touched on that
24 are still outstanding as far as we're concerned with
25 how we're going to finish up the NEI 04-02 document.

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1 Okay, let's go with the first slide. I
2 apologize for the blue background.

3 This is a big picture of what the
4 transition process is all about and it's more of a
5 "What kind of documents do you put together?" and
6 "What kind of phases does a utility go through?" You
7 notice there are three phases to the transition. This
8 is big picture now. Each phase ending with
9 documentation. So the preliminary assessment is,
10 "Well, should I go to NFPA 805?" And a utility makes
11 those decisions for lots of reasons. Duke has already
12 sent in their Letter of Intent. The Letter of Intent
13 triggers the enforcement discretion. So that's the
14 end of Phase One.

15 Progress Energy, who's here today also in
16 the back, they're also considering -- that's Jeff
17 Ertman from Progress -- they're also considering the
18 transition to 805.

19 The next phase is actually starting to do
20 the transition and it is required -- is a required
21 engineering analysis, the transition of your technical
22 documentation and your program documentation. Duke
23 has started with the project plan. I've been helping
24 them put together the project plan and the schedule.
25 It is about a year and a half to two years, I think

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1 they've got, for each plant because they want to put
2 them in in order. So -- sequential order.

3 What the second phase will end with will
4 be the License Amendment Request itself and it will
5 also end with the transition report. Now because Duke
6 is a pilot, we'll be going through a number of checks
7 -- the Pilot Assessment, I think you guys are going to
8 talk about that a little later today -- and we hope to
9 fine tune the NEI 04-02 process during that because we
10 do think that once we get real "into the process,"
11 there might be some fine tuning associated with
12 previously approved and some of the change
13 evaluations. And I'll talk a little bit more about
14 that.

15 DR. BONACA: And you said that the
16 Statement of Intent --

17 MS. KLEINSORG: Yes?

18 DR. BONACA: -- triggers the enforcement
19 discretion?

20 MS. KLEINSORG: That's correct.

21 DR. BONACA: In what sense are you --
22 what's the need at this stage?

23 MS. KLEINSORG: At this stage -- first of
24 all, enforcement discretion has got two sides to it.
25 It's the stuff that is known going in. So, for

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1 instance, Duke and -- both Duke and Progress Energy
2 have some known issues. So, if they haven't already
3 been colored up, they won't be put into the ROP
4 process, so that's part of it. And then, as we --

5 DR. BONACA: There is a statement that the
6 resolution of those issues will come as a result of
7 implementation of enforcement discretion?

8 MS. KLEINSORG: That's correct, and
9 anything else we dig up as we do the transition will
10 also -- as long as it doesn't meet the trigger
11 requirements, will be under enforcement discretion.

12 DR. BONACA: Thank you.

13 MS. KLEINSORG: Okay --

14 CHAIRMAN ROSEN: How long does that last?

15 MR. KLEINSORG: The enforcement discretion
16 is two years, I think, although it could be longer
17 than that depending upon individual utility requests.
18 Correct, Sunil?

19 MR. WEERAKKODY: Can be.

20 MS. KLEINSORG: Oh, sorry.

21 CHAIRMAN ROSEN: From the date of the
22 Letter of Intent?

23 MS. KLEINSORG: I think that's our
24 intention. It's a little gray right now, but I don't
25 know how you guys handled the Duke letter, so -- the

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1 Duke letter did request enforcement discretion.

2 CHAIRMAN ROSEN: Okay.

3 MS. KLEINSORG: Okay. So that's kind of
4 the big picture. Then Phase Two, when the License
5 Amendment Request goes in and the Transition Report is
6 submitted to the staff, the utility will continue to
7 work on the transition because there's going to be
8 program documents that have to change, processes that
9 will have to be changed, and have to be pre-stage, new
10 training that will have to be done to transition the
11 program. So the utility would start to do those kinds
12 of things, maybe even work on some modifications that
13 they intend to put in as part of this Risk-Informed,
14 Performance-Based Transition.

15 And then the last phase would end with the
16 actual License Amendment Request being granted.

17 So that's the big picture transition. I'm
18 going to talk a little bit about the technical details
19 of transition next. Next slide.

20 I added this because of all the
21 discussions that happened about transition while I was
22 with the NRC, I had the luxury of stuffing another
23 slide in. So I'm going to back up a little.

24 There really --

25 MR. APOSTOLAKIS: We don't have it.

1 MS. KLEINSORG: You don't have it, but I
2 can get you a handout. But I thought it was really
3 important because of all the questions you guys were
4 asking.

5 MR. APOSTOLAKIS: So you drew it this
6 morning?

7 MS. KLEINSORG: I did. I just whipped it
8 right up. I'm the queen of Visio.

9 (LAUGHTER.)

10 MR. MARION: She is that good.

11 MS. KLEINSORG: Yeah. We're going to talk
12 a little bit about Chapter 3 requirements of NFPA 805
13 and Chapter 4 requirements. These are, again, things
14 that we talked about and everybody around -- our group
15 knows what we're talking about. But Chapter 3
16 requirements are fundamental elements of a Fire
17 Protection Program and our minimum design
18 requirements. So they are the classical Fire
19 Protection Program aspects. Those get transitioned and
20 I'll talk a little bit about that.

21 The other side is Chapter 4, which you can
22 liken to the existing Appendix R requirements, the
23 protection of nuclear safety.

24 So what a utility will do is, as they
25 transition, is they will take their program, their

1 existing Fire Protection Program and compare it to the
2 fundamental elements and minimum design requirements
3 in Chapter 3. That's the left-hand side.

4 We're going to talk a little bit more
5 about that because there is a -- Chapter 3 requires
6 License Amendments. Changes from Chapter 3 are --
7 anomalies from Chapter 3, if you don't meet Chapter 3,
8 you're required to get a License Amendment with the
9 NRC and we'll talk a little bit about that in both
10 discussion of previously approved and discussion of
11 the change evaluation.

12 So the utility will go ahead and do that.
13 We have provided information in NEI 04-02 that takes
14 the old branch technical positions and compares them
15 to an FPA 805, Chapter 3, and allows the utility to
16 document how they're transitioning.

17 The other major aspect of the transition
18 is the transition on Nuclear Safety requirements and
19 that's the old Appendix R stuff. And that is -- does
20 not have the same requirement for the demonstration of
21 previous approval for a License Amendment Request
22 issue that the Chapter 3 requirements have. And I'll
23 show you a little bit more about that.

24 There are also two new aspects of 805 that
25 aren't in the current Regulation and that's

1 radioactive release assessment and the assessment for
2 non-power operational modes. Currently Appendix R
3 goes from power operations to shutdown. It does not
4 -- cold shutdown -- it does not look at what we do
5 during outages. And this will add another aspect of
6 the program.

7 So that's what the utility does during
8 transition. They true-up their fundamental elements;
9 they compare it; they see if they have any outliers;
10 they see if they have got previous approval. If they
11 don't have previous approval, they submit it to the
12 NRC for a License Amendment Request during the
13 transition process.

14 They also do the same thing on Nuclear
15 Safety. They go through each fire area; they go --
16 actually, they go through their methodology; true it
17 up against NEI 00-01's methodology; identify outliers;
18 justify those to the NRC; and then they do a fire area
19 by fire area comparison.

20 And Alex pointed out, and I want to
21 reemphasize, that one of the reasons -- one of the
22 underlying reasons people are going to 805 is to clean
23 up twenty-five years of licensing, to make it clearer.
24 So it doesn't do a utility any good to go gray today,
25 gray tomorrow. Our big thing is safe today, safe

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1 tomorrow. It does a utility no good not to clarify
2 their license and basis as they go forward. And we've
3 made that clear also in NEI 04-02 in the latest
4 revision, about things that are topical and subject to
5 confusion should be clarified in the documentation
6 submitted to the NRC.

7 In the programmatic aspects down at the
8 bottom, monitoring programs have to be established if
9 you're going to use Risk-Informed, Performance-Based
10 change evaluations and solutions. You have to monitor
11 the basic assumptions that go into that or the basic
12 premise that go into that to make sure that the
13 underlying assumptions don't change during the life of
14 the plant. We currently don't think that's a big deal
15 because we have monitoring programs; they're just old
16 -- they're more less risk-informed and they will be
17 more risk-informed going forward. A great example is,
18 from a monitoring perspective, is combustible loading.
19 Utilities now have these combustible loading tracking
20 programs and they are allowed to bring so many BTUs
21 into a fire area. Going forward, if you're using
22 risk-information and performance-based information --
23 as I like to say, all BTUs aren't created equal --
24 it's no longer important how many BTUs, but what the
25 field package is and where it's placed, so that you're

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1 monitoring a different aspect of the program going
2 forward. So that's how the programmatic functions
3 will change.

4 We'll confirm adequate documentation and
5 quality control. We have a Guidance portion in
6 Appendix -- I think it's "Charlie" of the document, as
7 to what the documentation would look like going
8 forward for an 805 plant and then the Regulatory
9 submittal and approval.

10 So that's kind of transition in a big
11 picture perspective. Any questions so far?

12 (NO RESPONSE.)

13 Okay. Next slide, please. Okay, this is
14 a batch of handouts.

15 One of the big sticking issues with the
16 staff in the industry in the completion of NEI 04-02
17 and its endorsement in the Reg. Guide is the issue
18 about previous approval. This plays importantly into
19 Chapter 3 because if you can show that you don't meet
20 a Chapter 3 requirement, but you have previous
21 approval, as documented in the -- in SERs or Exemption
22 Requests, then you don't have to meet the Chapter 3
23 requirement. If you can't meet the burden of previous
24 approval, then it requires a License Amendment
25 Request.

1 One of the big discussion points we had
2 with the staff was, well, in 1978, '81, '85, whenever
3 we got our SER, we had a program defined. Then we
4 adopted the Standard License Condition, which allows
5 us to make changes without previous approval from the
6 NRC. So, for instance, if I had told the NRC I had
7 two fire pumps -- and I had an SER, so I had two fire
8 pumps -- probably not a good example, but bear with me
9 -- and over the life of the plant, I made some change
10 and I did my 50.59 process which shells out to the
11 Fire Protection Regulatory Review Process and it said,
12 oh, I can make this change without prior Regulatory
13 approval. That new change may no longer meet Chapter
14 3. So, whereas, we can claim we're in compliance with
15 our current licensing basis and our current program,
16 we can't claim previous approval if it no longer meets
17 the Chapter 3 requirement. And I think we've actually
18 come to agreement on that portion. So we can claim
19 we're still in compliance with our program, but we
20 cannot claim that it meets Chapter 3's previous
21 approval test. That was a huge sticking point for us.
22 Because, you know, we have changed the plants over the
23 years, quite a bit. We're allowed to by our
24 Regulatory basis. So I think we've come to terms on
25 that.

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1 Any questions on that part of it?

2 MR. MARION: Yeah, if I might add, that's
3 one key aspect of maintaining the licensing basis that
4 we feel, from a process point of view, carries over
5 and should carry forward.

6 MS. KLEINSORG: Right.

7 DR. BONACA: The question I have is, you
8 know, looking at the previous slide that you had,
9 there was an emphasis on non-compliances and clearly,
10 you go to the engineering analysis, you come through,
11 and you go through a performance change evaluation if
12 needed, and clearly clean up all of these basis with
13 whatever non-compliance you may have had.

14 MR. KLEINSORG: Right.

15 DR. BONACA: But if you do have a full
16 risk analysis, assume you have other insights that do
17 not have anything to do with compliances or not, okay,
18 but it says you should have a different kind of
19 approach to fire protection, would you -- would the
20 licensee have an option to implement those or an
21 obligation to implement those changes?

22 MS. KLEINSORG: A non-risk informed change
23 is --

24 DR. BONACA: No, no, risk-informed. I'm
25 saying, out of respect -- you know, I mean, one

1 portion, which is probably a minor portion, we address
2 non-compliances. But an expected fire PRA would bring
3 insights that tell you that maybe the fire protection
4 should be developed in a different way.

5 MR. MARION: Right, absolutely. The fire
6 PRA will identify vulnerabilities that a licensee will
7 have to evaluate against the requirements of the
8 Regulation and enhance their fire protection program
9 based upon that specific vulnerability.

10 MS. KLEINSORG: And we've actually seen
11 that in demonstration.

12 DR. BONACA: Other than the process, what
13 do you -- do have a hybrid between the Appendix R
14 Regulation and whatever comes out of your risk-
15 informed approach?

16 MS. KLEINSORG: Right. Actually the next
17 slide exactly goes to that.

18 DR. BONACA: Okay.

19 CHAIRMAN ROSEN: I hate to interrupt
20 Mario's train of thought, but I really wanted you to
21 track your example through this slide. In the example
22 where you had two pumps and you --

23 MS. KLEINSORG: Right, right.

24 CHAIRMAN ROSEN: But where do you end up
25 on this slide?

1 MS. KLEINSORG: Where I end up, and it's
2 hard to see. I can't bring it in -- and it's really
3 hard to see -- if I had -- let's say I had previous
4 approval of my two pumps. Bad example, but we'll work
5 through it. And it was a previously approved
6 alternative and the answer was yes, but NFPA 803 --
7 805, excuse me -- requires two pumps. I had two
8 pumps, but during the life of the plant, I made a
9 change and now I can no longer claim that it's
10 previously approved because the NRC --

11 CHAIRMAN ROSEN: It's compliant, but --

12 MS. KLEINSORG: It's compliant, but it's
13 not previously approved. So we have given up on that
14 and we will submit those as part of the Licensing
15 Amendment.

16 CHAIRMAN ROSEN: So you go down to this
17 bottom "no," --

18 MS. KLEINSORG: The bottom part will be
19 "no" because -- and I should have --

20 CHAIRMAN ROSEN: -- and you then go to the
21 one that says "prepare and submit License Amendment?"

22 MS. KLEINSORG: License Amendment, that is
23 correct. Now, we're going to talk a little bit more
24 about that in the Change Evaluation Process because we
25 can see ourselves -- we think we're in agreement with

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1 the NRC in -- how do I put this? -- in spirit, we are
2 in agreement that not all changes need to have License
3 Amendment Requests, I think. How we're going to go
4 about implementing that right now is where we're at.
5 We still haven't come to resolution on that and I have
6 real specific examples of things of that nature when
7 we talk about the Change Evaluation.

8 During the original transition, again, the
9 majority of Chapter 3, for those of you who've looked
10 at NFPA 805, a lot of it is programmatic. A lot of
11 stuff is really high-level, good programmatic guidance
12 and that you wouldn't end up ever undoing those kinds
13 of things. However, it does get into specifics
14 regarding compliance with NFPA Codes for suppression
15 and detection where we on a -- not a daily basis, but
16 probably, you know, every month somebody finds
17 something where we're not truly Code compliant with
18 one little issue. The implication is, now do we
19 require a License Amendment for that little thing we
20 found two years down the road? So we want to talk
21 about that a little bit more because that will become
22 burdensome and I don't think either this staff or the
23 industry really wants to do it. How we resolve that
24 remains to be seen as far as we're concerned.

25 Okay, back to the hybrid. It's not cherry

1 picking. When a plant transitions to 805, they
2 transition to 805, but not every fire area will
3 transition risk-informed. Some of them will
4 transition as deterministic. So let's go through
5 this. Every plant has an Appendix R analysis right
6 now. They have compliance on a fire area by fire area
7 basis. As they transition, they're going to -- they
8 can take a look at their fire areas and say, "Okay,
9 does this meet Appendix R. Yes, they do." We have a
10 whole series of questions they have to go through and
11 documentation as to transition that licensing basis.
12 But if you had one-hour wrap with suppression and
13 detection, and it still exists, you can transition
14 that fire area over just like that into the 805 space.

15 So this plays into, "Why don't I need a
16 fire PRA right away?" Well, if I have -- let's say my
17 plant's perfect and I don't have any manual action
18 issues and I don't have any circuit issues. There is
19 no reason why I can't transition my plant over all in
20 the deterministic bucket until I find a change that I
21 want to be able to evaluate later on using risk.

22 So the timing issue -- whereas, we all
23 agree that having a fire PRA provides a lot more value
24 and a lot more insight into having the process, when
25 you have it, you know, might vary depending on how

1 your plant's current licensing situation is.

2 CHAIRMAN ROSEN: In your example, you
3 assume the plant is perfect and you've done the
4 multiple spurious calculations and all that.

5 MS. KLEINSORG: Right, we know nobody's
6 like that.

7 MR. APOSTOLAKIS: The discussion earlier
8 was not really on that topic. I mean nobody objects,
9 or nobody would demand a fire PRA for the first three
10 boxes there.

11 MS. KLEINSORG: Right.

12 MR. APOSTOLAKIS: But when people start
13 producing Delta CDF without a fire PRA, I mean, that's
14 really pushing it. That's really where the concern
15 was.

16 MS. KLEINSORG: Yes.

17 MR. APOSTOLAKIS: But it's perfectly all
18 right if to say, you know, I meet the deterministic
19 requirements of the 805 standard. Well, more power to
20 you.

21 MS. KLEINSORG: Right.

22 MR. APOSTOLAKIS: So that's where the
23 language is a little bit provocative. You know, when
24 you actually start calculating Delta CDFs --

25 DR. BONACA: Well, in a sense, the

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1 confusion between meeting this NFPA method and the
2 risk-informed part of it, as long as you meet the
3 deterministic requirements, that's okay.

4 MR. APOSTOLAKIS: That's okay.

5 DR. BONACA: It shouldn't be a part of
6 this discussion on the Reg. Guide at all.

7 MR. APOSTOLAKIS: Well, the Reg. Guide --
8 no, no, no, because the Reg. Guide talks about the --

9 CHAIRMAN ROSEN: Yeah, but NFPA has two
10 branches.

11 DR. BONACA: Yeah, but it is out of
12 respect, however, that essentially risk-informed
13 information is used to deal with low compliances or
14 low conformances, okay, but I'm saying that there is
15 no obligation on the part of the licensee to change
16 anything about his compliance portion and so there may
17 not be benefits really gained from the application of
18 fire analysis in the sense that you may know that you
19 get some benefit, but you don't need to do it, so you
20 don't do it.

21 MS. KLEINSORG: Well, we've run a couple
22 of pilots using the change, the change process, which
23 is really what we come down to with this risk-informed
24 process. And what we found is once you open a fire
25 area back up, you can't just focus on the one non-

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1 compliance; you have to look at the fire area in
2 total. So you'll find things that you -- you'll find
3 things where the fire protection was okay for the non-
4 compliance you were looking at, but it wasn't so okay
5 on the other side of the area. So once you open a
6 fire area up, you open the whole area back up again.
7 You have to look at it in context.

8 MR. APOSTOLAKIS: Now, this sends the
9 message that in the transition, the preference is
10 really to go to the deterministic branch of NFPA of
11 805? And that when you find that you can't do it,
12 then you go reluctantly to the risk-informed part to
13 try to justify it. That's the message I'm getting
14 from this picture, which may be, you know, for
15 whatever reason, the reasonable thing to do.

16 How about the situation though where a
17 fire PRA would, in fact, identify some issues that are
18 not covered by the first three boxes? Now if the
19 licensee doesn't have to do a fire PRA, then these
20 would never be discovered. In other words, the fire
21 PRA or the risk approach is used only to justify
22 certain things that are not compliant with the
23 deterministic requirements of 805?

24 DR. BONACA: Yeah, but it was an open
25 vulnerability.

1 MR. APOSTOLAKIS: What?

2 DR. BONACA: If it was a clear
3 vulnerability, I think you would have to address it.

4 MR. APOSTOLAKIS: If founded, yeah, I'm
5 sure people will have to do something about it, but
6 you are not really going after vulnerabilities.

7 DR. BONACA: That's right.

8 MR. APOSTOLAKIS: Because you're not doing
9 the fire PRA.

10 DR. BONACA: Absolutely.

11 MR. APOSTOLAKIS: And yet, it would be a
12 risk-informed system. So that -- that is --

13 CHAIRMAN ROSEN: Yeah, that's very
14 troubling. I think it's a good point, George, because
15 we always used to say, maybe less now than we used to,
16 but doing PRA, internal events was a good thing to do
17 because it reveals vulnerabilities.

18 MR. APOSTOLAKIS: Sure. And in this case,
19 I mean, you know.

20 CHAIRMAN ROSEN: Anyway, let's go on.

21 MR. MARION: No, let me just offer that
22 that is a good point and we intend to work with the
23 two licensees and as we go through that piloting
24 exercise, because our interest in this is to make sure
25 that the process is efficient, effective, transparent,

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1 and does satisfy what the industry wants as well as
2 what the NRC wants. And after that effort is
3 completed, we may likely revise this document. It's
4 hard to say what areas will be changed, but we are
5 going to make this a living document for a period of
6 several years, at least, until we get the first couple
7 of utilities through the process. Because there are
8 several utilities that are waiting in the wings to see
9 how this plays out with Duke and Progress. And then
10 based upon how successful they are, they may decide to
11 weigh in on this and go forward with the transition,
12 so we want to make sure that we have this guidance
13 document to a point where it is relevant not only to
14 the two pilots, but also subsequent utilities in the
15 future.

16 MR. APOSTOLAKIS: Now, the two branches of
17 that diagram -- and it's been a while since I've seen
18 it -- but, as I recall, one can choose -- is it one or
19 the other, or both?

20 CHAIRMAN ROSEN: It's one or the other.

21 MR. APOSTOLAKIS: One or the other. So I
22 can be completely risk, which is not what we're doing
23 here. Here, we're not using one or the other; here
24 we're going to deterministic and if we can't, we're
25 invoking risk arguments to justify that.

1 CHAIRMAN ROSEN: On a fire area by fire
2 area basis.

3 MR. APOSTOLAKIS: Fire area, yes.
4 Whereas, in the 805 document, you either go this way
5 or that way, deterministic or risk-informed, in which
6 case, the issue we raised earlier of identifying
7 vulnerabilities wouldn't exist because if you go risk-
8 informed, you are going to do the PRA and identify the
9 vulnerabilities.

10 MR. MARION: Yeah, that's -- that's fine.

11 MR. APOSTOLAKIS: So that's something that
12 needs to be clarified, in my view.

13 MR. MARION: Yeah. Hindsight being 20/20,
14 et cetera --

15 MS. KLEINSORG: I have a copy.

16 MR. MARION: We're trying to work within
17 the framework of 805 --

18 MR. APOSTOLAKIS: The Government can
19 afford that.

20 MS. KLEINSORG: Okay.

21 MR. APOSTOLAKIS: I'm sorry, Alex.

22 MR. MARION: Yeah, we're doing our best to
23 work within the framework of 805 and we're already
24 identified areas where it can be improved. I think
25 there's a Writing Committee right now looking at a

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1 revision to it.

2 MS. KLEINSORG: We have revised it. I'm
3 on the Committee.

4 MR. MARION: And so any input that we
5 gather as we go through this process that would
6 suggest changes to 805, we'll make that available to
7 the Writing Committee. But it's the best document on
8 the street we have right now to work with.

