

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Nuclear Waste
and Materials: 182nd Meeting

Docket Number: (n/a)

PROCESS USING ADAMS
TEMPLATE: ACRS/ACNW-005
SUNSI REVIEW COMPLETE

Location: Rockville, Maryland

Date: Wednesday, September 19, 2007

Work Order No.: NRC-1785

Pages 1-47

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UNITED STATES NUCLEAR REGULATORY COMMISSION'S
ADVISORY COMMITTEE ON NUCLEAR WASTE & MATERIALS

September 19, 2007

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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 NUCLEAR WASTE AND MATERIALS

(ACNW&M)

182nd MEETING

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WEDNESDAY,

SEPTEMBER 19, 2007

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VOLUME II

The meeting was convened in Room T-2B3 of Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, at 8:30 a.m., Dr. Michael T. Ryan, Chairman, presiding.

MEMBERS PRESENT:

- MICHAEL T. RYAN, Chair
- ALLEN G. CROFF, Vice Chair
- JAMES H. CLARKE, Member
- WILLIAM J. HINZE, Member
- RUTH F. WEINER, Member

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NRC STAFF PRESENT:

SHER BAHADUR

ANDREA VALENTIN

JOHN N. RIDGELY

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P R O C E E D I N G S

8:30 A.M.

1
2
3 CHAIR RYAN: All right, folks, it is the
4 appointed hour, so if could ask everybody to come to
5 attention.

6 This is the second day of the 182nd
7 meeting of the Advisory Committee on Nuclear Waste and
8 Materials. During today's meeting the Committee will
9 consider the following: Regulatory Guide revisions,
10 preparation for our meeting with the NRC Commissioners
11 in November, and discussion of ACNW&M letter reports.

12 This meeting is being conducted in
13 accordance with the provisions of the Federal Advisory
14 Committee Act. Chris Brown is the Designated Federal
15 Official for today's session.

16 We have received no written comments or
17 requests for time to make oral statements from members
18 of the public regarding today's session. Should
19 anyone wish to address the Committee, please make your
20 wishes known to one of the Committee staff.

21 It is requested that the speakers use one
22 of the microphones, identify themselves and speak with
23 sufficient clarity and volume so they can be readily
24 heard. It's also requested that if you have cell
25 phones and pagers that you kindly turn them off.

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1 Thank you very much.

2 Feedback forms are available at the back
3 of the room for anybody wishing to provide us with
4 their comments about the meeting. Thank you very
5 much.

6 Without further ado, I'll turn to our
7 presenters and Dr.

8 Thank you. Dr. Bahadur, are you going to
9 lead us off?

10 MR. BAHADUR: Yes.

11 CHAIR RYAN: Thank you very much.

12 MR. BAHADUR: Thank you so much and it's
13 always a pleasure to come to this Committee and today
14 I'm going to be talking about the Reg. Guide
15 revisions. But before I do that, I'd like to take
16 this time to inform you of two other news items. As
17 I have told you earlier, in my directorate I have
18 three branches. One is the Waste Research Branch.
19 The other is the Radiation Protection Branch and the
20 third is the Reg. Guides Branch.

21 The last time when I was in front of the
22 Committee I informed to you that we had certain budget
23 cuts in the decommissioning area which may require me
24 to find new homes for this stuff in the Waste Research
25 Branch to other places. Well, the good news is there

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1 was an SRM August 31st. The Commission has reinstated
2 the resources in the decommissioning area. As a
3 result, I will be able to maintain the Waste Research
4 Branch within my directorate and I don't need to find
5 a home for them in other areas.

6 Right now, the branch is preparing, is in
7 the process of preparing a research plan, a research
8 plan which will reflect a broader-based support that
9 they can provide to the Agency, not just in the
10 decommissioning area, but also in the new reactors
11 area and also in the operating reactor. So as and
12 when it becomes available to the Committee, as in the
13 past, we would like to utilize this Committee as a
14 peer review for such a plant and I'll be coming to you
15 for that in the near future. I do not have the date.

16 CHAIR RYAN: We'll look forward to it.
17 Thank you. Good news.

18 MR. BAHADUR: Yes. It certainly is very
19 good news.

20 The second news is on the National Academy
21 report on the alternative technologies, alternative
22 sources that they are working for us. We had an
23 information security review for about 14 days which
24 was over the long weekend. The NRC staff has now
25 completed their review. The comments have gone to the

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1 National Academy. We would like to share the report
2 with the Advisory Committee, but the Academy's wishes
3 are unless the report goes to Congress, they wouldn't
4 want to make it public.