9 MR. APOSTOLAKIS: What is, FPA 805?

10 MR. MARION: Yeah.

11 MS. KLEINSORG: All right.

12 MR. ERTMAN: Can I make a, I guess a
13 comment, just to answer something you said a little
14 earlier. I'm Jeff Ertman with Progress Energy. And,
15 as stated earlier and Alex stated, yes, we understand
16 you will want to make some risk-informed change
17 evaluations and we are going forward with the full
18 fire PRA. We do understand that there could be
19 vulnerabilities identified and we would address those
20 vulnerabilities. That's just something that we would
21 do as part of our corrective action.

22 DR. DENNING: But to clarify something
23 that George said, there's no Regulatory requirement to
24 address those vulnerabilities, correct? I mean, if
25 you do a fire PRA, you identify vulnerabilities,

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1 chances are good you're going to address the most
2 critical ones.

3 MR. ERTMAN: Yes.

4 DR. DENNING: But even if it came out ten
5 to the minus three per year, ten to the minus two per
6 year, there is nothing that would require --

7 MR. ERTMAN: Oh, no, no --

8 MR. APOSTOLAKIS: No, remember what
9 happened when Quad Cities found --

10 MR. MARION: Yeah, but you don't need a
11 Regulatory requirement to --

12 DR. DENNING: And you don't have -- and
13 I'm not saying that it wouldn't happen, and
14 particularly you'd be handcuffed here as far as being
15 able to make -- you know, if you have a ten to the
16 minus --

17 MR. APOSTOLAKIS: If you find anything
18 that's above ten to the minus three, it becomes an
19 issue of --

20 CHAIRMAN ROSEN: I think the thing that
21 you have to keep in mind is this area is very
22 carefully reviewed through the insurance arm of the
23 industry and that if such a finding was on the books
24 of a company, and they had done nothing about it, then
25 they had had a fire, a serious fire, I mean, there

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1 would likely be some questions about that.

2 MR. APOSTOLAKIS: No, no, no, no, we'd
3 have the precedent. I mean the moment the word came
4 down that Quad Cities had what -- the first amendment
5 was nine, ten to the minus three.

6 CHAIRMAN ROSEN: Right.

7 MR. APOSTOLAKIS: That was a bunch of NRC
8 guys flying over there immediately.

9 MR. MARION: I understand all that, but
10 I'm saying that it doesn't take just that. I mean,
11 there's another whole process going on that we don't
12 see a whole lot of.

13 MR. APOSTOLAKIS: Yeah, there are the EO
14 and ANI --

15 CHAIRMAN ROSEN: The insurance process
16 which highly deals with inspections and standards and
17 all the rest. So, the company would expose itself to
18 a significant financial risk if it found such a thing
19 and took no action.

20 MR. MARION: But I assure you that there's
21 a significant level of attention and focus on
22 evaluating the insights that come out of PRA methods,
23 insights whether it's a reduction or whether it's an
24 increase or an enhancement. They're not -- people
25 don't go through a picking and choosing scenario and

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1 determine what they're going to implement and what
2 they're not going to implement. It's going to
3 identify vulnerabilities that need to be addressed and
4 they'll be incorporated in the Corrective Action
5 Program and dispositioned accordingly. It may result
6 in a programmatic change or it may result in a
7 modification of the plant. But they will do
8 something.

9 MR. WEERAKKODY: There are two --

10 DR. BONACA: And I appreciate that. I
11 think it is really a profit thing. That's why,
12 however, you know, I was thinking back about the
13 concern of not having a requirement for a full PRA
14 model. We discussed it before. It's almost like
15 setting minimum requirements at the level where
16 somebody could say, okay, I'm not doing a full-blown
17 PRA but I'm just dealing with non-compliances and then
18 I want to look at the rest that a coming down and
19 resolve them to some minor risk considerations. The
20 probably most of them are such non-compliances that
21 you can't affect it, I mean, a concern by a simple
22 risk analysis. And so in that case, I think we would
23 lose the benefit of application risk information to
24 the general, you know, fire issue which I think is a
25 much superior way of going about it.

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1 MR. APOSTOLAKIS: Would you see any
2 licensee going the other way, saying I'm going to do
3 a risk thing and then maybe look at some deterministic
4 evaluations where the risk -- the risk analysis may
5 indicate some vulnerability some place and I'm going
6 to use a computer code, a deterministic calculation to
7 show that this is not an issue? In other words,
8 reverse the attitude as opposed to trying to be as
9 deterministic as you can and if you can't, go to risk.

10 MS.KLEINSORG: I don't know. I don't know
11 yet. The way Dukes' Project Plan is coming out right
12 now, is they're going to be going down dual paths,
13 doing a fire PRA at the same time we're truing up the
14 transition of the old Appendix R over. So I think
15 they'll merge at some point. One can't -- we can't be
16 finished until both are done. We will not submit our
17 Licensing Amendment Request until both are done. I
18 shouldn't say "ours," "theirs" -- I feel a part of it.
19 But I don't know if it'll just -- if the PRA bus will
20 end up ahead of the deterministic transition. I don't
21 know.

22 MR. APOSTOLAKIS: Why is there a -- do we
23 have to issue this Regulatory Guide before the pilot
24 programs take place?

25 MR. WEERAKKODY: Yes.

1 MR. APOSTOLAKIS: Don't we have this thing
2 of trial use? We've done it in the past.

3 MR. WEERAKKODY: We won't issue the
4 Regulatory Guide -- we won't issue the Regulatory
5 Guide --

6 MR. APOSTOLAKIS: Why not? I mean, there
7 are all these issues that would be resolved after Duke
8 does its job.

9 MR. WEERAKKODY: Duke is familiar with the
10 details because they were from Day One -- not Day One,
11 for a while was interested, but the Regulatory Guide
12 is not just for Duke and Progress. It's for all the
13 other players as well.

14 MR. APOSTOLAKIS: Well, I understand that,
15 but it appears that we're going to learn a lot from
16 this particular obligation. We're really going to
17 learn a lot.

18 DR. BONACA: I mean it is complex as an
19 issue because I'm sure as you do a fire PRA, Appendix
20 K is already invented in the design of the plan. So
21 therefore, you're reflecting commitments in it and
22 some of them are positive this report will be the
23 results and some of them will be sufficient. So you
24 have, you know, a hybrid system already in place. And
25 so I think there is a lot to be learned from the first

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1 application, to see what comes out of it.

2 MR. MARION: Yeah, that's an excellent
3 point. It is a hybrid system. And it will be until
4 we work through the details with a couple of pilots.
5 But, you know, from an industry perspective, the Reg.
6 Guide would be beneficial because it captures
7 endorsement of some of the fundamental documents here
8 and the utilities like to move forward with some level
9 of confidence that NRS finds some of these documents
10 to be acceptable.

11 So, you know, there is benefit to them
12 issuing the Reg. Guide now, but also -- I don't want
13 to speak for the staff -- it seems to me that they
14 will reevaluate the Reg. Guide after we go through the
15 pilots and determine if additional changes are
16 necessary.

17 MR. APOSTOLAKIS: There was this -- what
18 was it, a couple of years ago -- that Ms. Mary Drouin
19 was here arguing why a particular Regulatory Guide had
20 to be issued on a try and use basis because then it
21 would be easier to change it as we went along and all
22 that. We could do the same thing here, couldn't we?

23 MR. WEERAKKODY: We could, but you know,
24 listening to all the questions though, if I look at
25 what we know versus what we don't, today to issue a

1 Reg. Guide, we understand there's a concern with the
2 requirement for approved PRA, but I think we know a
3 lot about Reg. Guides so that there is some certainty
4 on the part of the licensees who want to make a
5 decision. In fact, you know, for example, D. C. Cook
6 was up here and one of the things they are doing right
7 now, although they haven't sent a Letter of Intent, is
8 they are taking the things like the Reg. Guide and
9 doing an evaluation to decide whether they want to
10 update 805. So I think the Reg. Guide should be out
11 in the street.

12 I'm not refuting that we won't learn
13 during the pilots, and we will modify the Reg. Guide
14 and I know NEI will modify 04-02 as appropriate,
15 there's not such little uncertainty that we can
16 assure it.

17 MR. APOSTOLAKIS: But again, isn't this
18 picture here inconsistent with 805? No?

19 MR. WEERAKKODY: No, I don't think so.

20 MR. LAIN: No, I think the consensus -- the
21 Committee wrote it in this way for ease of transition,
22 I think. If they required all the fire areas to go
23 through the Performance-Based method, that you would
24 end up being -- the cost burden would be too much for
25 people to volunteer to actually transition over. In

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1 some areas, you don't have problems and they're safe
2 today, they meet the deterministic requirement, they
3 have lots of safety margin, that, you know, it's
4 considered to move on and address the non-compliances
5 in the areas and as changes are done, they are going
6 to have to work with the as-built condition, so they
7 are going to have to evaluate the whole area as they
8 make --

9 MR. APOSTOLAKIS: So what you're saying is
10 that the deterministic versus performance-based
11 approach is to apply to each area, not to the plant?

12 MR. LAIN: Correct. They'll march through
13 the fire area by fire area and decide, you know, does
14 this meet the deterministic --

15 MR. APOSTOLAKIS: This time I'm going to
16 do it using the deterministic method; this other one
17 I'm going to do --

18 MR. LAIN: Right. This other one, I have
19 non-compliances that don't meet the deterministic,
20 then I have to go through this, you know, this other
21 method to establish that it meets the risk
22 requirements.

23 MS. KLEINSORG: And that's consistent with
24 Section 2.2 and the NFPA 805, I think. The
25 methodology.

1 MR. DIPERT: After your transition, and
2 then you want to make a change in the plant, you can
3 do that on a risk basis regardless of how you got that
4 area?

5 MS. KLEINSORG: The transition out of
6 there, that's correct. That's correct. And, you
7 know, if you look at the deterministic side, you -- if
8 you find an anomaly in a plant post-transition, you
9 are either going to bring yourself back into
10 compliance with your transition licensing basis, you
11 could pick an NFPA 805 deterministic, which is more
12 stringent than your transition licensing basis, or
13 more than likely, you'll do some sort of Risk-
14 Informed, Performance-Based evaluation of either the
15 adequacy of the as-found condition or the
16 justification for what change -- what is the most
17 bang-for-your-buck from a change perspective.

18 CHAIRMAN ROSEN: Well, that answer
19 confused me a little bit. I think what Rich was
20 saying was that after you make the transition --

21 MS. KLEINSORG: Right.

22 CHAIRMAN ROSEN: -- but you haven't
23 transitioned every area, maybe you've only
24 transitioned --

25 MS. KLEINSORG: No, you transition every

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1 area. You transition every fire area, you transition
2 it either a deterministic or risk-informed.

3 CHAIRMAN ROSEN: Okay. Thank you for that
4 clarification. You've transitioned every area, but
5 many of them have stayed deterministic, say ninety
6 percent.

7 MS. KLEINSORG: Correct.

8 CHAIRMAN ROSEN: Now you have a change --
9 then sometime subsequent to that you find a problem in
10 one of the deterministic areas. Can you then treat
11 that as a risk-informed area by doing a --

12 MS. KLEINSORG: A change evaluation.

13 CHAIRMAN ROSEN: -- a change evaluation,
14 a risk-informed change evaluation?

15 MS. KLEINSORG: A Risk-Informed,
16 Performance-Based change evaluation. You would go
17 through the whole change process for that area.

18 MR. MARION: Unfortunately, it would
19 really be nice if you could make a distinctive, clean
20 separation from deterministic and make a transition in
21 the risk-informed. But when you're dealing with
22 licensing basis and the framework of the documents we
23 have to work with now, you have to evaluate the
24 deterministic and make a judgment as to what carries
25 forward. So we're into a blended scenario.

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1 Hopefully, as we go through this exercise, with a
2 couple of plants and utilities, maybe we can get to
3 the point where we can make a clean transition and say
4 this is a new risk-informed environment, Regulatory
5 environment for dealing with fire protection going
6 forward. But right now, it's very difficult to do
7 that because you can't turn your back on the current
8 licensing basis, unfortunately, and that's the
9 practical reality of the process that we're trying to
10 work through.

11 MS. KLEINSORG: Any other questions on
12 this slide? Before we go to the next slide, I just
13 wanted to make one point. You notice that there is no
14 previously approved question mark box on this slide.
15 That's very important. And that's important because
16 we will have a previously approved -- we have an
17 approved Fire Protection Program, and approved
18 Appendix R Analysis, fire area by fire area. We have
19 been, under the Standard License Condition, allowed to
20 make changes without prior NRC approval if we met the
21 test of not adversely affecting ability to achieve and
22 maintain safe shutdown. We consider, the industry
23 considers those evaluations, if done correctly, and
24 there will be a process of reviewing those to make
25 sure that they are basis for acceptability are still

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1 true, we consider those part of our current licensing
2 basis moving forward, and that we do not need to go
3 back and ask NRC permission for those changes that
4 we've made over the years to this compliance strategy,
5 nor does NFPA 805 require that previous approval
6 determination, as it does for Chapter 3 requirements
7 and then triggers us into the License Amendment
8 Request. So there is a -- it's subtle, but it's real
9 to us in the industry, that change. And I think that
10 is the way the Reg. Guide is -- not the Reg. Guide --
11 that's the way NEI 04-02 is written currently.

12 Any questions on that?

13 (NO RESPONSE.)

14 MS. KLEINSORG: Okay, let's go to the next
15 slide.

16 So this has been a real -- I just wanted
17 to lead off with this. There's been great progress
18 made and great -- a great working environment trying
19 to make NEI 04-02 work, and meet both -- all
20 stakeholders' needs for it, the industry and the
21 Regulatory bodies. And I think we have reached a lot
22 of agreement. I think we've reached agreement on how
23 we're going to handle the transition for Chapter 3 as
24 far as previous approved. If we've changed a
25 previously approved -- if, you know, had a firm pump

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1 and now we have two, and now we have one, or we add
2 three and now we have two, and we change it, and NFPA
3 805 required, you know, a certain amount and Chapter
4 3 required a certain amount, and we don't meet the
5 exact word of that and we cannot find exact previous
6 approval of that, then we will ask for the License
7 Amendment in Chapter 3. So we have come to terms with
8 that.

9 Next slide. In Chapter 4, we believe that
10 if we had told the NRC that we had one-hour wrap and
11 suppression detection in a fire area and now we've
12 changed it to three-hour wrap and we're no longer
13 crediting suppression detection in a fire area, we
14 meet Appendix R, we can move forward without their
15 approval of that. So that's kind of a subtle
16 difference with how we see the transition of Chapter
17 3 requirements versus Chapter 4.

18 We've also provided tabular information
19 and templates for how a licensee would transition
20 that. So it would be very clear to the Inspectors
21 going forward as to exactly what section of Appendix
22 R and NFPA 805 we have transitioned by fire and how we
23 meet it.

24 Okay. These are the aspects that I think
25 will get tested during the pilot, that I think will

1 probably require some tweaking of 04-02, and that is
2 the determination of previous approval. You know, how
3 clear does it have to be? If it's really clear in our
4 submittal to the NRC, but not really clear in the SER,
5 you know, how previously approved are we? So those
6 are the kinds of things we're going to be testing.
7 And, as all of you who know, who's looked at an SER,
8 sometimes the SERs say exactly what we said in the
9 submittal and sometimes they don't, although the
10 submittal may be very, very clear.

11 So we're going to -- we're going to see a
12 few of those, I think, once we start testing the
13 transition.

14 MR. APOSTOLAKIS: So somebody has
15 transitioned.

16 MS. KLEINSORG: Yes.

17 MR. APOSTOLAKIS: So somebody has
18 transitioned, okay.

19 MS. KLEINSORG: Right.

20 MR. APOSTOLAKIS: Okay, and they have gone
21 through the boxes that you mentioned earlier, and all
22 that and everything's fine now. Six months later,
23 they want to change something. That would have to be
24 risk-informed?

25 MS. KLEINSORG: Yes.

1 MR. APOSTOLAKIS: So they will have to
2 calculate Delta CDF and so on?

3 MS. KLEINSORG: It could be qualitative.

4 MR. MARION: Ohhhh.

5 MS. KLEINSORG: I shouldn't have said
6 that?

7 MR. MARION: You shouldn't have said that.
8 Can we withdraw that comment?

9 MS. KLEINSORG: We can -- and maybe Ray
10 can help me out because we've spent hours talking
11 about this with his staff, but I have a slide --

12 MR. APOSTOLAKIS: Well, the point is that
13 it would have to be risk-informed.

14 MS. KLEINSORG: It has to be risk-
15 informed.

16 MR. APOSTOLAKIS: There is no such thing
17 anymore that a monistic space, therefore, you know,
18 I'll wave my arms.

19 MS. KLEINSORG: Right. Every change --

20 MR. APOSTOLAKIS: Which means they will
21 have to have a fire PRA then on that point. There is
22 no way they can avoid that.

23 DR. GALLUCCI: They could compare their --
24 they could say that we did -- without doing a detailed
25 analysis, this is no more likely than the impact of a

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1 meteor and since that's known to be ten to the minus
2 thirteen, they don't have to have a detailed
3 calculation.

4 MR. APOSTOLAKIS: These are the
5 exceptions, guys, these are the exceptions.

6 DR. GALLUCCI: That's what that is meant
7 to -- that's what that's meant to address, is those
8 exception cases. When you do plant changes --

9 MR. APOSTOLAKIS: But for a more
10 substantive change, you would have to calculate Delta
11 CDF and Delta LERF and do the whole works.

12 MR. MARION: You will not be able to use
13 those tables, 5-2 and 5-3, without having such a PRA.

14 MR. APOSTOLAKIS: Right.

15 MR. MARION: For a substantive change.
16 You're absolutely correct.

17 MR. WEERAKKODY: Yes, I -- again, yes, you
18 can do a lot of things there, any substantive change,
19 you would have to have a fire PRA. But what we are
20 trying to say is that if the rule required the full
21 fire PRA at transition, rather than what the rules
22 does now, which is you've got to have a risk
23 assessment that captures the scope and the nature of
24 the change, it's too different. Because if the rule
25 requires a full fire PRA, any additional requirements

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1 that are laid on the fire PRA, for example, if the
2 Agency says not only should you have a full fire PRA,
3 but it should be a Level III, that is going to affect
4 any 805 plant. But the way the rule -- when I say
5 "the rule," not the Reg. Guide, stops it now, the
6 essential element of risk analysis is required and the
7 -- but we are not adding unnecessary burden or
8 unnecessary requirements. That's what the difference
9 is.

10 MS. KLEINSORG: Okay. Let's talk about
11 the change process a little.

12 DR. BONACA: I just had one little comment
13 I would like to make.

14 MS. KLEINSORG: Okay.

15 DR. BONACA: I'm still troubled by the
16 fact that the focus seems to be using some risk
17 analysis, whatever can work, to eliminate non-
18 compliances. Risk analysis is not being used to look
19 for weaknesses in the current Appendix R and that's a
20 pretty unique approach, because, I mean, if I remember
21 when we did the IPEEE, that particular -- the first
22 intent was to look for vulnerabilities and we took
23 care of that and then we said, okay, now let's look at
24 Regulatory burden and we took care of that. And we're
25 taking of that right now. In this particular case, it

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1 is a very selective process that is being used to
2 eliminate non-compliances and I agree that it is very
3 powerful because most of these compliances are pretty
4 irrelevant. I mean, they are not -- but it just
5 simply troubles me that here we have the risk-informed
6 Regulatory Guide, you know, performance-based, and
7 it's so focused on using it to eliminate non-
8 compliances. That's a statement.

9 MR. MARION: Well, you raise an
10 interesting point because the industry and the NRC
11 had, you know, came to a crossroads and one path was
12 do we apply risk-informed approaches and restructure
13 all of the Regulations and look at that level of
14 effort, and the difficulty and challenges with that,
15 and the second path is do we look at the applications
16 of the Regulations and apply risk-informed approaches
17 to the applications, and whether there is a right or
18 wrong thing to do, that's the path that we've chosen.

19 DR. BONACA: Yeah, I understand.

20 CHAIRMAN ROSEN: And you're saying by
21 analogy, this is the same thing?

22 MR. MARION: Yes. Yes, but it's more of
23 a hybrid because we don't have that clean separation
24 between deterministic and risk. But it's an
25 improvement over the Regulatory framework we currently

1 have.

2 CHAIRMAN ROSEN: Well, then this is the
3 opportunity to do it, Mario, and what George has been
4 suggesting is to find the vulnerability.

5 DR. BONACA: Right.

6 CHAIRMAN ROSEN: Until the plant decides
7 to do a full scope fire PRA, and then they fall out of
8 the process.

9 MR. MARION: Yes.

10 MR. APOSTOLAKIS: This is just the
11 transition.

12 CHAIRMAN ROSEN: I know, I know, but just
13 following on Alex's point, that you don't get the
14 benefits that you are seeking until, in this process,
15 but at some point, the plant says well, to do this
16 process, I've got a lot of fire areas I want to
17 address; I'm worried about multiple spurious and I'm
18 worrying about interactions; I might just as well bite
19 the bullet and do a good fire PRA; we've got the
20 guidance now from the re-quantification effort. In
21 some plants, I understand they are doing just that.
22 And they accrue the benefits of finding their own
23 vulnerabilities and so does the public.

24 MR. APOSTOLAKIS: But, again, at the same
25 time, what benefit would the plant have if it

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1 identified vulnerabilities using PRA?

2 CHAIRMAN ROSEN: Benefit?

3 MR. APOSTOLAKIS: Yes. Would the NRC say,
4 "Boy, you guys are great; therefore, we'll do this for
5 you," or are they just inviting trouble?

6 CHAIRMAN ROSEN: I don't think they're
7 inviting trouble. I think that finding
8 vulnerabilities is an important part of running an
9 enterprise.

10 MR. APOSTOLAKIS: They are inviting
11 trouble.

12 DR. BONACA: No, because, I mean, when
13 they -- when you identify a problem, they are self-
14 identified, especially if you have an aggressive way
15 to look at it, and the NRC and TPRA recognizes that
16 and they support you. I mean, it is not going to be
17 the question is when you don't find the problems
18 because you're not looking for them.

19 CHAIRMAN ROSEN: That's right. When
20 they're self-revealing, or found by the Agency, that's
21 a different story.

22 MR. APOSTOLAKIS: That's a different
23 story.

24 But the Agency is not looking because the Agency is
25 not doing risk assessments either.

1 CHAIRMAN ROSEN: That's right.

2 DR. BONACA: Well, but an Inspector can
3 walk around and find the other problem, or the, you
4 know, NRC may have sent a number of communications
5 regarding the plant, et cetera, and the licensee has
6 not responded.

7 MR. APOSTOLAKIS: Now, this NEI 04-02 is
8 not just for the transition period, right?

9 MS.KLEINSORG: No, it's the whole -- most
10 of it -- a lot of it deals with the transition, but it
11 does deal with price transition also.

12 MR. WEERAKKODY: Liz, can I interrupt and
13 say something --

14 MS. KLEINSORG: Yes.

15 MR. WEERAKKODY: Because you are talking
16 about the vulnerabilities. I know of three reasons
17 why the vulnerability screening or that whole aspect
18 is fully addressed within the Agency. First, as
19 you'll know, the IPEEE, if you look at Addenda 80, 20
20 and Sub 21 (phonetic), the responses to that came to
21 the Agency and those are commitments on the part of
22 the licensee. So that still holds because, you know,
23 we have been -- we have hardly none 805 plants,
24 meaning that there is a number of plants -- that there
25 are more plants out there and they have no intention

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1 about 805. So the second thing is the back approval.
2 As we all know, 5109 if anything that, you know, is
3 found by the licensee or the industry will be
4 challenged for adequate safety, then the Regulatory
5 requirements is there. And the third thing, you are
6 right, we don't normally go and look more than the
7 tri-annual and the annual and the quarterly kind of
8 inspections, but if there's reasons to inspect, you
9 know, for example, in the multiple spurious, we target
10 some of these and I send my best PRA folks to look.
11 Dr. Ray Gallucci just visited one of the plants that
12 we think may have issues that they may not have
13 identified, and he came back and told me no, they have
14 done the analysis.

15 So we sometimes, you know, go beyond as a
16 Regulator in the requirements to look at it -- it is
17 out there. I just want to make that clear.

18 MS. KLEINSORG: Okay. Change Process.
19 This is the other fundamental process that we have
20 developed in NEI 04-02 and an important attribute of
21 this change process is that all changes are required
22 to be risk-informed.

23 MR. APOSTOLAKIS: After you transition.

24 MS. KLEINSORG: After you transition, that
25 is correct. The process that we've set up is very

1 similar to the current 5059 screening, which is now
2 the Fire Protection Regulatory Review Process 9607,
3 NEI document that was endorsed by the staff. There is
4 a number of checklists that have been added to NEI 04-
5 02 and a number of screening criteria.

6 We do have one remaining issue that we're
7 discussing with the staff and that is the ability to
8 perform equivalency evaluations on Chapter 3
9 requirements. And I thought I'd take you through the
10 change classes and kind of talk a little bit about
11 then and now going forward.

12 This is one of our favorite diagrams in
13 NEI 04-02. This is the Change Process and it's laid
14 out in Chapter 3 of the 04-02 document. I think a
15 couple of -- well, the key point that I want to bring
16 up here is you come down, you define the change,
17 identify whether it's a Chapter 3 requirement or not -
18 - a Chapter 3 requirement, can you do an engineering
19 equivalency evaluation, and we've given some examples,
20 and I actually go through some of those examples in
21 the last two slides.

22 We believe that there are certain things
23 where equivalency evaluations can still be done and
24 should be allowed. Otherwise, I think the staff will
25 be over-burdened by License Amendment Requests. But

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1 we're working on that.

2 Even if it doesn't require a License
3 Amendment Request, it still goes through the risk
4 check. Everything goes through the risk check.

5 MR. APOSTOLAKIS: What are you working on?
6 The staff has agreed to this?

7 MS. KLEINSORG: No.

8 MR. APOSTOLAKIS: No?

9 MS. KLEINSORG: I don't think -- I think
10 that's one of the last things -- the differences
11 between 04-02 right now. Right?

12 MR. WEERAKKODY: This is probably the only
13 thing I'm cognizant of.

14 MS. KLEINSORG: I think it is now.

15 MR. WEERAKKODY: We are working on the
16 details, yes.

17 MR. APOSTOLAKIS: Where does it in the
18 Regulatory Guide say you are in disagreement?

19 MS. KLEINSORG: It --

20 MR. APOSTOLAKIS: You're only excluding
21 Chapter 6.

22 MS. KLEINSORG: You brought that up, Bob,
23 right?

24 MR. RADLINSKI: Yeah, the Rule requires
25 that you deviate from Chapter 3 that the NFPA

1 identified, that you have to submit a License
2 Amendment, right?

3 MR. APOSTOLAKIS: Can you point me to the
4 actual Regulatory Guide where you say this?

5 MR. RADLINSKI: 3.1.4. Page 9 of the Reg.
6 Guide.

7 MR. APOSTOLAKIS: Page 9.

8 MR. RADLINSKI: It's a deviation from
9 Chapter 3, unless it's been previously approved,
10 documented as being previously approved by the NRC,
11 then it has to be submitted.

12 MR. APOSTOLAKIS: Alright.

13 MS. KLEINSORG: Is the language you're
14 writing, NFPA Code, still in the draft Reg. Guide?
15 Regarding whether the authority having jurisdiction
16 needed to look at equivalency evaluations?

17 MR. RADLINSKI: I'm sorry.

18 MS. KLEINSORG: There is a section in the
19 draft Reg. Guide that talked about NFPA Code
20 specifically requiring AHJ approval.

21 MR. RADLINSKI: You mean earlier?

22 MS. KLEINSORG: Oh, there we go. Right.

23 MR. RADLINSKI: Tentative records?

24 MS. KLEINSORG: Yes.

25 MR. RADLINSKI: Yes, that's still in there.

1 MS. KLEINSORG: That's still in there.
2 Right. It's in 3.1.4. Page 9.

3 CHAIRMAN ROSEN: So I've lost the track
4 here. Now if you do an engineering equivalency
5 evaluation, that has to be approved by the AHJ?

6 MS. KLEINSORG: Yeah, that's the NRC's
7 position. And our position is we do them now. A good
8 example would be a block sprinkler head. Partial
9 suppression and -- well, there's two different ways of
10 looking at it. Chapter 3 requires that if you -- if
11 Chapter 4 -- let me take a big step back. If Chapter
12 4 requires a suppression system, and Chapter 3
13 requires that suppression system be installed with the
14 appropriate NFPA Code. It's our position, the
15 industry's position is that the NFPA Code doesn't tell
16 you where to put the suppression system and fire area.
17 It tells you how to ensure that it's adequate for the
18 -- if it's installed, where it should be. We've
19 always been allowed to do engineering evaluations that
20 say, you know, the fire area is this big, but we only
21 need to put the suppression system over here. We've
22 always been able to do partial suppression detection
23 evaluations and we considered -- we would consider
24 those the types of engineering equivalency evaluations
25 that we should still be allowed to do because they're

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1 more meeting Chapter 4 requirements than Chapter 3
2 requirements. That's a very key point. Utilities
3 have to be able to assess a block sprinkler head and
4 say, oh, it's still adequate for the hazard. Because
5 I don't think the NRC wants License Amendment Requests
6 for every one of those we find going forward.

7 DR. WALLIS: Is this where the
8 performance-based comes in?

9 MS. KLEINSORG: Pardon me?

10 DR. WALLIS: Is this where the
11 performance-based part comes in?

12 MS. KLEINSORG: Yes.

13 MR. APOSTOLAKIS: No.

14 MS. KLEINSORG: Yes, this is performance-
15 based.

16 MR. APOSTOLAKIS: If you are allowed to do
17 it now, why can't you be allowed to do it in the
18 future?

19 MS. KLEINSORG: Because Chapter 3 requires
20 that deviations from NFPA Codes require approval of --

21 MR. APOSTOLAKIS: Chapter 3 of what?

22 MS. KLEINSORG: NFPA 805. We just want
23 clarification on that going forward.

24 MR. APOSTOLAKIS: Right.

25 MR. MARION: And we have not sent the

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1 staff the final draft of our Guidance document, but in
2 that draft, we've identified examples of what requires
3 a License Amendment Request and what does not. And
4 we're hoping that we can get their concurrence on that
5 and I plan to submit that to them tomorrow.

6 MR. APOSTOLAKIS: One other question for
7 you.

8 CHAIRMAN ROSEN: But we're being asked to
9 bless the Reg. Guide without that knowledge, without
10 that final piece understood.

11 MR. WEERAKKODY: We are.

12 CHAIRMAN ROSEN: So in time for the June
13 meeting, we will need it.

14 MR. MARION: Okay.

15 CHAIRMAN ROSEN: Well, I don't know how we
16 could endorse the Reg. Guide with a piece of it still
17 under discussion between your team, the staff and NEI.

18 MR. WEERAKKODY: We are having the next
19 meeting June 2nd, right? We will have it ready by
20 then, yes.

21 MR. APOSTOLAKIS: Yeah, but, I mean, we
22 have to read it.

23 MR. WEERAKKODY: Okay.

24 DR. WALLIS: No matter which way you go,
25 you end up in front of the --

1 MR. WEERAKKODY: What we will do is --
2 what we will do --

3 MR. APOSTOLAKIS: Draft letters are like
4 Rules. They don't change easily.

5 (LAUGHTER.)

6 DR. WALLIS: Now, we've spent an hour and
7 twenty minutes and we've not yet talked about risk and
8 I'm interested in getting to this risk part of this
9 whole thing.

10 MR. APOSTOLAKIS: Yeah.

11 DR. WALLIS: Well, I think I'm going to go
12 because no matter what you do, you end up doing the
13 risk screening.

14 MS. KLEINSORG: That's correct.

15 MR. MARION: Yes, it changes.

16 MS. KLEINSORG: No matter what change you
17 do, you must do a risk screening.

18 DR. WALLIS: How do you know that the risk
19 is -- how do you know that change impacts the risk
20 non-negligibly?

21 MS. KLEINSORG: You'd have to do the
22 evaluation. The checklist takes you through the
23 evaluation. For PRAs --

24 MR. APOSTOLAKIS: There's always a problem
25 with this kind of question.

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1 CHAIRMAN ROSEN: What's your question?

2 MR. APOSTOLAKIS: There are three
3 categories as I recall: negligible, very small --

4 MS. KLEINSORG: No, it's -- we've actually
5 made them -- I think there's two: negligible and non-
6 negligible.

7 MR. APOSTOLAKIS: You borrowed them from
8 the new language of 5059, right?

9 MS. KLEINSORG: Right. Small and --

10 MR. APOSTOLAKIS: So negligible --

11 MS. KLEINSORG: Greater than small or very
12 --

13 MR. APOSTOLAKIS: Negligible, negligible
14 square, and negligible cubed.

15 MS. KLEINSORG: Really, really negligible.

16 MR. APOSTOLAKIS: Yeah, really, really
17 negligible.

18 DR. WALLIS: One over --

19 MR. APOSTOLAKIS: Yeah, I guess the only
20 thing there is that you have to convince the staff
21 that it's negligible square. And if it is not, then
22 you go on to the numbers, right?

23 MS. KLEINSORG: That's how it's set up.

24 MR. APOSTOLAKIS: Yeah. And the reason is
25 what Sunil said earlier, that 5059 itself does not

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1 apply here?

2 MR. WEERAKKODY: That's correct.

3 MS. KLEINSORG: That's correct.

4 MR. APOSTOLAKIS: So you are creating the
5 equivalent of a 5059?

6 MR. WEERAKKODY: Yes, similar, yes.

7 MR. APOSTOLAKIS: That's what you're
8 doing.

9 MR. WEERAKKODY: Yes. Yes.

10 MR. APOSTOLAKIS: Oh, but then if they
11 find something that's negligible, they don't have to
12 justify it to you?

13 MS. KLEINSORG: We have to maintain --

14 MR. APOSTOLAKIS: Unless you guys ask.

15 MR. WEERAKKODY: If it's --

16 MR. APOSTOLAKIS: Unless you ask.

17 MR. WEERAKKODY: That's correct, yes.

18 MR. APOSTOLAKIS: Because that's what 5059
19 does.

20 MR. WEERAKKODY: Yes.

21 MR. APOSTOLAKIS: It gives you the freedom
22 to --

23 MR. WEERAKKODY: It does.

24 MS. KLEINSORG: And the Change Process
25 that we've set up makes the licensee document, the

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1 conclusion as to why something has been screened as
2 negligible and that's retained for the life of the
3 plant. Just like 5059.

4 CHAIRMAN ROSEN: I think that the
5 utilities would believe there is a very high
6 likelihood that those changes will be reviewed by the
7 staff in the field.

8 MR. APOSTOLAKIS: At least --

9 CHAIRMAN ROSEN: Pardon me?

10 MR. APOSTOLAKIS: At least in the
11 beginning.

12 Yeah, I don't see why they should be, frankly. A lot
13 of changes are negligible.

14 CHAIRMAN ROSEN: Well, that's why they're
15 being reviewed, to make sure that the Inspector
16 generally agrees that there's nothing in a pile of
17 changes that catches his eye.

18 MR. APOSTOLAKIS: Okay, but when you move
19 to the quantitative risk evaluation and you have this
20 footnote that says that this is a more complex
21 qualitative evaluation, you really lose me completely.

22 DR. GALLUCCI: Let me handle it. Those
23 are my words in there.

24 MR. APOSTOLAKIS: Oh.

25 MS. KLEINSORG: Thank you, Ray.

1 DR. GALLUCCI: In an earlier version of
2 NEI 04-02, there was a distinction made that the
3 simple -- the upper level in that diagram would be
4 qualitative and the lower level would be quantitative.
5 I don't like that distinction, that simple equal
6 qualitative; complex equals quantitative,
7 automatically. So I asked them to re-word it so that
8 they would include that you could have -- a simple
9 analysis can be qualitative and most likely will be
10 qualitative, but can be quantitative, typically, on an
11 order of magnitude type of thing. Maybe some of the
12 early steps you would see in the Fire Protection SDP,
13 one might consider sort of a hybrid between
14 qualitative and quantitative. Now while I don't
15 necessarily envision such a thing as a detail
16 qualitative analysis off the top of my head, I can
17 conceive that there may be such things and possible
18 examples would be if you go to Step 2.8 of the Fire
19 Protection SDP, the HRA tables that choose the Gamma,
20 Beta and Alpha factors, the Gareth Parry type table,
21 one could consider that a detail, but still more of a
22 qualitative type of evaluation. So that's one area
23 that might fit into that definition.

24 Another area might be what's done at
25 plants during outage management where they identify,

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1 maybe seven or eight, safety functions that have to be
2 maintained while they're reconfiguring the plant for
3 the various outage strategies, and they do sort of a
4 redundancy order of magnitude calculation where you
5 calculate just how many trains of a certain system are
6 left, and there are some sort of formulas that enable
7 you to determine whether you're overall pseudo risk
8 level is green, yellow, orange or red. Again, one can
9 argue that that is not really quantitative, but it is
10 a detailed, well-based type of technique that all
11 plants use. So that's another thing that I would
12 consider, probably something -- what I would call a
13 detail qualitative. So it's kind of a catch-all
14 phrase.

15 DR. WALLIS: You said you had numbers in
16 it, so it must be --

17 DR. GALLUCCI: Yeah, numbers like one and
18 two.

19 DR. WALLIS: But they are bounding or
20 something, they're guiding?

21 DR. GALLUCCI: It's quasi-quantitative.
22 It's not where you calculate it and come up with
23 probabilities.

24 MR. APOSTOLAKIS: But why not? Why not
25 actually calculate probabilities? At which point are

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1 you saying do a fire risk assessment? No. Maybe that
2 thing we're using trains, we'll do that here, too.
3 Why not say, "Quantitative risk evaluation requires a
4 fire risk assessment. Thank you very much."

5 DR. WALIS: Well, to be quantitative is
6 sort of making excuses, and detailed quantitative is
7 making many excuses.

8 MR. APOSTOLAKIS: Yeah, it's all excuses.

9 DR. WALLIS: That doesn't necessarily make
10 it better.

11 DR. GALLUCCI: Because NFPA 805 will not
12 allow us to come out and say you have to do risk
13 assessment. Until it's amended, you're stuck with
14 what NFPA 805 is.

15 MR. APOSTOLAKIS: Wait a minute, now.
16 Even if it says "quantitative risk evaluation," you
17 cannot require a risk assessment?

18 DR. GALLUCCI: Correct.

19 MR. APOSTOLAKIS: Well, why don't you
20 require risk assessment? They come to you with stuff
21 that we just mentioned, then you are going to review
22 it and you may find it acceptable. Define what "risk
23 assessment" is.

24 DR. GALLUCCI: I require risk assessment,
25 but I'm not the only reviewer.

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1 MR. APOSTOLAKIS: But wait a minute now.
2 "Risk assessment" means a lot of things. Okay. So
3 you say you are doing quantitative risk evaluation;
4 you have to have a risk assessment. Now if a guy
5 comes in with an extended qualitative semi-
6 quantitative analysis, you might say that, in this
7 particular application, this is good, but you don't go
8 out of your way to explain that this is the way to do
9 it.

10 Anyways, I mean, this is a perennial -- I
11 mean consistent theme here.

12 CHAIRMAN ROSEN: Yes, so that I think
13 we're --

14 MR. APOSTOLAKIS: We're trying to stay
15 away from risk assessment.

16 CHAIRMAN ROSEN: -- going to be very much
17 late getting to lunch unless we move forward.

18 MR. APOSTOLAKIS: Some of us have planes
19 to catch. So we can't be too late.

20 CHAIRMAN ROSEN: Well, I'm not trying to
21 encourage the movement --

22 MS. KLEINSORG: Okay.

23 MR. APOSTOLAKIS: Yeah, we understand.

24 MS. KLEINSORG: So I just wanted to finish
25 up the Change Process evaluation. Did Bob want to --

1 did you want to make one point or not?

2 MR. RADLINSKI: Well, I missed your
3 example and -- that's fine.

4 MS. KLEINSORG: Okay, we'll go through the
5 examples again. Alright.

6 MR. RADLINSKI: Well, from what I've heard
7 of it, it may not be a difference of opinion.

8 MS. KLEINSORG: I haven't seen the latest
9 version of the Reg. Guides -- I mean the --

10 DR. WALLIS: Well actually maybe I should
11 say something.

12 MS. KLEINSORG: Okay.

13 DR. WALLIS: When you get down to the
14 bottom here, you have "DID" and "SM." Now, "SM," you
15 have some definitions which are useful. "DID"
16 contains your -- here on Page 53 of this thing.
17 There's a lot of quantitative statements, which again,
18 very qualitative --

19 MR. APOSTOLAKIS: Which page are you on?

20 DR. WALLIS: -- liable to a wide range of
21 interpretations.

22 MS. KLEINSORG: Defense-in-Depth.

23 DR. WALLIS: DID is defined in terms of
24 qualitative statements which I suspect different
25 reviewers would assess differently.

1 MR. APOSTOLAKIS: Actually, the
2 description of safety margins is much superior to --

3 DR. WALLIS: That's what I said. They do
4 a good job on safety margins. It's the DID part.

5 MR. APOSTOLAKIS: So we are in agreement?

6 DR. WALLIS: Yeah. The DID part, where
7 it's the bottom step here, and I think there are
8 qualitative statements, liable to a range of
9 interpretation, while we're on the issue of
10 qualitative thinking. Since you flipped very quickly
11 out of the guts of the whole process here.

12 MS. KLEINSORG: Let's talk a little bit
13 more about the guts of the process in the next few
14 slides. The Change Process, I just wanted to kind of
15 give you a juxtaposition of what we can currently do
16 versus what we're going to be doing going forward with
17 805. The acceptance criteria changes from the ability
18 to achieve and maintain safe shutdowns has not been
19 adversely affected to Defense-in-Depth Safety Margin
20 in the Reg. Guide 1.174 criteria, essentially, for the
21 change evaluation that the utilities now will be using
22 to make those changes. Their license condition will
23 actually be changed and I think that's in the Reg.
24 Guide.

25 Okay, next slide. Currently we can make

1 any change to our Fire Protection Program without
2 prior NRC approval as long as we meet the standard
3 license condition and have not violated -- or not
4 undoing an approved Exemption Request.

5 Going forward under 5048, Charlie, we are
6 not going to be allowed to make changes to Chapter 3
7 requirements that are performance-based unless we get
8 a License Amendment Request. Now, we provided some
9 screening criteria for Chapter 3 changes and I think
10 that's what we were talking about where we have to
11 come to terms with the NRC, and I'll go through some
12 examples of those. We might be actually in violent
13 agreement at this point, but I haven't seen the last
14 Reg. Guide yet.

15 And then all that under Chapter 4.
16 Currently Chapter 4 is just very similar to our
17 standard license condition now.

18 Okay. Examples. These are examples that
19 we had in the NEI 04-02 document of changes that we
20 would not consider requiring a License Amendment:
21 Replacing a fire-rated component with another fire-
22 rated component. Still has a rating. It meets some
23 sort of rating criteria and, therefore, it's a change
24 to a Chapter 3 requirement, but it's -- it's an
25 equivalency change. An equivalent change. Change in

1 frequency of a fire protection feature based on a new
2 NFPA standard. As long as the underlying basis for
3 the standard is consistent with the underlying basis
4 for how we maintain our systems.

5 DR. POWERS: Let me ask you a question.

6 MS. KLEINSORG: Sure.

7 DR. POWERS: The material when it's fire-
8 rated. If a company comes out and says that they have
9 a fire-rated material that has a 3-hour rating --

10 MS. KLEINSORG: Yes.

11 DR. POWERS: -- and it is easily -- it
12 will take my fire rating material one hour and I can
13 slap this on and it's three hours, so I do it. Is
14 that okay?

15 MS. KLEINSORG: Well, it would be okay if
16 it met all the criteria of the NFPA standard it was
17 judge against and the testing criteria. I would
18 assume if it's a new system --

19 DR. POWERS: It says it does.

20 MS. KLEINSORG: Oh, I would have to check
21 it. And if it does -- if I do check it and I make the
22 same conclusion during my change evaluation process,
23 then that would be okay. I mean, but you would still
24 -- it would have to meet -- if it's a new material, it
25 would have to meet Generic Letter 8610, Supplement 1

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1 criteria for --

2 DR. POWERS: He says it does.

3 MS. KLEINSORG: He says it does.

4 MR. MARION: Well, the utility will
5 evaluate it --

6 MS. KLEINSORG: Evaluate it.

7 MR. MARION: -- to confirm it.

8 MS. KLEINSORG: Right. One would hope.

9 MR. ERTMAN: This is Jeff Ertman, Progress
10 Energy. We would have to have that proved to us, our
11 evaluation that they did do the testing and it does
12 meet the standards.

13 MR. MARION: Without belaboring the point,
14 the challenge has been, over the years, the conduct of
15 tests has evolved and we've gotten a lot smarter. And
16 we will continue to improve and evolve as we go
17 forward. And anyone who brings a new product to
18 market and claims that he's tested it to the latest
19 requirements, the utilities are expected to evaluate
20 it and confirm that that is, indeed, the case.
21 Whatever the latest requirements and expectations may
22 be.

23 DR. POWERS: I mean the problem is, Alex,
24 as you well know, we've had people come forward and
25 say they've tested and they've gotten all sorts of

1 testimony swearing that it was the greatest test ever,
2 and we have all been burned by relying solely on what
3 is advertised.

4 MR. MARION: Yeah.

5 DR. POWERS: I would hope that we would
6 learn from those lessons.

7 MR. MARION: I think we will.

8 DR. POWERS: I certainly hope so. We
9 can't afford not to.

10 MR. MARION: After that, I don't think
11 so.

12 DR. POWERS: Well --

13 (LAUGHTER.)

14 MR. MARION: There's a lifetime.

15 MS. KLEINSORG: There's a cycle.

16 MR. POWERS: Well, that's true. That's
17 true.

18 MS. KLEINSORG: And last, of course, there
19 is a corollary to everything where you will not
20 require a License Amendment and we do believe that
21 there are things where we would require a License
22 Amendment if it was a change to Chapter 3. Reducing
23 the number of fire brigade members to below five, it
24 clearly says you have to have five. There's no way
25 around it.

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1 DR. POWERS: Can you do that and not run
2 afoul of the OSHA rules?