5 I'm going to be working with Frank
6 Gillespie to find ways by which we can share the
7 report with the Advisory Committee so that when the
8 report comes to the Commission, the Committee is
9 prepared to advise the Commission about that.

10 One possible solution would be that we
11 could share our review of the report because the
12 report came to us for a security, information security
13 review. We conducted that and we sent our comments to
14 the Academy. One possibility would be to bring those
15 comments to you. But there are pitfalls for that too.
16 If you don't see the entire report, the comments may
17 not mean anything.

18 So there are some constraints and there
19 are some options and just in the next few days and
20 weeks we will resolve that and then perhaps the
21 Academy, I mean the Advisory Committee can get
22 involved.

23 CHAIR RYAN: We're happy to help.

24 MR. BAHADUR: Coming back to the
25 Regulatory Guide revisions, today you're going to be

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1 hearing about the process that we have followed in
2 updating the Reg. Guides, eliminating the Reg. Guides
3 or enhancing. And also examples of specific Reg.
4 Guides that the Advisory Committee may wish to hear.

5 As I understand, you are mostly interested
6 in the Division 8 Reg. Guides. I have invited
7 Stephanie Bush-Goddard, who is the branch chief of the
8 Radiation Protection Branch. She would be here to
9 answer any questions. So if you don't have any
10 specific questions from me, I'd like to turn it over
11 to Andrea Valentin and she is the branch chief of the
12 Regulatory Guide Development.

13 CHAIR RYAN: Just by way of introduction
14 I might add that we basically divided up the Reg.
15 Guide Divisions among the members and we kind of took
16 a look across all the Reg. Guides as kind of to
17 review. So we're consolidating all of our reviews,
18 not just Division 8.

19 MR. BAHADUR: I see.

20 CHAIR RYAN: But actually all of them, so
21 we'll offer you that insight as we get going.

22 MR. BAHADUR: So what we'll do, and as you
23 would discover that during our discussions, some of
24 the Reg. Guides also deal with the decommissioning and
25 the waste area as well and I have invited Bill Ott who

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1 is the branch chief of the Waste Research Branch and
2 as I speak, he's coming in, and he is going to take
3 the seat right there.

4 MS. VALENTIN: Okay, thank you, Sher.
5 It's especially a please for me to present. I've
6 never actually presented before this group before
7 until June of 2007 when I took this branch, I was on
8 the reactor side of the house. So I look forward to
9 presenting to you.

10 What I'm going to do, well, what I'm going
11 to give to you is just an overview of our program.
12 I'm Andrea Valentin and I have with me, John Ridgely
13 who will follow with more details on actually the
14 approach that was taken to prioritize the Reg. Guides.

15 And also as Sher mentioned, we have both
16 Stephanie Bush-Goddard and Bill Ott and staff from the
17 Radiation Protection and Waste Research Branch because
18 I know the Committee is interested in some specific
19 technical questions. So they'll be able to answer
20 those.

21 Next slide, please.

22 The real objection of the program is to
23 look all of the Reg. Guides, to either develop --
24 there are some Reg. Guides that are on the table or
25 review an update Reg. Guides as you know that are old

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1 '70s vintage, '80s vintage, and also to withdraw Reg.
2 Guides. I'll get into that a little more because that
3 a large effort that we're doing as well. The
4 objective is to have better efficiency and
5 effectiveness and interactions with the licensees.

6 Next slide, please.

7 Phase 1 was the critical high priority
8 phase which was necessary for the high priority new
9 reactor-related Reg. Guides. That phase was completed
10 in March of 2007 as the Committee is aware. We're
11 currently in Phase 2 which goes beyond the new
12 reactors. We're in process with the operating program
13 offices to finalize some of the information, but right
14 now the Phase 2 Reg. Guides are to be completed by
15 December of 2008.

16 Going beyond that, Phase 3 Reg. Guides are
17 the Reg. Guides that potentially need a lot more time
18 for technical development. There's a lot more
19 involvement with the Phase 3 Reg. Guides. Those are
20 to be completed by December 2009. What's actually new
21 to this Committee is a new phase, Phase 4 which grew
22 basically out of necessity with interactions with the
23 program offices. There are some Reg. Guides for
24 various reasons. For example, there may be standards
25 that are being developed and it doesn't make sense to

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1 go out with a Reg. Guide before the standards develop.
2 There may be some extensive coding or some other
3 reason why some of these Reg. Guides need to go out to
4 Phase 4. And that would be December 2010.