3 MS. KLEINSORG: Pardon me?

4 DR. POWERS: Can you do that an not run
5 afoul of OSHA rules?

6 MS. KLEINSORG: Two men in -- two in, two
7 out? Yeah. You -- two in, two out, it's only four.
8 So I don't think you could go below, much below five
9 and still meet OSHA Regulations, although I'm not an
10 expert.

11 DR. POWERS: Yeah, I think you'd run into
12 problems somewhere.

13 MS. KLEINSORG: Right, right.

14 DR. POWERS: In OSHA Regulations.

15 MS. KLEINSORG: Just in the safety --
16 yeah.

17 MR. APOSTOLAKIS: The risk, for example,
18 would be sensitive. I don't see how you can get a
19 Delta CDF by going to 4.

20 MS. KLEINSORG: Right. So that -- and
21 that was the purpose of -- that was actually the
22 purpose, the underlying purpose of some of Chapter 3
23 and NFPA 805. There were things that the NRC and the
24 industry kind of held sacred that couldn't be
25 evaluated away necessarily. I mean, there are a lot

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1 of programmatic issues, which would be very difficult
2 to assess from a risk perspective, I think.

3 DR. GALLUCCI: You could -- you could do
4 something though by varying the manual suppression
5 probabilities. You could increase the manual
6 suppression probabilities, assuming you have less fire
7 brigade members, and you could do some sensitivities.

8 MS. KLEINSORG: Right.

9 DR. POWERS: It seems to me that if you
10 could not do the two in, two out, you would just have
11 to say that there is not going to be any manual fire
12 plan.

13 MR. APOSTOLAKIS: What's two in, two out?

14 DR. POWERS: It's an OSHA Rule on confined
15 spaces. Fire fighting -- you put two men -- if you're
16 going to put two people in there, you've got to have
17 two people outside to rescue those two if they get in
18 trouble is the basic thing. And it's -- it is my
19 perception that our fire plans still have not
20 completely accommodated that rule. My perception. I
21 don't know that for a fact.

22 CHAIRMAN ROSEN: Okay.

23 MS. KLEINSORG: That was the end of my
24 presentation.

25 MR. RADLINSKI: Liz?

1 MS. KLEINSORG: Bob?

2 MR. RADLINSKI: Bob Radlinski.

3 DR. WALLIS: Are you going to say it?

4 MR. RADLINSKI: I'm sorry?

5 CHAIRMAN ROSEN: Go ahead, Dr. Wallis.

6 DR. WALLIS: I'm baffled by this whole
7 process. I thought we were going to hear about how
8 you use risk information in this whole process of fire
9 protection. You seem to be getting tied up with this
10 endless discussion of processes which don't use risk
11 at all. So I'm not quite sure what we're hearing. I
12 mean, it doesn't seem to be here -- I don't seem to be
13 hearing what I came here to hear. So I'm befuddled by
14 this whole thing. Maybe I'm the only one.

15 DR. GALLUCCI: I think the risk -- it's
16 Ray Gallucci. I think the risk processes would
17 encompass what you heard a couple weeks ago from the
18 Research people, things from the Fire Risk Re-quad
19 Study, aspects of the Fire Protection SDP on a more
20 scooping nature --

21 DR. WALLIS: I came here with great
22 enthusiasm to hear about how you're going to
23 revolutionize things by using -- by being risk-
24 informed. I haven't really heard it. Again, maybe I
25 have the wrong assumption.

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1 MR. APOSTOLAKIS: Well, they key slide
2 that explains why you didn't hear it is Slide 10.

3 CHAIRMAN ROSEN: Yeah, the block under
4 "quantitative risk evaluation" on Slide 10. We just
5 jumped over that. Because everybody knows what you're
6 going to do --

7 MR. APOSTOLAKIS: No, it was not the
8 Chapter slide. It was this other one. The Info Slide
9 5.

10 DR. WALLIS: You do the best you can with
11 --

12 MR. APOSTOLAKIS: That says that everybody
13 wants to be deterministic and, as a last resort --

14 DR. WALLIS: That is impossible to do
15 deterministically, and then you -- this last resort --

16 MR. APOSTOLAKIS: As a last resort, you go
17 to risk, yeah.

18 DR. WALLIS: As a last resort, you go to
19 risk. That's very strange.

20 MR. APOSTOLAKIS: That's why you haven't
21 heard more about it.

22 DR. WALLIS: Very peculiar.

23 MR. APOSTOLAKIS: Because the problem is
24 that fire protection engineers are trained to be
25 awfully deterministic.

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1 DR. WALLIS: Another thing. While we're
2 talking about NEI 04-02 -- I guess we're talking about
3 that, are we?

4 MS. KLEINSORG: Yes.

5 DR. WALLIS: I thought the best part of
6 the whole thing was Appendix D.

7 MR. MARION: Thank you.

8 DR. WALLIS: It was very good, a very nice
9 overview of the state-of-the-art of fire models.

10 MS. KLEINSORG: Thank you. I will pass
11 that on.

12 MR. APOSTOLAKIS: Yeah, that was a good
13 thing.

14 MS. KLEINSORG: Thank you.

15 DR. WALLIS: I don't know who wrote it,
16 but it is a good, a very good job --

17 MR. APOSTOLAKIS: A very detailed proper
18 use.

19 DR. WALLIS: -- of explaining what we can
20 do and what we cannot do.

21 MR. APOSTOLAKIS: Can be state-of-the-art.

22 DR. KLEINSORG: Phil DiNenno wrote it.

23 MR. APOSTOLAKIS: It is the state of the
24 practice of fire analysis.

25 CHAIRMAN ROSEN: I have the feeling that

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1 you're being more than -- not kind to this effort, in
2 the sense that on Slide 10, there is a block entitled
3 "Detailed Quantitative Risk Evaluation" and one could
4 spend however much time you want to talk about that,
5 you know, we're going over Appendix D and all the
6 rest.

7 MR. APOSTOLAKIS: No, but Ray just told us
8 that you can work around it.

9 CHAIRMAN ROSEN: I understand that, but
10 I'm
11 saying that there is a way to do quantitative risk
12 evaluation in NEI 04-02 or referenced by it, shown on
13 these graphs and I don't think you should leave with
14 the impression that it --

15 MR. APOSTOLAKIS: After you transition?

16 CHAIRMAN ROSEN: Yeah, yes. -- should
17 leave the impression that it's not there. It is. It
18 just wasn't discussed today. We skipped over it.

19 DR. WALLIS: I thought it was, you know,
20 the use of risk was going to be more -- was going to
21 play a bigger role in this whole show, that's all.

22 MR. APOSTOLAKIS: During the transition
23 phase, evidently it doesn't. That's really what the
24 message is.

25 MR. MARION: We would be more than happy

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1 to brief you after we go through this exercise with a
2 couple of plants. I think that would --

3 MR. APOSTOLAKIS: Oh, yeah.

4 CHAIRMAN ROSEN: And to hear in particular
5 where they use quantitative risk evaluations.

6 MR. APOSTOLAKIS: Definitely.

7 MR. MARION: Is that okay, Jeff?

8 MR. ERTMAN: Yes.

9 MR. APOSTOLAKIS: So where are we?

10 CHAIRMAN ROSEN: Well, we're up to the
11 next item on the Agenda, which is Mr. Dipert, I think.

12 MR. APOSTOLAKIS: And this gentleman is
13 talking about?

14 CHAIRMAN ROSEN: The Agenda? Inspection
15 Procedure.

16 MR. APOSTOLAKIS: Thank you very much.

17 MR. HANNON: While we're setting up, this
18 is John Hannon. I want to make sure that I picked up
19 the right signal from the Committee. Based on our
20 initial statement of desire for approval of the Reg.
21 Guide, did I understand from the last discussion that
22 the Committee is not inclined to endorse the Reg.
23 Guide because there was an issue that was still on the
24 table that we had not worked through?

25 CHAIRMAN ROSEN: I think what you heard

1 was that we would need to discuss that amongst the
2 Committee when the presentation is finished.

3 MR. HANNON: If there is -- if that's
4 going to be an issue, I want us to come back and
5 revisit that before we close up.

6 MR. APOSTOLAKIS: What issue is this? I'm
7 sorry, I missed it.

8 CHAIRMAN ROSEN: There's an open question
9 on engineering equivalency that is still being
10 discussed between the staff and the industry.

11 MR. RADLINSKI: After listening to Liz's
12 presentation, I don't think we have a problem. I
13 think -- and we were just about to have a sidebar
14 discussion on that. I think we are in agreement
15 pretty much. We just have to work out the final
16 details.

17 CHAIRMAN ROSEN: Well, is there -- are
18 there changes that would be made in the NEI document
19 or in the Reg. Guide to support that?

20 MR. RADLINSKI: The Reg. Guide does not
21 have to change. I'm not sure about 04-02. I haven't
22 seen the latest version.

23 CHAIRMAN ROSEN: Well, that's the
24 question. If such changes are needed, then we'd have
25 to have --

1 MR. WEERAKKODY: I think what we would do,
2 Chairman Rosen, is anything that -- anything that we
3 change, we would have a little sidebar, because as you
4 know, we have spent a lot of time reading NEI 04-02,
5 so anything that has changed from the version you saw
6 when you get copies, we are going to highlight those
7 pages or those paragraphs for your information. Okay?
8 And that's -- we will definitely do that.

9 CHAIRMAN ROSEN: Okay, let's go on. We
10 are quite a bit behind.

11 MR. MARION: Alex Marion. Just to make
12 sure I understand the process. The next step for the
13 NRC is to put the draft Reg. Guide out for comment,
14 right? Or is it going to --

15 MR. WEERAKKODY: We did that six months
16 ago.

17 MR. MARION: Oh, that's right.

18 MR. WEERAKKODY: September 30th, we issued
19 the draft for comments.

20 MR. MARION: I must be thinking about the
21 Regulatory Issues. For some reason, it just came out.
22 Sorry.

23 CHAIRMAN ROSEN: Please. No, that's not
24 you -- oh, yes, I'm sorry. Go ahead. Inspection.

25 MR. WEERAKKODY: Just as a lead-in, before

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1 I turn it over to Rich Dipert here, when the
2 Commission approved the 805, it clearly endorsed
3 different things that the staff can do to eliminate
4 the uncertainties for licensees who plan to update to
5 805 because the Commission recognized that on one
6 hand, the licensees who would update to 805 would be
7 spending a lot of resources that the others don't,
8 reinvestigating their licensing basis and, as such,
9 they will find stuff that the other licensees don't.
10 And then also the Commission recognized that any time
11 you change your licensing bases and go to a new
12 environment, as a licensee you take a risk. And if I
13 list the four -- the three key areas, one was the
14 enforcement, the licensees were concerned that when
15 they step out and do self-assessment to transition,
16 they didn't want to be penalized by those findings and
17 as such, the Commission approved enforcement
18 discretion. Not meaning that they don't have to fix
19 the problems, but they can identify them and fix them
20 under the 805 environment. Then the second thing was
21 the Reg. Guide, and I know one of the significant
22 concerns most licensees have even today is that how is
23 the Agency going to implement this. And I think the
24 tool that will address that is 805, the Reg. Guide,
25 which is what we are seeing today. And the third and

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1 the final thing that's in front of us is Inspections.
2 And what you're going to hear now from Rich is details
3 of that -- not details, our plan for that. In
4 comparison to the Reg. Guide, please bear in mind that
5 this is our plan. In other words, the Reg. Guide, we
6 are coming to you for your approval with the finished
7 product. Whereas, the Inspection, what we will go
8 through is what we will deliver over the next nine
9 months. So with that -- can you go to the second
10 slide, please?

11 Rich is going to go over the first four bullets and
12 I'm going to come back to the last bullet, the Summary
13 of Approach, and when I go to the last bullet, I will
14 address some of the concerns you had with respect to
15 the PRAs and how we would make sure that, you know,
16 our oversight responsibility would address that.

17 MR. DIPERT: Thank you. Can everyone hear
18 me? Is this mike turned up?

19 I'm Richard Dipert. I'm the engineer in
20 charge of this phase of the program. I have the
21 simple part. I have to make it work. And when I
22 addressed the industry for the first time, I said
23 simply, "We will, we will, trust me." I can speed
24 things along I you'll accept that same explanation.

25 CHAIRMAN ROSEN: We trust, but verify.

1 MR. DIPERT: Okay. Then this phase
2 consists of two tasks: preparing input for proposed
3 inspection procedures, parallel to existing procedures
4 7.11, 11.05(t), that's the tri-annual fire protection
5 inspection procedure, and the similar annual/quarterly
6 fire protection inspection procedure used primarily by
7 resident Inspectors at sites. The second part of this
8 task is preparing the training materials for resident
9 Inspectors, regional Inspectors, and headquarter staff
10 doing those inspections. The method of that, delivery
11 of that training is still to be determined.

12 Next slide.

13 DR. WALLIS: Was the Inspector going to
14 determine that some change that's been made is
15 negatively -- has a negligible effect on risk?

16 MR. WEERAKKODY: Can we -- if you can wait
17 for the last slide, let me address that.

18 DR. WALLIS: I'm just interested in how he
19 would manage, or she would manage to do that.

20 MR. WEERAKKODY: I'll --

21 DR. WALLIS: You'll get to that?

22 MR. WEERAKKODY: Yes, last slide.

23 MR. DIPERT: As we looked at the
24 inspection procedure format, we decided to propose
25 producing new inspection procedures. Again, for the

1 tri-annual fire protection audit for plants adopting
2 an NFPA 805 and quarterly, an audit, annual audit
3 procedures for plants adopting NFPA 805.

4 I think we recognized that there were
5 differences in compliance strategies from the Appendix
6 R plants, which are primarily prescriptive plants.
7 Trying to put these into a single procedure would have
8 been needlessly complicated to inspect both the
9 existing plants and the new ones, new format. We are
10 looking at doing this in a format that is parallel to
11 the existing procedures so that the Inspectors will
12 see procedures that they're familiar with and it
13 should be a straightforward process. I won't say it
14 will be easy, but I believe it will be straightforward
15 to bring the regional Inspectors and the resident
16 Inspectors up to speed with a procedure that they can
17 become familiar and comfortable with.

18 Also, developing separate procedures will
19 give us a set of procedures that we can allow
20 evolutionary incorporation of lessons learned and
21 we're going to have a lot of those as we go through
22 the --

23 DR. WALLIS: Are you going to tell us what
24 new tools the Inspectors will have?

25 MR. WEERAKKODY: The fire models?

1 DR. WALLIS: Are they going to have a fire
2 SPA model?

3 MR. WEERAKKODY: The fire models and the
4 PRA models.

5 DR. WALLIS: Something like a fire SPAR
6 model? Do you know what a SPAR is?

7 MR. WEERAKKODY: Yeah, I know. I used it.
8 For two years. Yes, you know, they will have that --
9 yes, the Inspectors have access to the fire protection
10 SDP, they have access to the SPAR if they want to go
11 to that level of detail.

12 MR. APOSTOLAKIS: So it would be a fire
13 PRA?

14 MR. WEERAKKODY: Yes, they will have
15 access to those.

16 DR. GALLUCCI: Ray Gallucci. Research is
17 currently beginning a project where they are going to
18 update the SPAR models for fire PRA where it's
19 available. I think to date, they've done two, but
20 it's very limited by which plants have -- I don't
21 think more than twenty-five percent of the plants have
22 fire PRAs and none of them have them of the vintage
23 that meets the new NUREG CR6850 Re-quad Study.

24 MR. APOSTOLAKIS: Wouldn't then this
25 adoption of 805 accelerate the process? Wouldn't that

1 be an incentive for the utilities who actually --

2 MR. WEERAKKODY: Yes. Yes.

3 MR. APOSTOLAKIS: Because they already
4 have the IPEEE.

5 MR. WEERAKKODY: Yes.

6 MR. APOSTOLAKIS: And all they need to do
7 is upgrade?

8 MR. WEERAKKODY: Yes.

9 MR. DIPERT: Next slide. As part of this
10 phase, we've gathered a working group together. This
11 working group has PRA expertise, fire protection,
12 engineering expertise. We have a representative from
13 the Inspections Branch. And we have regional
14 Inspectors from two of the regions with fire
15 protection electrical and mechanical expertise.

16 The charter for this working group
17 includes serving as a source of knowledge as we go
18 through writing the procedures, reviewing and
19 commenting on the procedures, and reviewing and
20 commenting on the training materials. We're trying to
21 get the regions involved from the very beginning so as
22 to make this process move forward as easily and as
23 quickly as possible.

24 CHAIRMAN ROSEN: You have one
25 representative from each region?

1 MR. DIPERT: No, sir, we have one
2 representative from Region 2 and one representative
3 from Region 4. Right now, we're anticipating -- since
4 the two committed pilots, or one committed and one
5 tentatively committed pilots are both from Region 2,
6 we wanted to certainly get them onboard. Region 4 has
7 had some plants that have looked at using PRA
8 techniques from NFPA 805 without committing to an NFPA
9 805 transition and they expressed the interest in
10 getting involved in the writing.

11 As we -- on the next slide, we'll discuss
12 how we're going to have all of the regions reviewing
13 this. The other regions are staying in touch, but
14 they do not have active members on the --

15 CHAIRMAN ROSEN: I just worry about one
16 region later on saying, well, we were too disconnected
17 from the process. We do things differently enough
18 here that --

19 MR. WEERAKKODY: Our normal process would
20 not allow that. I have Peter Koltay from the
21 Inspection Branch in the back. And every Regulatory
22 product that has an impact on how the regions do
23 business has a formal 30-day -- is that a 30-day
24 comment period, Peter?

25 MR. KOLTAY: This is Peter Koltay from the

1 Inspection Branch. We're still going to follow our
2 normal process for issuing the procedures, so that
3 means that each region will reflect and comment on the
4 procedures and their comments will be incorporated.
5 If there is any training involved, all regions will be
6 involved in the training. So it's not like we're
7 exclusively going to use Region 2 and another region
8 in this process.

9 CHAIRMAN ROSEN: This process has been
10 fragmented in a lot of ways for many, many years and
11 I think it's the poster child for where you need
12 ultimately good communication, when you're changing
13 something.

14 MR. WEERAKKODY: One of the -- and I
15 didn't want to talk about it -- we have semi- -- we
16 are developing lesson plans for semi-annual training
17 for the four regions and 805 is one of the subjects
18 that we will cover.

19 MR. KOLTAY: I also see some SRA
20 involvement from the regions as well because --

21 CHAIRMAN ROSEN: Oh, absolutely.

22 MR. KOLTAY: -- this is more risk-informed
23 than we had.

24 CHAIRMAN ROSEN: When we visit the
25 regions, which we do once a year, we always hear from

1 -- we hear from the SRAs a lot and I remember comments
2 from SRAs like, "Well, we're spending an inordinate
3 amount of time on findings from inspections, and
4 particularly findings from the fire area." So let's
5 just pass that along.

6 MR. DIPERT: To assist with this, we also
7 have a contractor onboard, Pacific Northwest National
8 Laboratory. This contractor has a great deal of
9 experience, produced the draft Regulatory Guide, and
10 other fire protection standards. In short, here I
11 believe that we have the right group onboard to write
12 it, to write these procedures, and the write group
13 onboard to guide it and comment on it.

14 Next slide, please. Our milestones for
15 this, this is a very aggressive schedule. We're
16 looking at having draft input on the first tri-annual,
17 the first procedure input, the tri-annual, by June of
18 2005. We're looking at providing that to the working
19 group for their comment. We're looking at the fire
20 protection section transmitting draft input to the
21 Inspections Branch for regional review by August of
22 2005. We will be making presentations at the NEI Fire
23 Protection Information Forum in late August in San
24 Francisco on the draft pre-decisional input. We'll be
25 holding the regional stakeholders meeting to resolve

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1 comments by October of 2005. And we look to have the
2 input for the REV. 0 for the Inspections Branch for
3 review and implementation by December of 2005.

4 DR. WALLIS: Well, this is all just things
5 you plan to do. Do you see any difficulty with
6 providing useful materials to the Inspectors so that
7 they can implement this?

8 MR. DIPERT: No.

9 DR. WALLIS: Are there any snags or
10 anything? Or is it all just going to be
11 straightforward? You can plan it and it'll happen?

12 MR. WEERAKKODY: It's not going to be
13 straightforward. I think we have to work at --
14 especially with the inspections in the Regulatory PRN
15 Fire Modeling.

16 DR. WALLIS: Right.

17 MR. WEERAKKODY: Yeah, that's a challenge
18 we have and I'll go --

19 DR. WALLIS: I just wonder if it's a bigger
20 challenge than you think.

21 MR. WEERAKKODY: Well, we know it's ahead
22 of us.

23 DR. WALLIS: Just because you have a
24 schedule doesn't mean to say that you're going to be
25 able to do it.

1 MR. DIPERT: I expect that REV. 0 may be
2 a framework. We have transition pilot plan
3 observational visits that we're going to be seeing
4 over the next two years. The best way to push this --
5 to compare this inspection pilot procedure is to take
6 that against the observation visits of the pilots and
7 use it on a trial basis. To push that procedure, to
8 use it, yes, I expect there will be further revisions
9 to it. I haven't seen a REV. 0 that captured
10 everything in twenty years of engineering practice.
11 But putting this out, I think, helps the regions and
12 the residents capture -- have something to look at.
13 It helps industry look at what they're doing and what
14 they're going to be inspected by and to do it in time
15 to look at most of the observation visits allows us to
16 apply it against that and then to come back as part of
17 the lessons learned and improve it. This is a plan,
18 you're correct. There are a lot -- I hope I -- when
19 I said I had the simple job, I only had to make it
20 happen, that's a little bit "tongue-in-cheek."

21 DR. WALLIS: Well, I understood that. But
22 this whole idea that you can do it may turn out to be
23 an illusion.

24 MR. WEERAKKODY: 805 was an --

25 DR. WALLIS: You have the tough job,

1 really.

2 MR. WEERAKKODY: We've had our challenges,
3 but --

4 DR. WALLIS: This is the tough part of the
5 job as I see it, implementing it.

6 MR. DIPERT: Sunil just wants to jump
7 right in there and --

8 MR. WEERAKKODY: Now, I have the schedule.

9 CHAIRMAN ROSEN: Alright, this is good.
10 Now you have a clear field to do anything you want.

11 DR. WALLIS: Black writing on a
12 blackboard.

13 CHAIRMAN ROSEN: You're unconcerned by
14 anything -- by any ideas that might have been put on
15 the last slide?

16 MR. DIPERT: We expect draft training
17 materials, again, to be end of the year. Final
18 training materials, after observation visits. We are
19 looking at training sessions after one or more of the
20 observation visits. We are planning to take these to
21 the regions. Those plans haven't been firmed up yet,
22 but we expect to keep the regions -- this has to be
23 usable by them. That's the focus. And if it's --
24 there's no -- there's no way not to -- there's no way
25 that I can fail at this. Failure is not the option

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1 here; it has to be useful by them.

2 CHAIRMAN ROSEN: Well, you envision, I
3 presume, some licensees doing some actual fire
4 modeling?

5 MR. DIPERT: Yes.

6 CHAIRMAN ROSEN: And, therefore, some of
7 your field people are going to have to recognize
8 they're looking at fire modeling, a), and b) they
9 ought to be at least conversive enough to pick up the
10 phone and ask somebody back here if it's okay.