5 I wanted to point out that the dates in
6 the phases are really date-driven. Just because a
7 Reg. Guide is maybe a Phase 3, it could be issued well
8 before December 2009. There's a cut-off date based on
9 how long it takes for the Reg. Guide Branch to process
10 Reg. Guides that puts each Reg. Guide in a particular
11 phase. If something is at Phase 3, it may be an early
12 Phase 3. So I wanted to point that out.

13 Now I wanted to turn over to John Ridgely,
14 who will give you more detail on prioritization. Then
15 I'll come back and give you some status on current
16 activities that we're doing.

17 MR. RIDGELY: Good morning. The
18 Commission directed the staff to by memo to update all
19 the Regulatory Guides and provided funding for this.
20 And what we did was researched, made a list of all of
21 the Regulatory Guides and we took staff and
22 prioritized all the Guides. Then we then shared this
23 information with NRR who looked at our prioritization
24 and they came back and they said well, move these
25 here, move those there. So we came up with a combined

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1 prioritization for all the Regulatory Guides.

2 We then issued this out for public
3 comments. We got some comments. We factored those
4 comments into our prioritization. We briefed the ACRS
5 on our prioritization and then we started basically
6 with the Phase 1 which is for new reactors.

7 Prioritization is not a static thing.
8 That's the initial prioritization that we did, but it
9 is an on-going living thing. The Regulatory Guides
10 move from phase to phase, based upon a number of
11 factors, not the least of which is how long is it
12 going to take to get the technical basis developed to
13 revise the Regulatory Guides. So it's not static. It
14 changes and we try to keep you all informed of which
15 ones are in Phase 2 this week and which ones are
16 moving to different places.

17 The Regulatory Guide selection process
18 then really was a combination of a top-down approach
19 and what I call a cross-cutting approach, more of a
20 horizontal approach.

21 The top-down approach, this was again
22 basically because we start with new applications for
23 reactors was the driver for it, so we looked
24 primarily, initially at those. Which were the ones
25 that were most out of date. Which were the ones that

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1 were most important for new reactors. But it's
2 expanded beyond the new reactors. It's in all fields.
3 It's in medical. It's in transportation. It's in
4 decommissioning, all the fields whether inspecting
5 have an urgent need causes it to rise to the top in
6 terms of priority.

7 Another issue that is factored into is the
8 methods of the technology. Are the methods that are
9 in there, are there newer methods, newer versions,
10 newer ways of doing things that are better, more
11 efficient, more accurate. One of the -- an example of
12 this, for example, is the GALE code which you all know
13 and are familiar with, has been around for a while.
14 And that's something that needs to be changed. And
15 I'll talk more about that in a minute.

16 Other issues are like codes and standards.
17 Some of the standards that were referenced for '75 or
18 '76 or some very old standards. Newer standards,
19 obviously, have come about and the question then
20 becomes what should we reference them? First, you
21 have to look at the new standards to make sure that
22 they're still good standards that we want to endorse,
23 but given that they are, that's another reason to
24 update the Regulatory Guide and based upon its age,
25 for example, in terms of standards and the benefits of

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1 going to new standards, again, that's something else
2 that factors into prioritization of it.

3 And as Andrew mentioned, timing is an
4 issue. For Phase 1, we were mandated to be done by
5 March 2007 which we were. And that was driven
6 primarily because of the regulation that says
7 applicants have to address all the Regulatory Guides
8 that are on the books six months or more before the
9 date of an application. And so that's what drove that
10 particular phase of them when we get those through.
11 There isn't anything exactly like that that's driving
12 this except the Commission express desire that we be
13 done in three years.

14 To meet the dates and not just the first
15 ones, but all of them, requires that sometimes we
16 can't do everything we want, particularly in the first
17 phase, particularly with Regulatory Guide 1.112 where
18 the GALE Code is referenced. There were things that
19 we could do that would improve the Reg. Guide, things
20 that we could not do in that time frame.