11 MR. DIPERT: Yes.

12 CHAIRMAN ROSEN: So I don't expect them
13 to
14 be experts in fire modeling necessarily.

15 DR. WALLIS: Well, maybe some great big
16 CFD program that uses beautiful colored pictures and
17 says, "This is a fire." And the Inspector has to
18 decide, "Do I believe that?"

19 CHAIRMAN ROSEN: So we kind of gave you
20 the answers already. But you will encounter fire
21 modeling and I guess --what's your view of that?

22 MR. WEERAKKODY: Yes.

23 MR. DIPERT: I thought -- well, in
24 previous employers, I've been at the point where I've
25 been, both as a researcher at the Bureau of Standards,

1 developed some of the early fire models, and as a
2 Chief Fire Protection Engineer for a State Fire
3 Marshall's Office, I've been in the position where I
4 had to evaluate those fire models and had to help
5 other people, other fire Inspectors, who had less
6 training.

7 MR. KOLTAY: Let me comment on that a
8 little bit because this has been a touchy point for
9 the past couple of years for us. And I don't know if
10 you remember Doug Coe, who used to be my boss in this
11 area, was very concerned about the training and
12 capability of Inspectors to assess the licensees in
13 this area when they do this transition. And while
14 some discussion has been going on here about PRA and
15 fire models, the first -- at least the first two
16 licensees will have full PRAs and we don't have
17 Inspectors who can assess those. Some of the thoughts
18 we have is to have, just like you indicated, by fire
19 modeling, they may recognize a fire model, but we
20 could develop some kind of checklist perhaps that will
21 ask them to look at a couple of key areas to give
22 reasonable comfort that the licensee's model makes
23 sense. If you want to go beyond that, anything beyond
24 that would have to be reviewed by at last an SRA or
25 some risk analyst with capability beyond an SRA,

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1 definitely not by the Inspectors in the field. But
2 we want to be able to give enough tools to the
3 Inspectors that they can recognize a potential issue.

4 CHAIRMAN ROSEN: Yeah, SRAs will have to
5 be expert in PRA, and I'm impressed by their growing
6 knowledge levels, but they aren't likely to be experts
7 in fire modeling.

8 MR. KOLTAY: They may not, and as long as
9 an Inspector can recognize that he has a potential
10 issue with a model or anything that the licensee has
11 done in this area, and can move it up the ladder of
12 expertise in that area, that's good enough for the
13 Inspector and inspection guidance.

14 CHAIRMAN ROSEN: I should think that any
15 time a licensee does a calculation based on one of the
16 fire dynamics tools that the Inspector can have a look
17 at it for sure, but after about a few hours of having
18 a look, it probably rates a phone call back here for
19 someone to say, "I'm looking at use of a fire model to
20 make a decision to clean an area out or not or make a
21 change or not. My guess is it looks okay, but what do
22 you guys think?"

23 MR. WEERAKKODY: This happens today, but
24 to describe -- Naeem is in the back there, he's my
25 fire modeling expert. Whenever there is a contingency

1 issue, whenever Inspectors have questions, he gets
2 calls and because he's --

3 DR. WALLIS: You're taking a great leap
4 forward, it seems to me, in putting these -- in
5 combining these fire models with a PRA because the
6 PRAs that we have for accidents don't take much
7 account of thermal hydraulics criteria which bypass a
8 lot of this, an understanding of the thermal
9 hydraulics.

10 MR. WEERAKKODY: I don't see --

11 DR. WALLIS: You're going to bring in the
12 --

13 DR. KOLTAY: This is success criteria.

14 DR. WALLIS: -- physics into this?

15 MR. WEERAKKODY: Yeah, I look at the fire
16 models as something that --

17 DR. WALLIS: It's success criteria, but
18 it's a lot of -- you know, it's just very high level.
19 You're not looking at details of how it's modeled.

20 MR. WEERAKKODY: I look at the fire models
21 as something that feeds into the PRA, or could feed
22 into the PRA.

23 DR. WALLIS: Oh, it should, but that --

24 MR. APOSTOLAKIS: The physics of it, yes.
25 In the fire PRA, yes. You have the fire modeling,

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1 right.

2 CHAIRMAN ROSEN: It feeds into the PRA.
3 It will tell you whether a given cable is damaged or
4 not, presumably, and then you put that into the PRA.

5 MR. WEERAKKODY: I mean -- I know you had
6 like a half-day presentation on fire modeling from
7 Research, you know, we have come a long way from the
8 days of conburn (phonetic) which are used widely by
9 police. Now we have not one, but Research has given
10 us four models of different degrees of --

11 CHAIRMAN ROSEN: You had -- the
12 applicability for different problems.

13 MR. DIPERT: We'll let Sunil discuss the
14 last page, which may not be the next slide -- or is
15 this --

16 MR. APOSTOLAKIS: Is this part of the
17 Regulatory Guide?

18 MR. WEERAKKODY: No, this is the
19 Inspection.

20 MR. APOSTOLAKIS: Yeah. So the letter we
21 are asked to write is on the Regulatory Guide?

22 MR. WEERAKKODY: Yes.

23 MR. APOSTOLAKIS: So this is extra?

24 MR. LAIN: These are extra presentations.

25 I talked with --

1 MR. APOSTOLAKIS: Extra presentations. I
2 need to have some input from the members on what they
3 want to see in the letter.

4 DR. WALLIS: Well, I think this is
5 critical. I think this is critical. I mean, if we
6 don't believe that the inspection can demonstrate
7 that, you know, ultimately the satisfaction of the
8 safety of these changes that are made, then I think it
9 impacts back on the Regulatory Guide and whether it's
10 acceptable.

11 MR. APOSTOLAKIS: I have a inspection
12 program. We know that.

13 DR. WALLIS: See, I heard Dr. Gallucci say
14 that the Inspectors are going to also help us
15 understand what the safety margins are. I mean, and
16 I see one looking at these fire models and saying,
17 well, is it approximately okay for this kind of
18 application or is it appropriate to this application.
19 That takes one level of engineering judgment. It
20 takes quite a different engineering level of judgment
21 to really understand the uncertainties of those models
22 and say, well, not only is this applicable, but it
23 provides me a safety margin. And I see that as a
24 tremendous burden on the inspection activity. We all
25 recognize that the typical Inspector clearly can't do

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1 that. Is he going to be able to bring it back to
2 people in the region or back at headquarters that can
3 do that? So I think we have to see a process that
4 enables us to demonstrate that there really is, built
5 into this, safety margin and Defense-in-Depth.

6 MR. WEERAKKODY: Do you want me to go over
7 this?

8 MR. APOSTOLAKIS: No.

9 MR. WEERAKKODY: No?

10 MR. APOSTOLAKIS: Well, the Chairman is
11 there. Why do you look at me?

12 CHAIRMAN ROSEN: Well, I think, yeah, you
13 ought to finish your presentation. You've got one
14 more short presentation there.

15 MR. WEERAKKODY: Okay. What I was
16 planning to do is, in fact, to focus at a high level
17 on the main differences between inspection of the
18 current versus the future 805 plans and in this slide,
19 you know, I have highlighted the three areas that the
20 Inspectors of 805 would focus on. Specifically, our
21 focus is going to shift to the acceptability or the
22 use of fire hazard models. The acceptability of the
23 change condor (phonetic) process that they have used
24 and how they have used Reg. Guide 1.174 and Risk
25 Assessment 2. I know Dr. Wallis mentioned he came

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1 here to hear about PRA. One of the things that you
2 should know is that there is a connection between --
3 not a -- between the Regulatory tools that are being
4 developed like, for example, user presentation on
5 NUREG CR6850.

6 So even though we didn't elaborate on that
7 kind of tool, when the Inspectors go and they look at
8 whether a particular model or particular method is
9 acceptable, the Inspectors are going to ask is this
10 acceptable or not. So we are going to rely on the
11 NUREG CR6850 and the fire PRA models and fire PRA
12 methodologies that are specified there. You know,
13 they will be making those decisions.

14 CHAIRMAN ROSEN: And the internal events
15 PRA. It reflects back onto the internal events PRA>

16 MR. WEERAKKODY: To the extent that
17 happens, yes.

18 CHAIRMAN ROSEN: I mean if you have
19 damage, if you calculate damage, after you go through
20 6850 modeling and you calculate there's going to be
21 some damage to cables, you have to identify what
22 systems are damaged, when are they damaged, and go
23 back into the internal events PRA and make the
24 necessary changes to take those systems out of service
25 at the right moment, and then make the internal events

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1 runs and see what the CDF changes are. I mean it's a
2 process. There is nothing mysterious about that, but
3 the tools are hard to use, technically challenging in
4 some cases, and well beyond the buy-in expectations
5 for any resident or regional inspector.

6 MR. WEERAKKODY: I don't know whether you
7 use the most recent tools that NRI and Research
8 developed, the NUREG 1805 (phonetic) tools? I don't
9 know whether Research made a presentation on those.

10 CHAIRMAN ROSEN: On the fire dynamics
11 tools?

12 MR. WEERAKKODY: Yes.

13 CHAIRMAN ROSEN: Yes, I know about them.

14 MR. WEERAKKODY: So I -- you know, we have
15 been giving repeated training to Inspectors on how to
16 use them, so I think even the Inspectors have come --

17 CHAIRMAN ROSEN: You think I'm
18 underestimating the regional and resident Inspectors?

19 MR. WEERAKKODY: Yes, yes, I think so.

20 CHAIRMAN ROSEN: I hope so.

21 MR. WEERAKKODY: Because if you look at my
22 semi-annual training plan, I have a half-day dedicated
23 for training them on that kind of tools. I can't make
24 them experts, but there is a recognition that you
25 can't risk-inform a plant without risk-informing the

1 Inspectors.

2 DR. GALLUCCI: This is Ray Gallucci. All
3 the regional fire Inspectors have been trained on the
4 fire protection SDP and I think next month there's the
5 training on NUREG CR6850 in Charlotte, which at least,
6 the SRAs will be attending. So they are -- they
7 should be up to speed on all the aspects of the fire
8 protection SDP which, in a sense, is a kind of a
9 compilation of some of the more important aspects of
10 NUREG CR 6850. So they have received the training.
11 Whether they're comfortable with it, it varies.

12 CHAIRMAN ROSEN: It sounds like the snow,
13 the knowledge is filtering down, but it's going to
14 take time and then, of course, it takes years, too.
15 You can't become an expert on something you might have
16 heard about and have been trained in if you've never
17 used it.

18 MR. WEERAKKODY: Yeah, I just came to
19 agreement to hold the next semi-annual fire protection
20 training at Region 2 because it's -- and then that's
21 going to be like a two and a half day or three day
22 training, and like I said, 805 tools are just part of
23 the picture, and we are going to --

24 MR. LAIN: Let me make a programmatic
25 statement here that we're trying to get this procedure

1 out, or at least a REV. 0 out by December, but we
2 really -- this is for post-transition inspections, so
3 it really won't be used until, let's say, Oconee, you
4 know. The issues are transitioning in -- the end of
5 2007/2008 timeframe.

6 And so, you know, we're are going to still
7 have a couple of years to identify items that, you
8 know, they need more training and we're still going to
9 work on this. We're trying to get a procedure out now
10 to help reduce some Regulatory uncertainties, have the
11 licensees feel a little bit better that this is how
12 we're doing this.

13 CHAIRMAN ROSEN: I agree you have some
14 lead time --

15 MR. LAIN: So we've got some -- we've got
16 some work to do.

17 CHAIRMAN ROSEN: -- and that's a good
18 thing, and as long as you don't fritter it away.

19 MR. LAIN: Yeah.

20 CHAIRMAN ROSEN: Now, Mr. Lain, your
21 presentation, or -- Mr. Apostolakis, do you have a
22 request for input?

23 MR. APOSTOLAKIS: Yes. Can I get my input
24 before the presentation? Because the presentation
25 really is not relevant to the --

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1 CHAIRMAN ROSEN: I don't know what's going
2 to be in the presentation, but I --

3 MR. APOSTOLAKIS: Transition of the Pilot
4 Program.

5 CHAIRMAN ROSEN: Pilot Program. I will
6 ask the other members to --

7 MR. WEERAKKODY: And we lost two already.

8 CHAIRMAN ROSEN: Well Mario looks like
9 he's gone; Dana may come back.

10 DR. DENNING: I'm okay.

11 CHAIRMAN ROSEN: I'm okay, too. Are you
12 in any --

13 MR. APOSTOLAKIS: No, no, but can you give
14 me some advice?

15 CHAIRMAN ROSEN: All right, I understand.
16 Let's just start. Dr. Denning?

17 MR. APOSTOLAKIS: The request is to
18 approve the Regulatory Guide?

19 MR. WEERAKKODY: Yes.

20 DR. DENNING: At the moment, I would have
21 serious reservations. I don't think I'm at that point
22 yet and my colleague can give you some guidance.

23 MR. APOSTOLAKIS: Can you send me an E-
24 mail?

25 DR. DENNING: I'll send you something, yes.

1 MR. APOSTOLAKIS: In the next two or three
2 days?

3 DR. DENNING: Yes.

4 MR. APOSTOLAKIS: Good. Thank you.

5 CHAIRMAN ROSEN: Dr. Wallis?

6 DR. WALLIS: I think I've said it, but I
7 just don't know what you could possibly put in your
8 letter.

9 MR. APOSTOLAKIS: Say again.

10 DR. WALLIS: I said I don't know what you
11 could put in your letter. The Regulatory Guide is
12 supposed to be about Risk-Informed, Performance-Based
13 Fire Protection and we haven't heard much about that
14 at all.

15 MR. APOSTOLAKIS: So you're voting?

16 DR. WALLIS: Like I said, I don't know
17 what took place here today.

18 MR. APOSTOLAKIS: You don't know, so you
19 also have reservations?

20 (No response.)

21 MR. APOSTOLAKIS: Mr. Chairman?

22 CHAIRMAN ROSEN: Well, I think this is a
23 process step that's needed. And one needs to get the
24 Reg. Guide out if only to let people know where the
25 staff is headed. I think it's a competent job. There

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1 is a piece missing, which troubles me a little bit,
2 but I assume that we can -- I'm going to bet that we
3 can rectify that, that that can be handled. So, I
4 would say, having -- yeah, we didn't hear a lot about
5 risk analysis or fire, as Dr. Wallis said. Maybe he
6 had expectations that we would. I did not have those
7 expectations. So I don't feel quite the way he does.
8 I have studied in some detail the re-quantification
9 document, 6850, so I -- at least I know what's
10 intended to be done in the risk analysis and have
11 looked at the dynamics tools and the V&V of those
12 tools, so I at least know what's in process.

13 I do want to say everything's moving -- a
14 lot of these pieces are inter-connected and they're
15 all moving together at varying speeds, but I think
16 they're all moving in the same general direction,
17 which is to put out a full panoply of tools and
18 techniques used to change the situation we're in in
19 the area of fire protection regulation. I think
20 that's a good thing. I support the staff and I would
21 vote to issue the Reg. Guide.

22 MR. APOSTOLAKIS: I suggest that at the
23 meeting in June you present very clearly what the
24 requirements are during the transition and what the
25 requirements are after the transition. Today, we had

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1 to -- started to get about it, but during the
2 transition, it's largely a deterministic effort.
3 After the transition, if anyone wants to make a
4 change, that has to be risk-informed. Right? After
5 the transition?

6 MR. WEERAKKODY: Yes.

7 MR. APOSTOLAKIS: Also, there is some
8 problem with the language in the Reg. Guide here. I
9 mean, this quantitative thing being --

10 MR. RADLINSKI: Can I go back to what the
11 Chairman said here? I agree with the big picture,
12 what they seem to be trying to do, which is to bring
13 in risk information, bring in fire modeling and to
14 upgrade the whole process, and have a far better way
15 of assessing how to make decisions about fires and how
16 to improve public safety. But we seem to have gotten
17 lost in details which are tangential to that. So how
18 to get out of using risk, how to find ways around it
19 and all that kind of stuff.

20 DR. WALLIS: That's the annoying thing.

21 MR. RADLINSKI: This seems very -- I'm
22 baffled by that.

23 MR. APOSTOLAKIS: Yes, they seem to be
24 going out of their way not to do a risk assessment.

25 DR. WALLIS: Right.

1 CHAIRMAN ROSEN: Well, I agree with that
2 feeling and that's a little puzzling to me, but I
3 understand it.

4 MR. APOSTOLAKIS: Well, how can we change
5 that?

6 CHAIRMAN ROSEN: Well, I understand it.
7 I understand where it's coming from, I think, having
8 been in the industry for many years, that there are
9 some industry participants who don't want to move this
10 way, want some of the benefits of it, of the risk-
11 informed approaches, and NEI being a consensus
12 organization of all the utilities, is trying to
13 accommodate them. So this comes through.

14 MR. APOSTOLAKIS: But this is voluntary,
15 Steve.

16 CHAIRMAN ROSEN: I understand.

17 MR. PARTICIPANT: Okay, well, thank you.

18 MR. RADLINSKI: Can I interject a comment
19 about your -- Dr. Rosen, your comment about a missing
20 piece, and I believe its involvement with respect to
21 the equivalency?

22 CHAIRMAN ROSEN: Right.

23 MR. RADLINSKI: Liz Kleinsorg and I had an
24 opportunity to speak outside about this issue and
25 after talking about it, we realized that we were not

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1 in disagreement. We are in agreement, okay, so it is
2 not a missing piece. It's not an exception.

3 CHAIRMAN ROSEN: So you don't think the
4 Reg. Guide will change?

5 MR. RADLINSKI: The Reg. Guide does not
6 need to change. They may take some of their examples
7 out and maybe change some of the wording in their
8 document.

9 CHAIRMAN ROSEN: The NEI document?

10 MR. RADLINSKI: Right.

11 CHAIRMAN ROSEN: There might be some
12 changes there. Well, frankly, I didn't spend a whole
13 lot of time on the Reg. Guide after reading it once or
14 twice. I just went to this document. This is really
15 what will be -- the 04-02 is what will really --

16 MR. RADLINSKI: Right, but it's really not
17 the approach that they're going to be changing; it's
18 just some of the examples that they have in there that
19 demonstrates that approach.

20 CHAIRMAN ROSEN: Okay. Well, maybe that
21 simplifies it. We still have the problem, though, of
22 dealing with the concern of at last two members, maybe
23 three, that the way this is written, the lowest common
24 denominator approach, tends to appear as if the Agency
25 is trying to push a less Reg. risk method, set of

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1 methods than, I think, you would all prefer. So
2 that's a -- maybe a case of emphasis or the way it's
3 presented. In any event, if that's all -- George has
4 gone, so we don't need to give him anymore input.

5 DR. WALLIS: Well, this is -- I'd like to
6 see a presentation on how do we move to this Risk-
7 Informed, Performance-Based Fire Protection approach,
8 and there seems to be much more of a discussion of how
9 do we sort of apply doing it. What are all these
10 other alternatives whereby we can use part of it or,
11 you know, use qualitative rather than quantitative and
12 so on. This seems to be a backwards approach.

13 CHAIRMAN ROSEN: Maybe, Paul, you want to
14 do your last presentation?

15 DR. WALLIS: Well, actually I read the
16 stuff. I thought that the NEI 04-02 was actually
17 quite a good document. When it was presented here,
18 this is a precise -- other aspects than I would have
19 emphasized.

20 MR. LAIN: I think we were just trying to
21 emphasize probably what was left in discussion between
22 us and NEI. I think that's what they were trying to
23 go over. I think, you know, I think we're in
24 agreement on how to do the combined risk analysis. So
25 I think what they were bringing up were some last

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1 issues that we were just trying to work out and get
2 through. So maybe it didn't come through. We could
3 have spent, you know, hours talking about the risk
4 analysis.

5 DR. WALLIS: Well, one of the things we're
6 always told by -- at least some of the Commissioners,
7 that it's not the ACRS' job to spend a lot of time
8 reviewing processes. And we spent an awful lot of
9 time here reviewing the process. We weren't reviewing
10 the principles, sort of, you know, the big objective
11 and that sort of thing. We got caught up in all these
12 details in the process. That's not really where the
13 ACRS adds the most value.

14 MR. LAIN: Yes, sir. So for the June
15 meeting, we'll concentrate on the technical. I guess
16 we have an hour and a half for June 2nd. Maybe the
17 problem is that some of the members who were not at
18 the Re-quantification Briefings, verification and
19 validation briefings, would have preferred to hear
20 that in some detail. And in even more detail than was
21 presented at those meetings. So I would -- since that
22 sets the foundation of this, the technical foundation
23 of this, perhaps some emphasis on that might be useful
24 so the Committee knows this is not all built on air.

25 MR. NOURBAKSH: The first day of June we

1 think we have a presentation on re-quantification by
2 Research.

3 CHAIRMANR OSEN: Okay, well that'll help.

4 MR. LAIN: Yeah.

5 MR. HANNON: Dr. Rosen, this is John
6 Hannon. I just want to revisit this point that I
7 think was made earlier by Sunil. We are constrained
8 in the development of the Regulatory Guide to be
9 consistent with the Rule that it is embellishing. So
10 the Rule itself does not require the rigorous level of
11 PRA assessment that you all are looking for here, and
12 so that's what we're constrained by. We can't write
13 something into the Reg. Guide that wasn't incorporated
14 in the Rule language itself.

15 CHAIRMANR ROSEN: I think we all
16 understand that, John, and I think what we're
17 interested in is where is the state-of-the-art, like
18 Chairman Wallis says, we're not experts on NRC process
19 and the Commission doesn't want us to become experts,
20 but where we might be able to add value is in some of
21 the more technically-founded areas. So that's why our
22 interest in this is there.

23 MR. WEERAKKODY: I think my take-back is
24 just to make sure on June 2nd our presentation could
25 spend more time on the change evaluation and how we

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1 would plan to use the V&V or the fire models and the
2 PRAs to enable that.

3 CHAIRMAN ROSEN: Right.

4 MR. WEERAKKODY: Rather than focus on the
5 overall process.

6 DR. WALLIS: But the title of the Reg.
7 Guide is misleading. It says "Risk-Informed,
8 Performance-Based Fire Protection." It implies that
9 that is what it's selling. Apparently, it isn't.

10 CHAIRMAN ROSEN: I wanted to give Dr.
11 Powers a chance to make any comments about any piece
12 of this that he chooses to because he was out of the
13 room when we went around the table. Dana?

14 DR. POWERS: Well, I suspect that you need
15 to give some serious consideration on -- first of all,
16 you've got to have a complete Reg. Guide to look at.
17 The ECRS as a whole is not going to accept evaluating
18 half a Reg. Guide. That's --

19 CHAIRMAN ROSEN: I think also when you
20 were out of the room, they came back and said that
21 this one little piece which was not -- on equivalency
22 evaluations, they have had a meeting and they don't
23 have a problem with it and they'll likely not be any
24 changes to the Reg. Guide.