21 Those that we could do, we did. And we
22 came to you all and presented to you and you wanted
23 the GALE Code updated. We do too. We've been working
24 on getting together to get the code updated. But
25 that's not something that we could by March 2007, but

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1 we decided that the improvements that we could make
2 would be of sufficient benefit to applicants that we
3 would go ahead and issue that anyway and we would take
4 it on as an action that we would update the GALE Code
5 or whatever is appropriate. And so that Reg. Guide
6 hasn't fallen off the plate. It is still there, but
7 because of the time it takes to do this work, it's not
8 something that's coming up immediately.

9 And this is the same type thing that will
10 happen in other Regulatory Guides and it will continue
11 to happen. When we're done, if we could be done in
12 three years, the process just doesn't quit because
13 there always will be new standards. There's always
14 going to be things that are going to -- new ways of
15 doing things, reasons to update the Regulatory Guides.
16 And so we see this more of a continuing process where
17 we're going to update to where we can now, but either
18 because of something we know now or something we'll
19 know later, we need to go back and do it again.

20 Next slide, please.

21 In the cross-cutting, what we did was we
22 looked at each Regulatory Guide and we looked at it
23 for form and technical content, the consistency within
24 the Guide. But in addition to that, we look at the
25 Guide and its references and we look at all the

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1 Regulatory Guides primarily on either a person's
2 expertise, but mostly on the titles of the Guides,
3 where they were located like in Division 8, we'd look
4 for all the Division 8s. For Guides that look like
5 might have something similar in common with the Guide
6 that we were particularly looking at.

7 The purpose for this was to make sure that
8 what we were producing in the Guide that we were
9 looking at was consistent with what the other Guides
10 said or whether it was something that the other Guides
11 needed to be updated to now. For example, if we were
12 looking at a particular Guide and were looking to
13 updating one aspect, if that same thing shows up in a
14 different Guide, then we need to update that one at
15 the same time. We didn't find that, but we looked for
16 it to see if that was the case.

17 Let's see. Not in 8, but when we did look
18 at it for Division 1, we found Reg. Guide 1.128 which
19 is installation and design of lead storage batteries.
20 Well, that was one we saw that needed updating. We
21 found 1.129 which wasn't really very far away, but it
22 was maintenance and testing, replacement of lead
23 storage batteries. So we said hey, if we're going to
24 do one, we're going to do the other. And so we did
25 both of those at the same time. These are the kind of

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1 things that we were looking for, the ones that we
2 needed to piggyback and carry along with us.

3 We also looked for inconsistencies. We
4 did find a few small things, but we looked for the
5 larger ones also in terms of as an example. There's
6 a Reg. Guide 1.60 which is design response spectra for
7 nuclear power plants. It's a seismic. We were
8 creating Reg. Guide 1.208 which is performance-based
9 approach for site-specific earthquake ground motion.
10 They're a similar topic. Are they consistent? Well,
11 in this case the answer is no. They were
12 intentionally not consistent because we're going to a
13 different approach.

14 So we looked to find consistency and if we
15 didn't find consistency we addressed it in terms of is
16 it acceptance, is it the way to go, is it something we
17 need to do now? Or maybe it is something we need to
18 think about. We have a tracking system that tracks
19 all the Regulatory Guides and where they are, not only
20 what phase and who's doing what to them, but we also
21 try to keep track of things that we see that might
22 need to be looked at in the future.

23 An example of this is Reg. Guide 1.97
24 which is the criteria for accident monitoring
25 instrumentation in nuclear power plants. When we

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1 looked at that Guide we said oh, well, you know, Reg.
2 Guide 1.7 which is the control of combustible gas
3 concentrations in containment is going to use that
4 information. It's not critical, but when we get to
5 1.7 we want to make sure that we're consistent with
6 1.97. So that's something that we put in our tracking
7 system so that when we go to 1.7, we have these notes
8 that we carry along with us so that we can be
9 consistent.

10 So our process then basically is not only
11 a top down, but we're looking laterally along at the
12 same time.

13 Next slide.

14 So as a result, well, that didn't show
15 well. Anyway, the prioritization is a combination of
16 the assessments that we've done with the Regulatory
17 Guides and staff availability, the availability of
18 information to update the Regulatory Guides, the
19 availability of resources, however you wanted to look
20 at it. Those two aspects come together to actually
21 refine our prioritization. And that's basically how
22 we've done it and how we continue to do it.

23 MS. VALENTIN: And I also just wanted to
24 close with updating you on some current activities.
25 We awarded a commercial contract in early August.

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1 There were two awardees and that was a large effort
2 that finally came to fruition and we're at the point
3 where we're drafting the task orders that will be
4 competitively bid to the two awardees.

5 We're also still having the on-going
6 interactions with the program office, as John
7 mentioned. It is a living system, sometimes daily,
8 sometimes weekly. We have negotiations when we're
9 moving Reg. Guides in and out or not a whole lot of
10 change in lead responsibility, but there's been some
11 of that as well, due to individuals, maybe going to
12 different offices and things like that.

13 The large effort that I mentioned at the
14 beginning to withdraw Reg. Guide obviously the NRC is
15 not going to withdraw Reg. Guide without sufficient
16 information and a series of questions being answered
17 to go out in the Federal Register notice. So there
18 are two people on my staff that have been actively
19 working on about 35 to 40 Reg. Guides that have been
20 identified for withdrawal and working with the lead
21 individuals and offices and others to make sure that
22 these questions are answered and to prepare a Federal
23 Register notice.

24 And finally we maintain weekly updates on
25 the website, both there's a Research internal website

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1 and an external website where status of Reg. Guides or
2 listings, things have moved from one place to the
3 other are put on the website.

4 That's the end of our prepared remarks and
5 we'll take any questions that you have.

6 CHAIR RYAN: Great. Thanks a lot. Let me
7 tell you a little bit about what we did. We took --
8 we divided up the Divisions among us and looked
9 through them from a technical content and currency,
10 sort of pattern and found some trends and again, let
11 us start with the fact that we really appreciate the
12 fact this is a huge task and Rome wasn't built in a
13 day, so we appreciate the fact you've got a lot to do.

14 The patterns I think, at least I saw in
15 Division 8 and I'd ask my colleagues to chime in on
16 what they saw are that in a lot of cases technology is
17 referred to that's out of date. I don't know how much
18 we need a film dosimetry Reg. Guide any more to tell
19 you the truth. I mean there is some film used here
20 and there, but that's one that's just out of date and
21 there are many others, uranium bio-assay and some of
22 the others. An interesting one that was reactor-
23 related was the dose -- occupational radiation dose
24 assessment in light water reactor power plants which
25 had basically a table that you filled out as you

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1 calculated numbers, I'm guessing, based on the fact
2 that it was written in '79 when you calculated it with
3 a slide rule. So that one is out of date. The
4 trouble with technology standpoint.

5 You touched on the second major area which
6 is Reg. Guides that are out of date because they refer
7 to either an ANSI standard or an ANSI ANS standard or
8 some other standard that also woefully out of date.
9 When I saw our standard reference in the Reg. Guide I
10 went and looked in ANSI and I said what is the current
11 version of that standard and often there's 15 or more
12 years between the one that's referenced and the one
13 that's currently on the books. And of course, that
14 doesn't say the one currently on the books is correct
15 and up to date for the purposes of you putting it in
16 a Reg. Guide, so I appreciate that as well. But so I
17 think there's -- that was sort of the second area.

18 And the third was more of a question than
19 an observation and that is if there is a sufficient
20 industry standard I would ask why do we need a Reg.
21 Guide?

22 MR. RIDGELY: A lot of Reg. Guides now are
23 turning to referencing the industry standards so there
24 is a move for at least in some Reg. Guides we do that.

25 CHAIR RYAN: And I would say maybe a move

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1 that needs a few more steps, instead of writing a Reg.
2 Guide that interprets the standard, just use the
3 standard and not try and make a separate Reg. Guide,
4 because you can always keep your eye on that standard
5 is if it updated or ages, you can say well, we're
6 going to have now write a Reg. Guide because that
7 standard is out of date or we're not happy with it or
8 we want to do something else. But the idea of
9 endorsing industry consensus standards is something
10 that we ought to think about.

11 MR. RIDGELY: I think we are doing that
12 and the ones that I am a little bit familiar with
13 turns out those are PRA standards.

14 CHAIR RYAN: Right.

15 MR. RIDGELY: Generally it turns out that
16 we're happy with a lot that they do, but there are
17 things in there that we aren't happy with and so we
18 need that Reg. Guide again to say okay, you can do
19 this, but these are the problems with that standard.
20 These are the things you have to do differently or
21 address in some fashion.

22 MS. VALENTIN: I think the best example is
23 like for example on the Reactor side the ASME Section
24 11 and Section 3 Reg. Guides. There are several
25 exceptions that are taken to those Reg. Guides to

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1 these standards that go out.