25 DR. POWERS: Okay. Well, I mean -- it's

1 a painful experience of saying one little piece turned
2 into half the Reg. Guide changed. So the ACRS as a
3 whole is surely not going to be enthusiastic about
4 looking at an incomplete Reg. Guide. I think on this
5 Reg. Guide, you need to give some serious
6 consideration of some trial uses, as Professor
7 Apostolakis suggested, because I think there are real
8 serious misgivings about trying to do risk-informed
9 regulations without risk information. And risk
10 information, -- there are places for qualitative
11 evaluations, but quite frankly, the risk information
12 is quantitative information and if you're not going to
13 do that -- you've got to start really thinking about
14 "truth-in-advertising" here. I think that's -- I think
15 that's where the conundrum is going to arise here.

16 CHAIRMAN ROSEN: I'm going to add that
17 comes back to Chairman Wallis' comment about the title
18 of this thing. It's Risk Information, Performance-
19 Based fire protection for anybody who wants to go that
20 way, but there are ways to do it differently, too, in
21 this Reg. Guide.

22 DR. POWERS: Then there were discussions
23 on fire modeling that may be done in connection with
24 this. We've discussed this in the past and we've
25 certainly seen some very interesting presentations

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1 recently on the Risk Re-quantification Study, I think.
2 But I still think that as an institution, we are not
3 moving aggressively to get to the state-of-the-art in
4 that way to support our Inspectors when they have to
5 evaluate other people's fire modeling. And I think
6 that's -- especially when I look at the IPEEEs and I
7 see risk CDF numbers comparable to normal operations
8 and I say we're not investing heavily in this area to
9 get to be the state-of-the-art. I mean, we're
10 certainly try to get to the state-of-the-art from a
11 hydraulics. Lots of people question whether we're
12 there or not, but we, at least, try. It's not clear
13 to me that we're making the same aggressive effort in
14 fire modeling that we're -- that the risk information
15 would suggest we should be. And I can be sympathetic
16 with people in the regions when they are concerned
17 about the level of support they're going to have
18 implement some of these things.

19 CHAIRMAN ROSEN: Yeah, we had a little
20 discussion of that, but that still is to play out.

21 Okay, well, thank you very much.

22 Paul, I will turn the floor over to you
23 for
24 a brief of a summary presentation on transition of the
25 programs.

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1 MR. LAIN: Okay. We'll skip the outline.
2 We'll talk -- the high-level objective, I guess is
3 really to provide Regulatory stability to the plants
4 transitioning. Our purpose, there are some proposed
5 items that we hope to see from our pilot program.
6 We're really still in the planning stages of putting
7 the pilot program -- we've been really working heavily
8 with the Reg. Guide. So we are going to -- our next
9 big, big item, besides the Inspection Procedures, is
10 the pilot program and putting something together.

11 So here are the activities to develop a
12 program plan and we're planning on conducting
13 quarterly observation visits and those are going to be
14 negotiated with the pilot plants. But for planning
15 purposes, we've said quarterly observation visits.
16 Each observation visit will have a Trip Report and
17 then at the final, you know, prepare a lessons learned
18 report.

19 Our team right now, we're making up --
20 we're four members: a fire protection engineer, PRA
21 specialist, and then someone also from regional
22 support, somebody who's good in safe shutdown
23 electrical, but also to include the region and get a
24 regional aspect, the inspector aspect in that, and
25 we're also going to be requesting PNNL to assist us

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1 since they've got a great background in this field
2 also. They've been assisting us along the way for the
3 last five or six years.

4 DR. WALLIS: Can I go back to the --

5 MR. LAIN: Sure.

6 DR. WALLIS: You have these pilots and is
7 the purpose to use this NFPA 805, or is it to use
8 risk-informed, performance-based methods because it
9 seems quite possible that these utilities may decide
10 all to take -- to shun the risk-informed stuff and
11 simply find a way around it the way we heard about
12 this morning.

13 MR. LAIN: Well, there would be --

14 DR. WALLIS: That's what an NFPA 805 would
15 let them do. In this case, you wouldn't have learned
16 much about using risk information at all.

17 MR. LAIN: From my point of view, and it
18 makes more sense for them, if they've got issues to
19 deal with, there are screening processes in the NEI
20 04-02 to sort of screen away a lot of the low-risk
21 items.

22 MR. WEERAKKODY: In practice, it cannot
23 happen, mainly because one of the things we would look
24 at during the pilot transition is changes, change
25 evaluations. And every change evaluation requires a

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1 risk assessment. So event though it is a
2 possibility, I don't expect that to happen. And we
3 know Oconee's right now, developing five PRAs or Duke
4 is developing five PRAs for all of their plants.

5 MR. LAIN: So these are some of the
6 outcomes we are expecting to help us improve the
7 inspection procedures in the SRP and lessons learned
8 to help us develop templates for our License Amendment
9 Requests. There are some in NEI 04-02. I think we're
10 going to be able to hone in and also help us with the
11 templates on the Safety Evaluation Reports, on the
12 review parts.

13 We are planning to spend, the pilots are
14 planning to spend not just to when the plants send in
15 their License Amendment Requests, but to -- also, the
16 pilots will encompass the NRC review of those License
17 Amendment Requests. So the pilots will also cover
18 that portion of the NRC's review of the License
19 Amendment Requests.

20 You know, we're planning on have good
21 communications with the Inspection Procedures Working
22 Group with NOR -- RES is still working on products for
23 us, the regions and also industry, NEI and the public.
24 So we're planning on -- I'm sure we'll have some
25 public meetings along the way.

1 And also, if necessary, we're going to,
2 you know, go back and enhance the Reg. Guide and NEI
3 04-02 for any details that we need to refine or we
4 find that we need to update.

5 DR. WALLIS: These outcomes won't occur
6 until '07?

7 MR. LAIN: I'm thinking these outcomes are
8 going to occur along the way.

9 DR. WALLIS: Along the way.

10 MR. LAIN: I think, you know, as we are
11 spending time with the licensee, there will be
12 questions arising and then we'll work on those and try
13 to work them in as soon as possible to any of the
14 Regulatory documentation.

15 DR. WALLIS: So you might be announcing
16 the Reg. Guide before '07?

17 MR. LAIN: I think so. And I think we're
18 also going to be looking at including Research's
19 products into the Reg. Guide also. So I think we'll
20 probably end up with a revision before '07.

21 So, the penguin's off the ice, I guess.
22 Industry's interest. Duke. Duke is -- within their
23 Letter of Intent said that --

24 MR. PARTICIPANT: You're going to be
25 quenched like a fire?

1 MR. LAIN: Oconee is a volunteer. They're
2 actually putting a program plan for their -- Liz is
3 helping them put a program plan together for their
4 transition. And they -- my initial discussions with
5 them is that they're going to basically flag some best
6 parts for observation visits to come out and see.
7 They'll have stuff completed for us to come review and
8 that's going to help us also in putting our plan
9 together.

10 We're talking with Progress Energy this
11 afternoon. Their indications are that they would like
12 Harris to be the second pilot plant. An advantage to
13 them is we've already gone to the CFO and gotten their
14 Fee Waiver for their License Amendment Request. So
15 that'll be a good advantage for them and for them
16 putting in their time for having us come out and
17 working with us to go over and review their process.

18 So this is where we're at today. Our
19 schedule is to try to put the program plan together
20 this summer and start our initial observation visits
21 this fall. Everything else is to be determined.

22 CHAIRMAN ROSEN: Okay. Well, I think
23 that's about all you can do with trying to watch a
24 program that hasn't started yet.

25 MR. LAIN: Yes.

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1 CHAIRMAN ROSEN: Planning on trying to
2 watch a program that hasn't started yet.

3 I thank you all for your participation.
4 I would ask the members if they have any final
5 comments?

6 (NO RESPONSE.)

7 CHAIRMAN ROSEN: If not, seeing none, we
8 are adjourned.

9 (Whereupon, at 12:32 p.m., the meeting was
10 adjourned.)

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CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on
Reactor Safeguards
Subcommittee Meeting
On Fire Protection

Docket Number: n/a

Location: Rockville, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.



Eric Mollen
Official Reporter
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ATTACHMENT

**U.S. NUCLEAR REGULATORY COMMISSION
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July 2005
Division 1

REGULATORY GUIDE

Contact: Paul W. Lain (301) 415-2346
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REGULATORY GUIDE X.XXX

RISK-INFORMED, PERFORMANCE-BASED FIRE PROTECTION FOR EXISTING LIGHT-WATER NUCLEAR POWER PLANTS

A. INTRODUCTION

This regulatory guide provides guidance for use in complying with the requirements that the U.S. Nuclear Regulatory Commission (NRC) has promulgated for risk-informed, performance-based fire protection programs that meet the requirements of Title 10, Section 50.48(c), of the *Code of Federal Regulations* (10 CFR 50.48(c)) and the referenced 2001 Edition of the National Fire Protection Association (NFPA) standard, NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Stations."

In accordance with 10 CFR 50.48(a), each operating nuclear power plant must have a fire protection plan that satisfies General Design Criterion (GDC) 3, "Fire Protection," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." In addition, before the adoption of 10 CFR 50.48(c), plants that were licensed to operate before January 1, 1979, needed to meet the requirements of 10 CFR Part 50 Appendix R, "Fire Protection Program for Nuclear Power Facilities Operation Prior to January 1, 1979," as stated in 10 CFR 50.48(b). Plants licensed to operate after January 1, 1979, were required to comply with 10 CFR 50.48(a), as well as any plant-specific fire protection license condition and technical specifications.

Section 50.48(c) incorporates NFPA 805 by reference, with certain exceptions, and allows licensees to voluntarily adopt and maintain a fire protection program that meets the requirements of NFPA 805 as an alternative to meeting the requirements of 10 CFR 50.48(b) or the plant-specific fire

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This guide was issued after consideration of comments received from the public. The NRC staff encourages and welcomes comments and suggestions in connection with improvements to published regulatory guides, as well as items for inclusion in regulatory guides that are currently being developed. The NRC staff will revise existing guides, as appropriate, to accommodate comments and to reflect new information or experience. Written comments may be submitted to the Rules and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

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protection license conditions. Licensees who choose to comply with NFPA 805 must submit an application for license amendment to the NRC, in accordance with 10 CFR 50.90. Section 50.48(c)(3) describes the required content of the application.

The Nuclear Energy Institute (NEI) developed NEI 04-02, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)," Revision 0, dated May 2005, to assist licensees in adopting NFPA 805 and making the transition from their current fire protection program (FPP) to one based on NFPA 805. This regulatory guide endorses NEI 04-02, Revision 0, because it provides methods acceptable to the NRC for implementing NFPA 805 and complying with 10 CFR 50.48(c), subject to the additional positions contained in Section C of this regulatory guide and the approval authority NFPA 805 grants to the authority having jurisdiction (AHJ). The regulatory positions in Section C include clarification of the guidance provided in NEI 04-02 as well as any NRC exceptions to the guidance. The regulatory positions in Section C take precedence over the NEI 04-02 guidance. All references to NEI 04-02 in this regulatory guide refer to Revision 0 of the NEI guidance document. All references to NFPA 805 in this regulatory guide refer to the 2001 Edition of NFPA 805. The NRC is the AHJ for nuclear power plant FPPs.

The information collections contained in this regulatory guide are covered by the requirements of 10 CFR Part 50, which were approved by the Office of Management and Budget (OMB) approval number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

B. DISCUSSION

Background

The *Code of Federal Regulations*, Title 10, Section 50.48(a), requires that all operating nuclear power plants implement an FPP that satisfies GDC 3 of Appendix A to 10 CFR Part 50. In addition to the requirements of 10 CFR 50.48(a), plants licensed to operate before January 1, 1979, must meet the requirements of Appendix R to 10 CFR Part 50, to the extent described in 10 CFR 50.48(b). Nuclear power plants that were licensed to operate after January 1, 1979, must comply with 10 CFR 50.48(a), as well as any plant-specific fire protection license conditions and technical specifications. Fire protection license conditions typically reference NRC safety evaluation reports (SERs), which are the products of the staff's initial licensing reviews against either (1) Appendix A to Branch Technical Position (BTP) Auxiliary Power Conversion Systems Branch (APCSB) 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," and the criteria of certain sections of Appendix R to 10 CFR Part 50; or (2) Section 9.5.1, "Fire Protection Programs," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP). The SRP closely follows the structure and requirements of Appendix R to 10 CFR Part 50.

The fire protection requirements of GDC 3, Appendix R, and the guidance provided in the BTP and the SRP are considered deterministic. The industry and some members of the public have described these requirements as prescriptive and creating unnecessary regulatory burden. The

NRC has issued approximately 900 plant-specific exemptions to the requirements of Appendix R, and approved numerous deviations from the licensing requirements for post-1979 plants.

In SECY-98-058, "Development of a Risk-Informed, Performance-Based Regulation for Fire Protection at Nuclear Power Plants," dated March 26, 1998, the staff proposed to the Commission that the staff work with the NFPA and industry to develop a risk-informed, performance-based consensus fire protection standard for nuclear power plants. This consensus standard could be endorsed in future rulemaking as an alternative set of fire protection requirements. In SECY-00-0009, "Rulemaking Plan, Reactor Fire Protection Risk-Informed, Performance-Based Rulemaking," dated January 13, 2000, the NRC staff requested and received Commission approval for proceeding with a rulemaking to permit reactor licensees to adopt NFPA 805 as a voluntary alternative to existing fire protection requirements. On February 9, 2001, the NFPA Standards Council approved the 2001 Edition of NFPA 805 as an American National Standard for performance-based fire protection for light-water nuclear power plants.

Effective July 16, 2004, the Commission amended its fire protection requirements in 10 CFR 50.48 to add 10 CFR 50.48(c), which incorporates the 2001 edition of NFPA 805 by reference, with certain exceptions, and allows licensees to apply for a license amendment to comply with NFPA 805. [See Volume 69, page 33536 of the *Federal Register* (69 FR 33536)]. The NRC cannot adopt future editions of NFPA 805 without rulemaking. However, licensees may request to use specific risk-informed or performance-based alternatives included in future additions of NFPA 805 by submitting a license amendment, in accordance with 10 CFR 50.48(c)(4).

In parallel with the Commission's efforts to promulgate a rule endorsing risk-informed, performance-based fire protection provisions of NFPA 805 and to follow the provisions of the Federal Advisory Committee Act which are designed to encourage the public and industry to have more meaningful involvement in the regulatory process, NEI worked with industry and the staff to develop implementing guidance for the specific provisions of NFPA 805 and the rule. The NEI published such guidance in NEI 04-02, Revision 0, in May 2005. This regulatory guide provides the NRC's position on NEI 04-02 and offers additional information and guidance to supplement the NEI document and assist the licensees in meeting the Commission's requirements.

Fire Protection Program Transition

The staff endorses a "safe-today, safe-tomorrow" approach consistent with NFPA 805 for plants that transition to a risk-informed, performance-based FPP in accordance with 10 CFR 50.48(c). With this approach a licensee is not required to re-assess the acceptability of license amendments, exemptions or deviations that have been previously approved by the NRC for the plant. However, a minimal review should be performed by the licensee to ensure that the conditions described in the original exemption or amendment request are still relevant and representative of the current plant operations and configuration. The overall objective of this approach is to enable licensees to transition to a risk-informed, performance-based FPP without undue burden, while maintaining or enhancing plant safety and providing a clear licensing basis.

To enhance plant safety, licensees are encouraged to disposition any noncompliances identified by the licensee during the transition process using risk insights. To accommodate

licensees during the transition period, the NRC will grant enforcement discretion for issues identified by the licensee during the transition in accordance with an enforcement discretion policy approved by the Commission.

As discussed in the background information above, licensees must submit an application for license amendment to change their fire protection licensing basis to adopt 10 CFR 50.48(c). As stated in 10 CFR 50.48(c)(3)(ii), the licensee must implement the methodology in Chapter 2 of NFPA 805 and modify the FPP required by 10 CFR 50.48(a) to reflect compliance with NFPA 805 before changing its current program or modifying the plant. The modified FPP should not be implemented until the licensee receives the approved SER for the license amendment request.

The NFPA 805 standard is structured to allow licensees to transition most of their existing program. Modification may be necessary to address new elements of NFPA 805 that are not addressed by current regulations. Licensees need to address the basic elements of NFPA 805 as they transition their FPPs. These elements include (1) the nuclear safety performance criteria for all modes of operation, (2) the radioactive material release performance criteria, (3) compliance with the fundamental FPP and design elements, and (4) the specific documentation, quality, and configuration management provisions of the NFPA standard. The NEI implementation guide, NEI 04-02, and the positions contained in this regulatory guide provide guidance to assist the licensee in this transition.

Certain aspects of the plant's FPP may not have been specifically approved by the NRC, e.g., through a Safety Evaluation Report or approved 10 CFR 50.12 exemption request. This has resulted in uncertainty in licensees' fire protection licensing basis. Licensees may elect to submit elements of the plant FPP which are uncertain in order to obtain explicit approval of these elements under 10 CFR 50.48(c). Operator manual actions and circuit analysis methods are two examples. NEI 04-02 provides guidance on elements of the FPP that licensees may want to address in the license amendment request. The submittals addressing these FPP elements should include sufficient detail to allow the NRC to adequately assess whether the licensee's treatment of these elements of the FPP meets 10 CFR 50.48(c) requirements.

Transition to an NFPA 805 based FPP does not require licensees to use a fire probabilistic risk assessment (PRA) model. However, without a fire PRA licensees may not realize the full safety and cost benefits of transitioning to NFPA 805.

10 CFR 50.48(c) does not mandate a specific schedule for implementing an FPP which meets the provisions of NFPA 805. However, licensees who wish to take advantage of the Commission's interim enforcement discretion policy for fire protection will need to establish an implementation schedule consistent with the enforcement policy.

Interim Enforcement Discretion Policy

The Commission approved and published the interim enforcement discretion policy in the *Federal Register* on June 16, 2004 (see 69 FR 33684). In January 2005, the Commission revised this policy to extend the due date for the letter of intent until December 31, 2005 (see 70 FR 2662). Additional information on NRC enforcement policies can be found at <http://www.nrc.gov/what-we-do/regulatory/enforcement/enforce-pol.html>.

In summary, the enforcement discretion begins upon receipt of a letter of intent from the licensee stating its intention to adopt NFPA 805. The enforcement discretion period would be in effect for up to 2 years. If the licensee submits a license amendment request, the enforcement discretion would continue until the NRC completes approval of the amendment request, which could potentially extend beyond the 2-year period. In addition, for licensees that submit a letter of intent prior to December 31, 2005, enforcement discretion would be applied to cover corrective action implementation for existing and identified noncompliances, until the licensee completes its transition to 10 CFR 50.48(c).

For those plants that submit a letter of intent, but subsequently decide not to complete the transition to 10 CFR 50.48(c), the enforcement policy requires the licensee to inform the NRC of this decision and withdraw its letter of intent. Any violations that are identified and corrected before the date of the withdrawal letter would be unaffected by the withdrawal. The staff will consider the continuation of enforcement discretion for violations that are identified before the withdrawal on a case-by-case basis to ensure that timely corrective actions are taken commensurate with the safety significance of the issue. Any violations occurring after withdrawal of the letter of intent would be dispositioned in accordance with normal enforcement practices. Section 3 of NEI 04-02 provide additional details of the application of the enforcement discretion policy.

Fire Protection Program Changes

Prior to the promulgation of 10 CFR 50.48(c), plants typically have adopted a standard fire protection license condition. Under this condition, the licensee can only make changes to the approved FPP, without prior Commission approval, if the changes would not adversely affect the plant's ability to achieve and maintain safe shutdown in the event of a fire. This license condition would be changed for plants that adopt NFPA 805. The NFPA 805 standard contains specific requirements for evaluating changes to the program. See Regulatory Position 2.1 in Section C of this regulatory guide for an acceptable fire protection license condition for plants adopting NFPA 805.

Appendices to NFPA 805

As discussed in the Statements of Consideration for the proposed rulemaking (see 67 FR 66578), and restated in the comment resolution for the final rulemaking that amended 10 CFR 50.48 to incorporate NFPA 805 by reference (see 69 FR 33536), the appendices to NFPA 805 are not considered part of the rule. However, Appendices A, B, C, and D provide useful information for implementing the requirements of NFPA 805. The staff finds the specific guidance contained within the appendices to be acceptable to the extent that this guidance is specifically endorsed within the positions contained in Section C of this regulatory guide.

C. REGULATORY POSITIONS

1. NEI 04-02

The guidance in NEI 04-02, Revision 0, provides methods acceptable to the staff for adopting an FPP consistent with the 2001 edition of NFPA 805, subject to the regulatory positions contained herein.

The NRC's endorsement of NEI 04-02 excludes Section 6.0, Implementing Guidance for Use of Tools and Processes Within Existing Licensing Basis, which provides guidance for using the risk-informed methods without adopting NFPA 805. The purpose of NEI 04-02 and this regulatory guide is to provide guidance for implementing an FPP that complies with 10 CFR 50.48(c). Neither the regulatory requirements of 10 CFR 50.48(c) nor NFPA 805 include provisions to use the methods and approaches of NFPA 805 within an existing fire protection licensing basis.

Conversely, there are also no regulatory prohibitions or limitations on analytical methods used in developing the safety case for license amendments or exemptions, as long as they are technically valid, justified, and defensible as demonstrating adequate protection of the public. In making changes to the existing FPP, the licensee shall follow the change process allowed under the standard fire protection license condition and should provide the necessary technical basis to support the change, regardless of the methods employed. In addition, the NRC's endorsement of NEI 04-02 does not imply its endorsement of the references cited in NEI 04-02.

2. Transition Process

2.1 Standard License Condition

Section 4.6.1 of NEI 04-02 provides acceptable guidance for submitting license amendment requests to allow the adoption of NFPA 805. As specified in 10 CFR 50.48(c)(3)(i), the license change amendment request must identify any license conditions to be revised or superseded. The following license condition is an acceptable fire protection license condition for plants adopting NFPA 805:

(Name of Licensee) shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c) as specified in the licensee amendment request dated _____ and as approved in the safety evaluation report dated _____ (and supplements dated _____). Except where NRC (AHJ) approval for changes or deviations is required by 10 CFR 50.48(c) and NFPA 805, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes are evaluated and determined to be acceptable as provided for in NFPA 805, 2001 Edition.

2.2 Existing Engineering Equivalency Evaluations

NFPA 805, Section 2.2.7 describes the application of Existing Engineering Equivalency Evaluations (EEEE's) when using a deterministic approach during the transition to an NFPA 805

FPP. One type of EEEE, commonly referred to as a "Generic Letter 86-10 (GL 86-10) evaluation," allows licensees who have adopted the standard fire protection license condition (under their current FPP and in accordance with GL 86-10) to make changes to the approved FPP without prior NRC approval if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. With the exception of evaluations of certain recovery actions and any deviations from NFPA 805 requirements, a GL 86-10 evaluation showing no adverse affect on safe shutdown and permitted under the licensee's current licensing basis is one acceptable means of meeting the NFPA 805 EEEE acceptance criteria of "an equivalent level of fire protection compared to the deterministic requirements."

Recovery actions credited for protection of redundant trains in Appendix R, III.G.2 areas do not meet the deterministic requirements of Chapter 4 of NFPA 805. Consequently, these recovery actions that have not been specifically approved by the NRC should be addressed as a plant change in accordance with Section 2.4.4 of NFPA 805.

NEI 04-02, Section 4.1.1, Transition Process Overview, notes that the licensee will review EEEE's during the transition process to ensure the quality level and the basis for acceptability are still valid. Except as noted above, satisfactory results from this review will provide adequate basis to transition EEEE's for the deterministic requirements of Chapter 4 of NFPA 805. Guidance for performing EEEE's is provided in NUREG-0800, Section 9.5.1, Fire Protection, and in Regulatory Guide 1.189, Fire Protection for Operating Nuclear Power Plants.

EEEE's which support deviations from the requirements and methods of NFPA 805 must be submitted for NRC approval in accordance with 10 CFR 50.48(c) and NFPA 805. Specific guidance for submittal requirements are also provided in Regulatory Position 3.1.4. Of the EEEE's that must be approved by the NRC, those that are pre-existing and those performed during the transition to an NFPA 805 licensing basis should be submitted with the fire protection license amendment request.

2.3 Documentation of Previous NRC Approval

Aspects of the licensee's FPP that have not been specifically reviewed and approved by the NRC are subject to review through the ROP process. The documentation which demonstrates NRC approval of a change includes safety evaluation reports and exemption or deviation request approvals. Inspection reports, meeting minutes and letters from licensees without a corresponding approval response in writing from the NRC are examples of documents that do not represent NRC approval for this purpose. Documents listed in Section 2.3.1 of NEI 04-02 which are not addressed by the guidance in this regulatory position do not necessarily represent NRC approval and must be evaluated by the NRC on a case-by-case basis.

3. NFPA 805 Fire Protection Program

3.1 NFPA 805 Fire Protection Program Change Evaluation Process

Prior to implementing a change to the FPP or a change to a plant feature that could impact the FPP, the licensee should evaluate the change to determine whether it is acceptable. Existing 10 CFR 50.48(c) noncompliances identified after the transition to an NFPA 805 FPP, should also be evaluated for acceptability in accordance with the plant change evaluation process. In

accordance with Section 2.4.4, Plant Change Evaluation, of NFPA 805, plant changes should be evaluated using an integrated assessment of the acceptability of risk, defense-in-depth, and safety margins, regardless of the methods or approaches used to evaluate the change.

Section 5.3 of NEI 04-02 addresses the evaluation of changes to a licensee's FPP. In addition to addressing change process considerations, Section 5.3 of NEI 04-02, describes methods and tools for evaluating changes to the FPP. Regulatory Position 4 describes the NRC staff positions related to these methods and tools. The following regulatory positions are also applicable to the process of evaluating and implementing changes to the FPP following completion of the transition to an NFPA 805 license condition.

3.1.1 Change Screening

A licensee may use an appropriate screening process to screen out changes that do not require additional evaluations for FPP impacts and acceptability. An appropriate screening process may include the following types of changes that do not need to be further evaluated prior to implementation:

- plant changes that have been determined not to impact the FPP
- changes to elements of the FPP that have been determined to be clearly equivalent to existing elements of the FPP (e.g., functionally identical or superior replacements of fire protection equipment described in the FPP)
- changes to the FPP that are clearly insignificant with respect to meeting nuclear safety and radioactive release performance criteria (e.g., descriptive or editorial changes to the FPP documentation)

10 CFR 50.59(a)(1) and Appendices I and J of NEI 04-02 provide additional guidance and change screening criteria that are acceptable to the NRC.

3.1.2 Fire Protection Program Change Evaluations

For changes that have not been screened, the licensee should perform an engineering evaluation to demonstrate the acceptability of the change in terms of the plant change evaluation criteria and compliance with the fire protection requirements of 10 CFR 50.48(a) and NFPA 805, as endorsed in 10 CFR 50.48(c). NEI 04-02 provides useful information for evaluating changes in the context of NFPA 805 plant change evaluation criteria.

The risk evaluation should use the methods and tools described in Regulatory Position 4.3, as appropriate. NEI 04-02 contains a detailed discussion useful in evaluating changes in risk when using quantitative risk assessment methods and tools. The evaluation shall also demonstrate that adequate defense-in-depth and safety margin will be maintained. NEI 04-02 also provides useful information regarding the assessment of DID and identifies acceptable industry guidelines that are consistent with the approach to assessing DID as described in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decision on Plant-Specific Changes to the Licensing Basis" (RG 1.174).

As applicable to the FPP change being evaluated, the evaluation should address the following items:

- (a) For changes that impact the protection of plant structures, systems, and components necessary to meet performance criteria in the event of a fire, the evaluation should

demonstrate that nuclear safety and radiological release performance criteria will continue to be met considering all relevant plant modes and configurations using, as appropriate for the change being evaluated, the approaches provided in NFPA 805.

The licensee shall demonstrate reasonable assurance that at least one success path necessary to achieve and maintain nuclear safety performance criteria remains free from fire damage, as defined in NFPA 805, Section 1.6.29, considering the effects of the fire and fire suppression activities.

When using fire modeling (see NFPA 805, Section 4.2.4.1) to demonstrate that at least one success path remains free from fire damage, the evaluation shall demonstrate that the margin between the maximum expected fire scenario and the limiting fire scenario is sufficiently large to bound any uncertainties in the fire model engineering analysis. Section 2.4.7 of Appendix D to NEI 04-02 contains a detailed discussion that is useful in evaluating the margin between the maximum expected fire scenario and the limiting fire scenario.

- (b) For changes to the FPP that involve fundamental program and design elements, the evaluation should address how the change affects compliance with the requirements of NFPA 805, Chapter 3.

3.1.3 *Monitoring Fire Protection Program Changes*

Section 2.6 of NFPA 805 provides the regulatory requirements for monitoring the FPP and Section 5.2 of NEI 04-02 provides guidance with respect to monitoring. The licensee's monitoring program should include evaluation of FPP changes with respect to their impact on the monitoring program. This evaluation should address any changes to the monitoring program that are necessary to ensure that the assumptions made in the engineering evaluations for FPP changes are maintained and remain valid.

3.1.4 *Approval of Fire Protection Program Changes*

Changes to the FPP that have been screened, as described in Regulatory Position 3.1.1, or evaluated and determined to be acceptable, as described in Regulatory Position 3.1.2, may be self-approved and implemented without submittal to the NRC. The following FPP changes must be submitted for NRC approval:

- (a) Changes that are alternatives from the fundamental FPP attributes required by NFPA 805, Chapter 3 and that have not been previously approved by the NRC.

NFPA Chapter 3 requires compliance with applicable NFPA fire codes. The edition of each NFPA standard that is the licensee's code of record will determine whether deviations from these referenced NFPA standards must be submitted for AHJ approval (some code editions allow "alternate arrangements" without AHJ approval).

Some NFPA codes required by Chapter 3 did not exist when plants were originally licensed. Licensees' amendment requests to transition to NFPA 805 should describe their level of compliance with NFPA fire codes that have not been committed to in the current FPP. The description should be in sufficient detail to permit an adequate evaluation. These commitments will become part of the FPP and, consequently, future

changes/deviations may require submittal to the NRC for approval as determined by the license condition and the specific NFPA standard.

- (b) Changes that do not meet the risk acceptance criteria described in Regulatory Position 3.1.2(a).
- (c) Changes that have been evaluated using performance-based methods other than those described in Regulatory Position 4.
- (d) Changes that have been evaluated using performance-based methods other than the approaches in NFPA 805 (i.e., fire modeling and fire risk evaluation).
- (e) Changes that involve, or require conforming changes to, a license condition or the plant's technical specifications.

Following completion of the licensee's change evaluation, the licensee shall submit the request for approval of the change(s) to the NRC pursuant to 10 CFR 50.48(c) and 10 CFR 50.90 or 10 CFR 50.12, using the licensee's license amendment or exemption request process, as appropriate. The licensee may implement these changes to the FPP following NRC issuance of the license amendment in accordance with 10 CFR 50.90, or granting of an exemption request in accordance with 10 CFR 50.12.

3.1.5 Documentation of Changes

The licensee should document descriptions of changes made to the FPP, reasons for the changes, and engineering evaluations related to the changes and retain them until termination of the license. The licensee should organize its change documentation so that changes can be readily identified and the associated documentation retrieved for inspection by the NRC.

Documentation should (1) clearly describe the assumptions, identify the methods, and present the results of the evaluation in a manner that is easily understood and in sufficient detail to allow future review of the entire analyses, and (2) conform to the quality requirements of NFPA 805, Section 2.7.3.

3.2 Circuit Analysis

Industry guidance document NEI 00-01, Revision 1, "Guidance for Post-Fire Safe Shutdown Circuit Analysis," used in conjunction with NFPA 805 (including Appendix B) and this regulatory guide, provides one acceptable approach to circuit analysis. Where the deterministic requirements of NFPA 805 Chapter 4 for the protection of required circuits cannot be met, circuit analysis assumptions regarding the number of spurious actuations, the manner in which they occur (e.g., one-at-a-time or simultaneous) and the time between spurious actuations should be supported by performance-based evaluations.

The nuclear safety circuit analysis should address possible equipment damage and the inability to restore equipment operability caused by spurious actuation, including the types of failures described in NRC Information Notice (IN) 92-18, "Potential for Loss of Remote Shutdown Capability During a Control Room Fire," dated February 1992 and Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," dated November 1975.

The risk evaluation of circuit analysis changes performed post-transition should use the criteria in RG 1.174. However, applying this criteria on a circuit-by-circuit basis or even an area-by-area basis may not adequately consider the cumulative effects. Therefore, in order to maintain reasonable assurance that cumulative effects of individual changes do not exceed the high-level acceptance criteria established in RG 1.174, a licensee may (1) consider all circuit analysis changes during the transition and post-transition as a single change, (2) perform plant or procedure changes that make the change risk neutral or decreases risk, or (3) apply an AHJ approved threshold for individual changes.

3.3 Relationship with Other Rules, Regulatory Guidance, Standards, and Programs

Licensees transitioning to NFPA 805 must be cognizant of the applicability of a large number of other NRC rules, regulatory guidance, industry and NRC standards, and programs applicable to NFPA 805. Section 1.3 of NEI 04-02 provides applicable guidance.

4. NFPA 805 Analytical Methods and Tools

4.1 General

Engineering analyses and associated methods that the licensee applies to demonstrate compliance with the nuclear safety and radioactive release performance criteria should have the requisite degree of technical and defensible justification, as dictated by the scope and complexity of the specific application. Persons qualified in the specific analytical methods should perform these analyses which should include any necessary verification and validation of methods used in the specific applications.

4.2 Fire Models

Section 1.6.18 of NFPA 805 defines a fire model as the "Mathematical prediction of fire growth, environmental conditions, and potential effects on structures, systems, or components based on the conservation equations or empirical data." Section 2.4.1.2 of NFPA 805 requires that only fire models acceptable to the AHJ (NRC) be used in fire modeling calculations. Further, NFPA 805, Sections 2.4.1.2.2 and 2.4.1.2.3, state that the fire models shall be applied within their limitations and be verified and validated.

To the extent that the NRC finds certain fire models and calculational methods acceptable for use in performance-based analyses, licensees should justify that the fire models and methods are used within their limitations and with the rigor required by the nature and scope of the change analysis. These analyses may use simple hand calculations or more complex computer models, depending on the specific conditions of the scenario being evaluated. Appendix C to NFPA 805 and Appendix D to NEI 04-02 contain detailed discussions that are useful in determining what fire models to use and applying those fire models within their limitations.

The NRC's Office of Nuclear Regulatory Research (RES) and the Electric Power Research Institute (EPRI) are currently developing verification and validation (V&V) documents for specific fire models. The specific fire models documented are (1) NUREG-1805, "Fire Dynamics Tools (FDT[®])," (2) Fire-Induced Vulnerability Evaluation (FIVE), Revision 1, (3) the National Institute of Standards and Technology (NIST) Consolidated Model of Fire Growth and Smoke Transport (CFAST), (4) the Electricité de France (EdF) MAGIC code, and (5) the NIST Fire Dynamics Simulator (FDS).

Licensees may propose the use of fire models that have not been specifically verified and validated by the NRC; however, licensees are responsible for providing verification and validation of these fire models. These V&V documents are subject to NRC review and approval, in accordance with 10 CFR 50.48(c)(4).

4.3 Fire Probabilistic Safety Assessment/Risk Analysis

Section 2.4.3.3 of NFPA 805 requires that the PSA approach, methods, and data be acceptable to the AHJ. This section of NFPA 805 also provides the high level regulatory requirements with respect to the acceptability of the approaches, methods and data used for the PSA approach. Additional guidance for the PSA approach is provided by NEI 04-02, including Sections 5.1.3, 5.3 and J.4.2.

Methods previously reviewed by the NRC for the fire PSA should continue to be acceptable when used within the appropriate bounds and limitations of the particular method. To the extent that the NRC finds certain PSA methods acceptable for use in meeting NFPA 805 requirements, licensees should justify the methods that are appropriate for the specific applications. These analyses may use screening methods or more complex quantitative PSA methods, depending on the specific conditions of the scenario being evaluated. Appendix D to NFPA 805 provides useful information for implementing the requirements of NFPA 805; specific guidance contained within this appendix is acceptable to the staff for the use and application of PSA, when applied in accordance with the positions presented in Section C of this regulatory guide.

When licensees choose to rely on information in an internal events-based PSA/PRA model to quantify risk associated with fires, they should review the analysis to ensure that the model addresses applicable NFPA 805 requirements, including the engineering analysis requirements of NFPA 805, Section 2.4.2. Section D.3.4 of Appendix D to NFPA 805 provides useful guidance regarding fire-specific issues that should be addressed when applying internal events-based analyses to the assessment of risk from fires. Based on the review, the licensee should modify its internal events-based PSA/PRA model, as necessary, to meet applicable NFPA 805 requirements. The conditional core damage probability demonstrated by a plant's individual plant examination of external events (IPEEE), or the internal events PRA model supporting the plant's IPEEE, may be conservative since, in some cases, credit may not be taken for potential safe shutdown/core damage avoidance paths beyond Appendix R.

Where licensees choose to rely on past fire protection PSA (e.g., IPEEE for fires), the licensees should review these past analyses to determine their continued applicability and adequacy (e.g., inputs, assumptions, data) in meeting the NFPA 805 requirements. Licensees may reconsider scenarios previously screened from analysis, if changes associated with NFPA 805 implementation or compliance alter the scope of the original analysis or the screening conclusions. Some detailed fire PRA's implicitly model failure of fire detectors and manual/automatic suppression per fire area and scenario when assigning the fire initiation frequency to that particular scenario. If so, any "modification factor," typically called a "severity factor" and employed to compensate for the fire initiation frequency not implicitly accounting for detection or suppression, should not include considerations of these to avoid any non-conservative double-counting.

RES and the EPRI are currently developing fire PRA methods, tools, and data to support risk assessments. This work is currently documented in draft NUREG/CR-6850 and EPRI 1008239, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities," and is undergoing public review and appropriate revision. The revised version of this document will provide an acceptable basis to perform fire risk analyses, subject to final review, if needed, and approval by the NRC's Office of Nuclear Reactor Regulation. The NRC plans to revise this regulatory guide in the future to endorse specific risk assessment methods for use in implementing NFPA 805.

D. IMPLEMENTATION

The purpose of this section is to provide information to licensees regarding the NRC's plans for using this regulatory guide.

Except in those cases in which a licensee proposes or has previously established an acceptable alternative method for complying with specified portions of the NRC's regulations, the NRC staff will use the methods described in this guide to evaluate licensee compliance with the requirements of 10 CFR 50.48(c).

Regulatory Analysis

The NRC staff did not prepare a separate regulatory analysis for this regulatory guide. The regulatory basis for this guide is the regulatory analysis prepared for the amendments to 10 CFR Part 50, "Voluntary Fire Protection Requirements for Light-Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative," issued on June 16, 2004 (see 69 FR 33536), which examines the costs and benefits of the rule as implemented by this guide. A copy of this regulatory analysis is available for inspection and may be copied for a fee at the NRC's Public Document Room located at One White Flint North, 11555 Rockville Pike, Room O1-F15, Rockville, Maryland.

Backfit Analysis

As stated in the backfit analysis for the rulemaking (see 69 FR 33536), the rulemaking does not involve a backfit because it does not impose new regulatory requirements. Further, the adoption of NFPA 805 by a licensee is voluntary. Similar to the rule, this regulatory guide does not involve a backfit because it does not impose requirements on the licensees.

REFERENCES

BTP APCS 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants," Branch Technical Position, Auxiliary Power Conversion Systems Branch, U.S. Nuclear Regulatory Commission, May 1, 1976.

GL 86-10, "Implementation of Fire Protection Requirements," Generic Letter, U.S. Nuclear Regulatory Commission, April 24, 1986.

IN 92-18, "Potential for Loss of Remote Shutdown Capability During a Control Room Fire," Information Notice, U.S. Nuclear Regulatory Commission, February 1992.

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NEI 04-02, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)," Revision 0, Nuclear Energy Institute, May 2005.

NFPA 805, "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Stations," 2001 Edition, National Fire Protection Association, Quincy, MA.

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NUREG-1805, "Fire Dynamics Tools (FDT^s) Quantitative Fire Hazard Analysis Methods for the U.S. Nuclear Regulatory Commission Fire Protection Inspection Program," Draft Report for Comment, Volumes 1 and 2, June 2003.

Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor-Operated Valves," November 1975.

Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decision on Plant-Specific Changes to the Licensing Basis," Revision 1, November 2002.

Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants," April 2001.

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SECY-98-058, "Development of a Risk-Informed, Performance-Based Regulation for Fire Protection at Nuclear Power Plants," March 26, 1998.

SECY-00-0009, "Rulemaking Plan, Reactor Fire Protection Risk-Informed, Performance-Based Rulemaking," January 15, 2000.

SECY-02-132, "Proposed Rule: Revision of 10 CFR 50.48 to Permit Light-Water Reactors to Voluntarily Adopt National Fire Protection Association (NFPA) Standard 805, 'Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants,' 2001 Edition (NFPA 805), as an Alternative Set of Risk-Informed, Performance-Based Fire Protection Requirements," July 15, 2002.

SECY-04-0050, "Final Rule: Revision of 10 CFR 50.48 to Allow Performance-Based Approaches Using National Fire Protection Association (NFPA) Standard 805 (NFPA 805), 'Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants,' 2001 Edition," March 29, 2004.

U.S. Code of Federal Regulations, Title 10, *Energy*, Part 50, "Domestic Licensing of Production and Utilization Facilities."

U.S. Code of Federal Regulations, Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10, Part 50, of the *U.S. Code of Federal Regulations*.

U.S. Code of Federal Regulations, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operation Prior to January 1, 1979," to Title 10, Part 50, of the *U.S. Code of Federal Regulations*.

U.S. Code of Federal Regulations, Title 10, Section 50.48, "Fire Protection."

U.S. Nuclear Regulatory Commission, "Voluntary Fire Protection Requirements for Light-Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative," Proposed Rule, *Federal Register*, Vol. 67, No. 212, November 1, 2002, pp. 66578–66588.

U.S. Nuclear Regulatory Commission, "Voluntary Fire Protection Requirement for Light-Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative," Final Rule, *Federal Register*, Vol. 69, No. 115, June 16, 2004, pp. 33536–33551.

U.S. Nuclear Regulatory Commission, "NRC Enforcement Policy," Policy Statement: Revision, *Federal Register*, Vol. 69, No. 115, June 16, 2004, pp. 33684–33685.

U.S. Nuclear Regulatory Commission, "NRC Enforcement Policy; Extension of Enforcement Discretion of Interim Policy," Policy Statement: Revision, *Federal Register*, Vol. 70, No. 10, January 14, 2005, pp. 2662-2664.

GLOSSARY

NFPA 805, Section 1.6, contains definitions applicable to terminology used in the standard. Regulatory Guide 1.189 also contains a substantial list of definitions of fire protection terminology applicable to nuclear power generating stations. Where potential differences or conflicts exist between definitions in NFPA 805 and other fire protection regulatory documents, and where these definitions are important to the licensing basis, the licensee's documentation should clearly identify the definition that is being applied.

NFPA 805 POST TRANSITION INSPECTION PROCEDURES

**ACRS Fire Protection Subcommittee
May 17, 2005**

**Sunil D. Weerakkody
NRR/DSSA/SPLB**

**Richard A. Dipert P.E.
NRR/DSSA/SPLB**

Briefing Outline

- **Objective**
- **Inspection Procedure Development Phase**
- **Inspection Procedure Format**
- **Milestones**
- **Summary of Approach**

Objective

- Inform ACRS of Plans to Develop Post-Transition Inspection Procedures

Inspection Procedure Development Phase

- Prepare proposed Risk-informed, Performance-Based Fire Protection inspection procedures (parallel to existing Inspection Procedures 71111.05T and 71111.05AQ) using the information from the following references:

NFPA 805 and the NFPA 805 fire protection rule language

NRC Draft Regulatory Guide DG-1139

NEI Implementation Guide NEI 04-02 (as endorsed by DG-1139)

Inspection Procedures 71111.05T and 71111.05AQ

- Prepare training materials on inspection procedures

Inspection Procedure Format

- Decided to Propose New Inspection Procedures for "Triennial Fire Protection Audit for Plants Adopting NFPA 805" and "Quarterly and Annual Audit Procedures for Plants Adopting NFPA 805"
- Recognized differences in compliance strategies from Appendix R/Standard Review Plan (SRP) plants
- Formatted to be parallel to existing Inspection Procedures 71111.05T and 71111.05AQ
- Allows incorporation of Lessons Learned without disrupting the inspection procedures used for non-805 plants.

Milestones

- Formalize NFPA 805 Inspection Procedure Working Group - **Completed April 2005**
- Working Group has PRA expertise, Fire Protection Expertise, Inspections Branch representative, and Regional Inspectors with Expertise in Fire Protection.
- Charter for the working group includes:
 - Serve as source of knowledge on inspection procedures
 - Review and comment on SPLB Draft and Final Input to IIPB for New Inspection Procedures “Triennial Fire Protection Audit for Plants Adopting NFPA 805” and “Quarterly and Annual Audit Procedures for Plants Adopting NFPA 805”
 - Review and Comment on Training Materials

Milestones (Cont.)

- Contractor Selected
 - **Funding in place and work begun April 2005**
- Fire Protection Section is using Pacific Northwest National Laboratory
- Previous Experience
 - Produced draft Regulatory Guide DG-1139, Regulatory Guide 1.189
 - Updated Standard Review Plan 9.5.1
 - Assisted with NFPA 805 Rulemaking

Milestones (Cont.)

- Fire Protection Section Transmits Working Draft Input of Triennial Procedure to Working Group by June 2005
- Fire Protection Section Transmits Draft Input to Inspections Branch for Regional Review by August 2005
- Fire Protection Section Participates in NEI Fire Protection Information Forum and makes Input available to Public by August 2005 and request comments
- Hold Meeting to Resolve Stakeholder Comments by October 2005
- Fire Protection Section Transmits Final Input to Inspections Branch for Review & Implementation (2008)

Milestones – (Cont.)

- Draft Training Materials Delivered
 - Anticipated December 2005
- Final Training Materials Delivered
 - To Be Determined, anticipated after one or more observational visits to pilot plants
- Training sessions
 - To Be Determined, anticipated after one or more observational visits to pilot plants
- Pilot Plant Observation Visit Lessons Learned
 - Incorporated into future revisions of Inspection Procedures

Summary of Approach

- FP Section is on its way to develop inspection procedures that accommodate regional and licensee inputs
- Application of Acceptable Fire Hazards Models
- Application of Approved NEI 04-02 Risk Informed Change Control Process Guidance and RG 1.174
- Application of Risk Assessment Tools

NFPA 805

Transition Pilot Program

ACRS Fire Protection Subcommittee
May 17, 2005

Paul Lain, P.E.
NRR/DSSA/SPLB

Briefing Outline

- High-Level Objective
- Purpose
- Program Activities
- Team Make-up
- TPP Outcomes
- Industry Interest
- NFPA 805 TPP Schedule

HIGH-LEVEL OBJECTIVE

- Provide regulatory stability for plants transitioning to NFPA 805 by using lessons learned and regional participation (i.e., consistent interpretation of regulatory expectations on the part of the licensee, the regional staff, and NRR staff)

NFPA 805 TPP Purpose

- The purposes of the NFPA 805 Transition Pilot Program (TPP) are:
 - Provide oversight via observations visits
 - Enhance regional participation with transition
 - Develop “lessons learned” reports
 - Share “lessons learned” with stakeholder
 - Prepare regulatory tools (standard review plan, template for license amendment request)
 - Enhance regulatory tools using lessons learned (regulatory guide, inspection procedures)

Program Activities

- Develop Program Plan
- Conduct Quarterly Observation Visits
- Prepare Observation Trip Reports
- Prepare Final Lessons Learned Report

Team Make-up

- Four Members
 - Fire Protection Engineer
 - Fire PRA Specialist
 - Regional Support (SSD/Electrical)
 - Contractor Support (PNNL)

TPP Outcomes

- Improve Inspection Procedure and SRP
- Develop templates for License Amendment Requests and Safety Evaluation Reports
- Communicate lessons learned with the Inspection Procedure Working Group, NRR, RES, Regions, and Stakeholders
- If necessary, enhance the Reg. Guide and NEI 04-02

Industry Interest

- Duke Energy
 - Oconee June '05 to May '07
- Progress Energy (tentative)
 - Harris June '05 to May '07

NFPA 805 TPP Schedule

- Program Plan Aug. '05
- Initial Observation Visits Fall '05
- Quarterly Visits TBD
- Observation Trip Reports TBD
- Lessons Learned Report TBD
- Lessons Learned Integration TBD

NFPA 805 POST TRANSITION INSPECTION PROCEDURES

ACRS Fire Protection Subcommittee

May 17, 2005

Sunil D. Weerakkody

NRR/DSSA/SPLB

Richard A. Dipert P.E.

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Summary of Approach

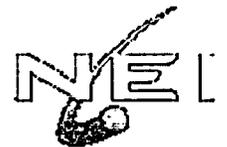
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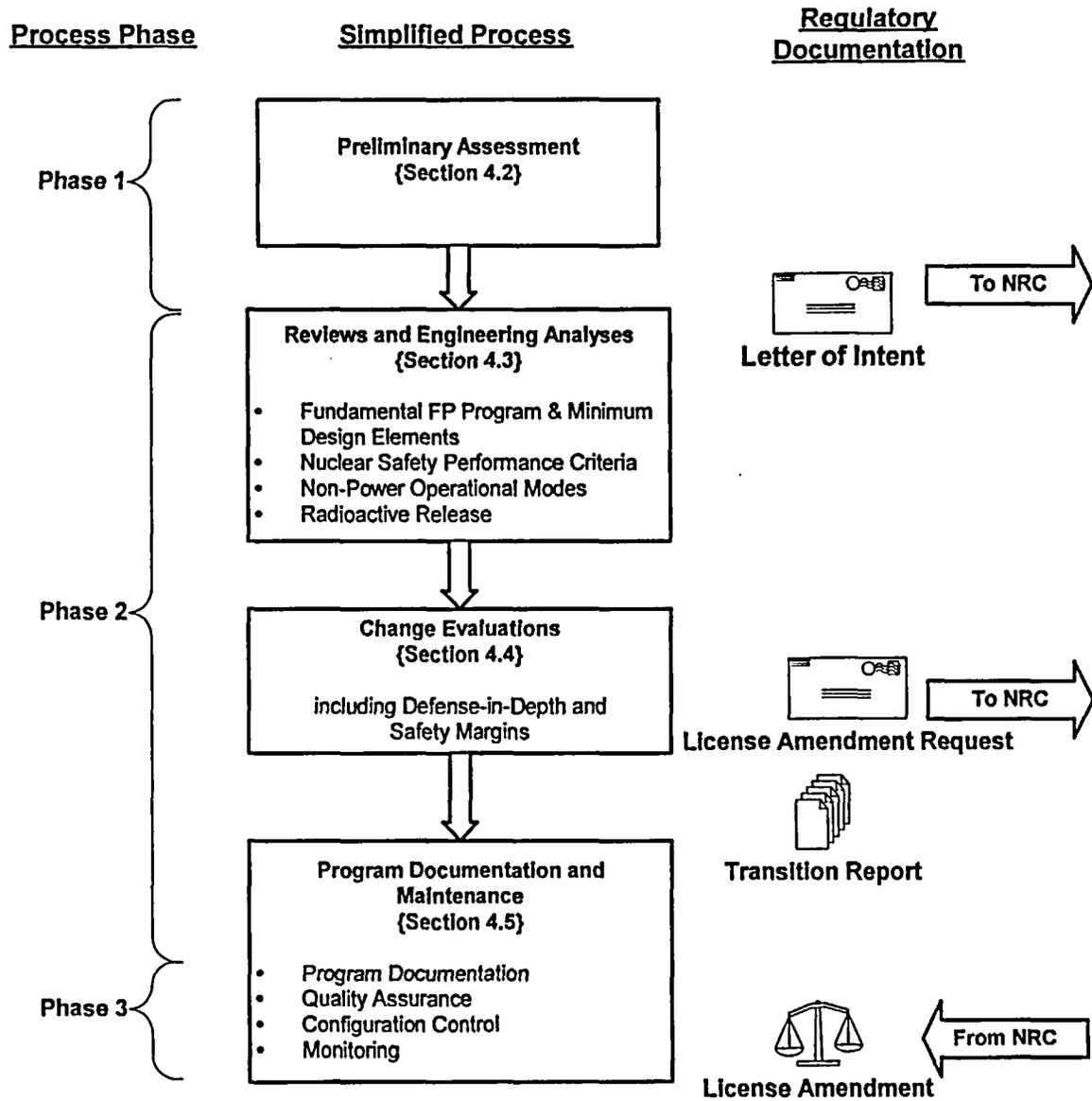
NUCLEAR ENERGY INSTITUTE

Agenda

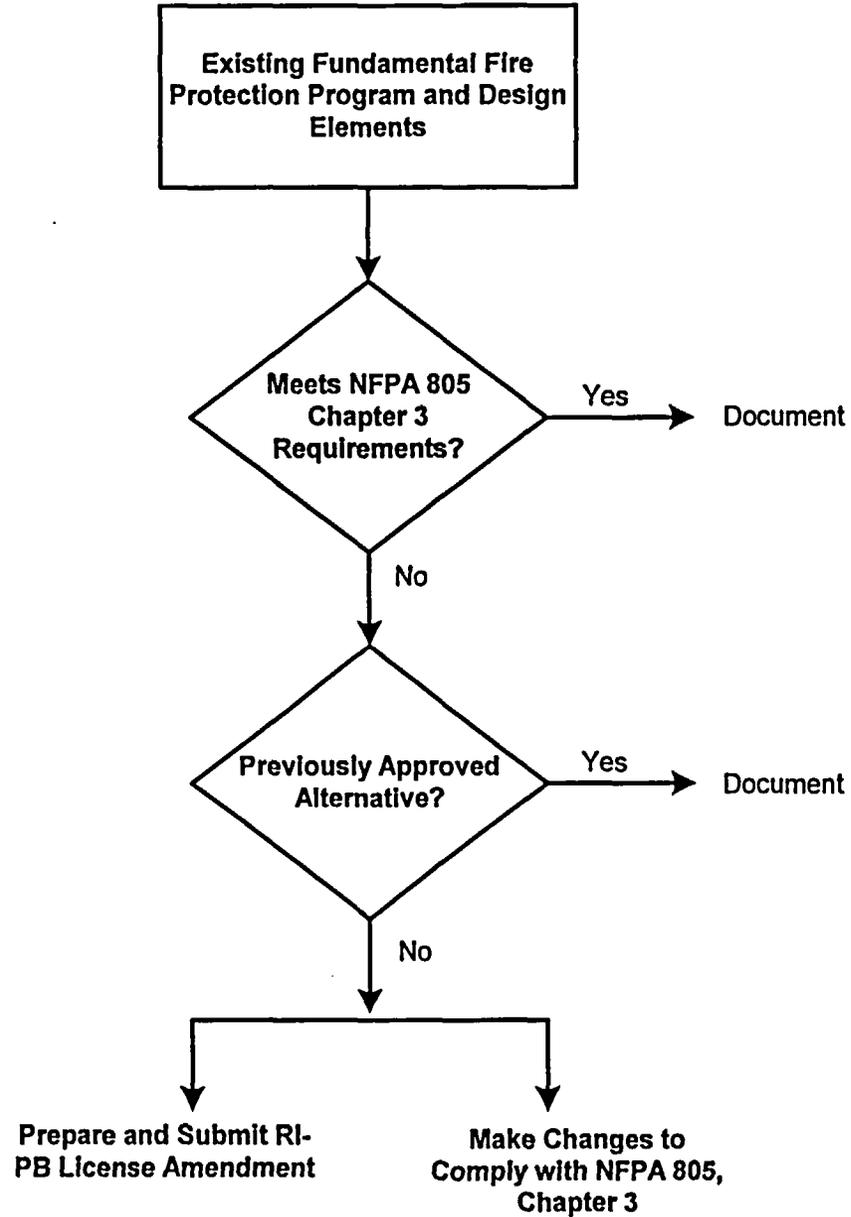
- Transition Process
- Change Process



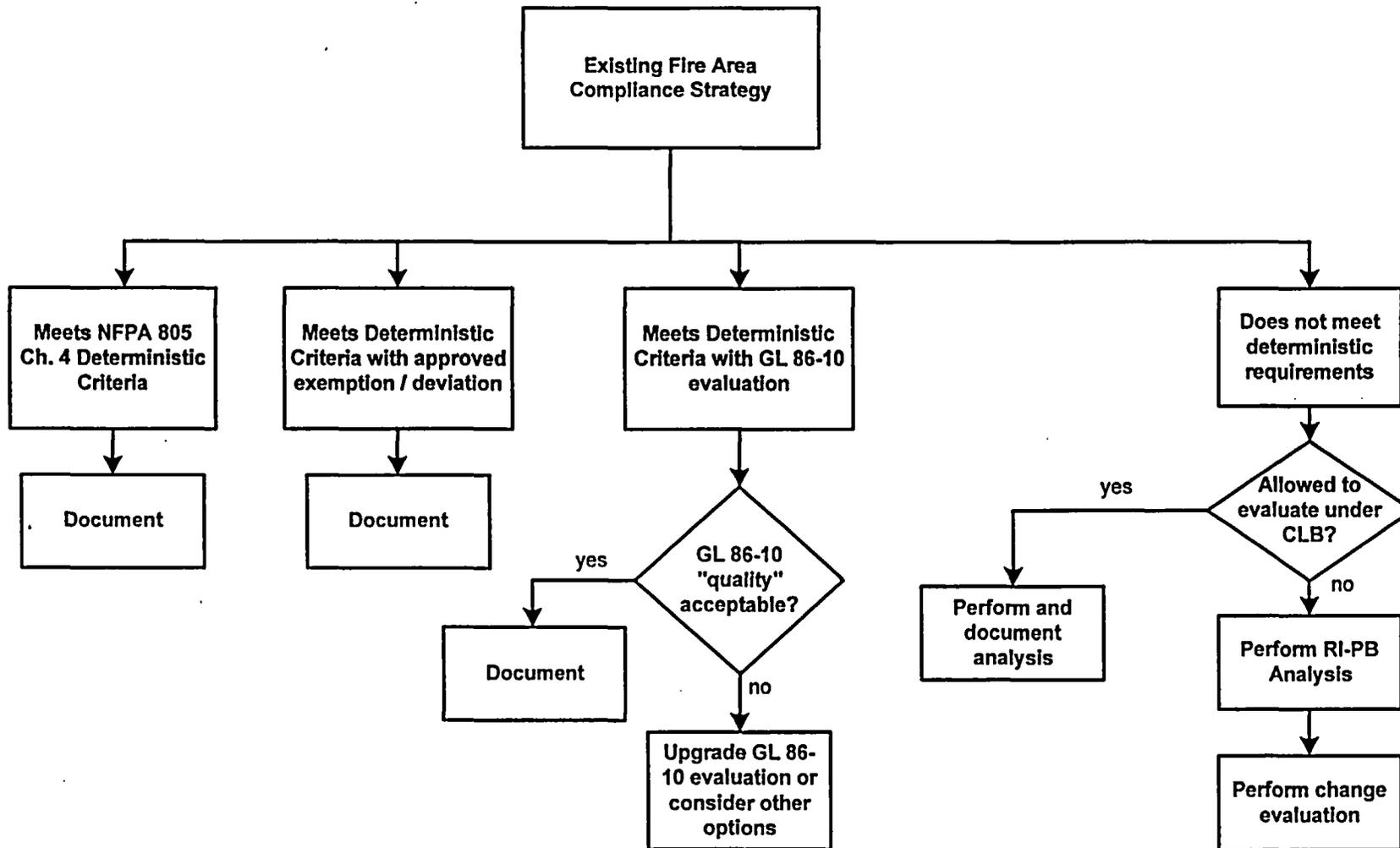
Transition Process - Overview



Transition – NFPA 805 Chapter 3

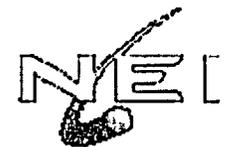


Transition – NFPA 805 Chapter 4



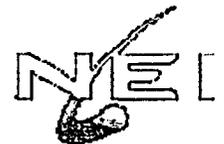
Transition Process

- Agreement reached
 - NFPA Chapter 3 Fundamental Elements
 - Elements “previously approved” and then modified via 10 CFR50.59 / FP Regulatory Review Process or by Engineering Equivalency Evaluation such that the element is no longer in compliance with Chapter 3
 - Although in compliance with Current Licensing Basis will require a License Amendment because “previous approval” cannot be claimed



Transition Process

- Agreement reached - continued
 - Chapter 4 Nuclear Safety
 - Elements “previously approved” and then modified via 10 CFR50.59 / FP Regulatory Review Process or by Engineering Equivalency Evaluation are part of the plant’s current licensing basis
 - The requirement for “previous approval” does not exist for Chapter 4 requirements



Transition Process

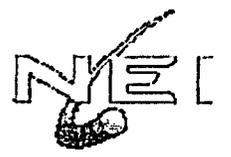
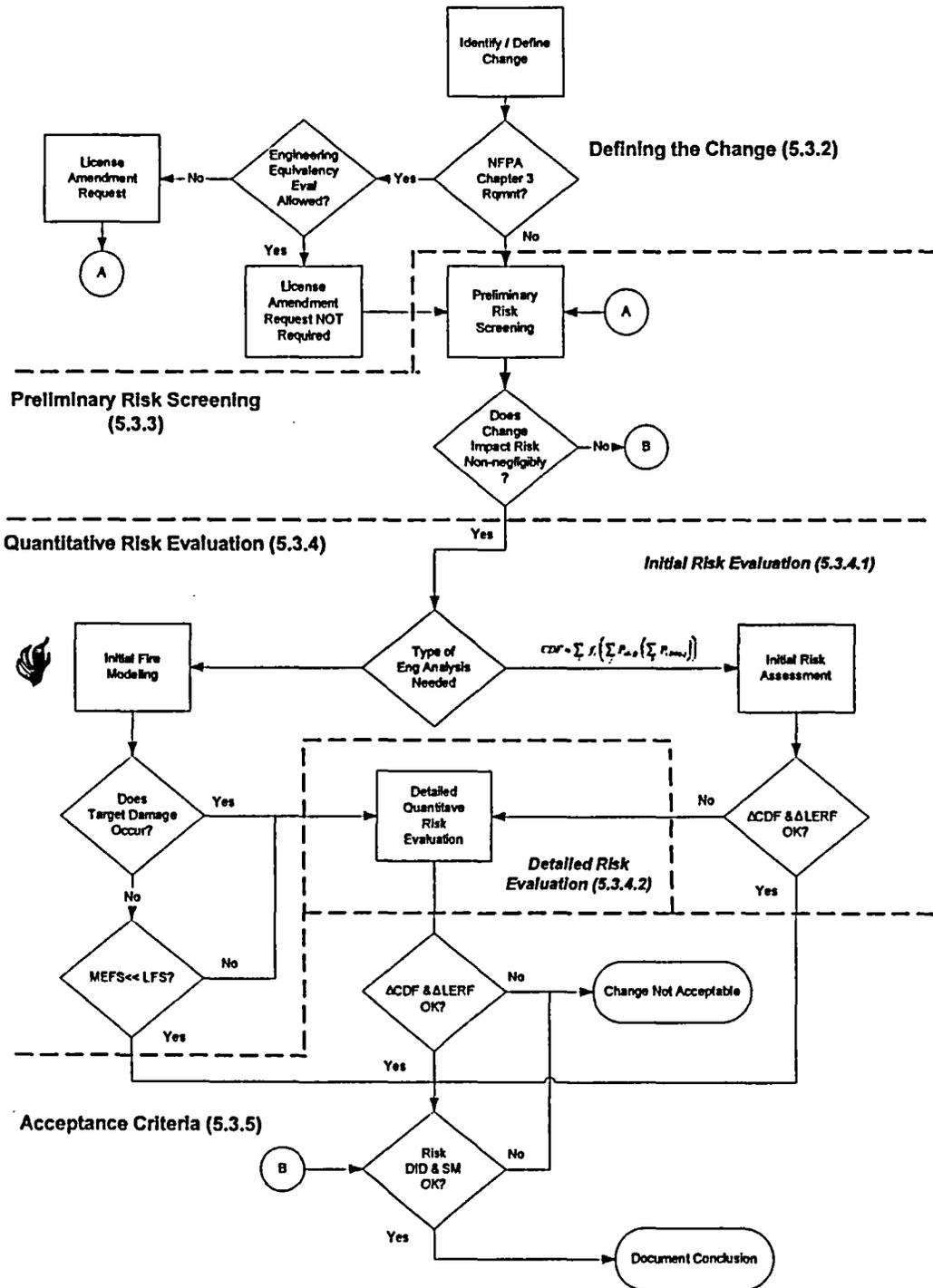
- Following aspects will be “Tested” during the first Pilot
 - Determination of “Previously Approved”
 - Transition / Change Evaluation of “Recovery Actions”
 - Transition / Change Evaluation of “Circuit Failure Issues”



Change Process

- Important Attributes of the Change Process
 - All Changes Require a Risk Screen
 - Similar to existing Processes (10 CFR 50.59 and NEI 96-07)
- Remaining Issue
 - Ability to continue to perform “Equivalency Evaluations”





Change Process – Required NRC Approval

Current

- May make changes to the approved fire protection program without prior NRC approval as long as those changes do not adversely affect the ability to achieve and maintain safe shutdown

10 CFR 50.48 (c)

- Except where NRC (AHJ) approval for changes or deviations is required by 10 CFR 50.48(c) and NFPA 805, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes are evaluated and determined to be acceptable as provided for in NFPA 805



Change Process – Equivalency Evaluations

Current

- Allowable as long as the License Condition acceptance criteria is maintained

10 CFR 50.48 (c)

- Not allowed under Chapter 3 Fundamentals
- Allowed under Chapter 4 Nuclear Safety Criteria



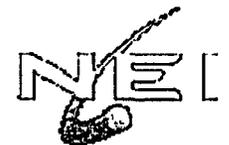
Examples of changes that would not require a License Amendment are:

- Replacing a fire rated component (e.g., penetration seal, door, wrap, etc.) with a different component/material having the same or greater fire rating.
- Changing the surveillance frequency of a fire protection feature or system based on NFPA standard as long as the underlying basis for the NFPA standard frequency is the same.
- Evaluating blocked sprinkler head (s) / detector for adequate coverage in the area. Although the deviation is with a Chapter 3 requirement, the adequacy of the coverage should be evaluated with respect to the nuclear safety component (s) the sprinkler / detection system is protecting.



Examples of changes that would require a License Amendment are:

- Revision of concentration of an agent to a value less than that required by the respective code.
- Reducing the number of fire brigade members required on-site below 5
- Removing a suppression system from an area crediting alternate (i.e., alternative or dedicated) shutdown capability (in accordance with Appendix R Section III.G.3)



NFPA 805 Regulatory Guide Programmatic Overview

ACRS Fire Protection Subcommittee
May 17, 2005

Paul Lain, P.E.
NRR/DSSA/SPLB

Briefing Outline

- Purpose
- History NFPA 805 Rule
- NFPA 805 Rule Activities
- RG Schedule
- Industry Interest
- Advanced Reactor Fire Protection

Purpose

- Requesting ACRS review and endorsement of the final NFPA 805 Regulatory Guide, “RISK-INFORMED, PERFORMANCE-BASED FIRE PROTECTION FOR EXISTING LIGHT-WATER NUCLEAR POWER PLANTS.”

History NFPA 805 Rule

- 1995 – SECY 95-034, Thermo-Lag Resolution
- 1998 – SECY 98-058, RI/PB FP Std
- 2000 – SECY 00-009, Rulemaking Plan
- 2001 – NFPA 805 Published
- 2002 – Proposed NFPA 805 Rule
- 2004 – NFPA 805 Rule Approved

NFPA 805 Rule Activities

- Regulatory Guide
- NEI Implementation Guide, NEI 04-02
- Inspection Procedure
- Pilot Plant Program
- RES Product Integration
 - Fire PRA Methodology
 - Fire Modeling - V&V
- Standard Review Plan

NFPA 805 Reg. Guide Schedule

- Rule Approved June '04
- NEI 04-02, Rev. F July '04
- ACRS Deferred Review Sept. '04
- DG Public Comment Oct. - Dec. '04
- Public Meetings Oct. '04, Jan. '05
- NEI 04-02, Rev. G3 April '05
- NEI 04-02, Rev. 0 May '05
- ACRS/CRGR Review May '05
- ACRS Full Committee June '05
- Final Publication July '05

Industry Interest

- 2/05 - Duke Energy LOI
 - Oconee June '05 to May '07
 - McGuire 2006 to 2008
 - Catawba 2007 to 2009
- 5/05 – Progress Energy LOI (tentative)
 - Harris June '05 to May '07
 - TBD: Brunswick, Crystal River 3, Robinson

Advanced Reactor RI/PB Fire Protection Standard

- NRC Request 2/02
- NFPA Response 10/02
- NFPA 806 Subcommittees 7/04
- Draft NFPA 806 4/05
- Report on Proposal 5/06
- Report on Comments 3/07
- Council Issuance 1/08