2 CHAIR RYAN: Sure.

3 MS. VALENTIN: So the Reg. Guide, you
4 know, kind of outlines what the NRC would accept and
5 then details what the NRC would not accept.

6 CHAIR RYAN: I appreciate that.

7 MR. BAHADUR: I believe we are saying the
8 same thing. The Agency has encouraged consistent
9 standards for a long, long time. Actually, our staff
10 is very active in all the subcommittees where these
11 standards are developed.

12 What happens is when you look at the
13 regulatory structure where we start with a rule and
14 then we say there are a number of ways by which this
15 rule can be met. And one approach could be what the
16 staff puts in the Regulatory Guide which goes to the
17 licensees and also provide guidance to the NRC staff.

18 Similarly, one notch down, NUREG, which
19 gives you some sort of an approach, not necessarily a
20 preferred approach, but one approach which is there.
21 So there are various ways by which the licensing staff
22 can communicate to licensees what is expected out of
23 them in order for them to meet the rule.

24 When the Agency endorses a consensus
25 standard, one way of letting the industry know that we

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1 have done that is a Reg. Guide. There are cases where
2 we have taken the standards and wholesale endorse it
3 in a two-page Reg. Guide.

4 CHAIR RYAN: There you go.

5 MR. BAHADUR: But we still have to do
6 that.

7 CHAIR RYAN: Oh, no I understand that
8 format.

9 MR. BAHADUR: And as the Chairman knows,
10 the process is it goes out for public comment. We
11 allow the public to see what the Agency is going to be
12 doing. And then once we receive the public comment
13 then we make that as a final decision.

14 CHAIR RYAN: Sure.

15 MR. BAHADUR: Whether to say it's a Reg.
16 Guide or rulemaking. So yes, I understand where the
17 Committee is suggesting this -- we are looking at some
18 of these consensus standards. The problem -- not the
19 problem, but the longer time it takes when we find an
20 exception, because then we start writing these tables
21 of consideration as to why we're considering this
22 standard being acceptable, but there are exceptions to
23 it and that's where we are.

24 We are looking at the consensus of
25 standards. That's one of the approaches as well for

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1 revising the Reg. Guides.

2 CHAIR RYAN: And I appreciate that.
3 Thanks. That's a good explanation. Again, by
4 endorsing a consensus standard I think we all
5 recognize there has to be a public and formal process
6 to bring that under the direction that the Agency
7 wants to give the licensees.

8 Just a couple of technical points on
9 Division 8. I think it's fair to say that a lot of
10 the Guides are really out of step badly with the
11 current dosimetry calculational methods. There are
12 some that refer to old dosimetry where they use --
13 instead of total effect of committed dose, it's annual
14 dose for internal emitters and other things. So it's
15 woefully out of date in a lot of areas technically.
16 Actually, many of them refer to the old numbering
17 system in 10 CFR Part 20.

18 With that being said, the technical basis
19 is wrong for current dosimetry. Even though it's not
20 explicit in some of them, unless you know the
21 calculational methods, you don't know they're out of
22 date.

23 I just raise the question if licensees,
24 particularly newer ones are following those Guides,
25 they're technically incorrect. So that's an issue

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1 that needs some attention I think sooner rather than
2 later that the system of dosimetry that we use by
3 regulation in Part 20 is woefully out of step with
4 many of what the Reg. Guides call for. So that's one
5 that needs some attention.

6 And I think it's part of the foundational
7 technical basis whether it's calculational method for
8 an internal dose or things like the GALE Code that
9 we've talked about is a risk in writing an updated
10 Reg. Guide without checking to see if those
11 fundamental tools are properly supporting what you're
12 writing. And you made the decision to go ahead with
13 the 1.112 through 5 or 1 through 5?

14 MR. RIDGELY: 1.112.

15 CHAIR RYAN: Yes, 1.112 and on up, but I
16 think there's a risk there. That code is hard wired
17 with numbers that may or may not be applicable in new
18 reactors. We haven't seen any evidence that we know
19 they are or they aren't.

20 And again, there are ways around that,
21 given the time schedule. You need to advise folks
22 that's the case. If they want to look at those values
23 they certainly have the option maybe to change them
24 and update their calculations and so forth. But let
25 me ask our other Members that looked at various

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1 sections if they have any additional comments along
2 these lines.

3 Professor Hinze?

4 DR. HINZE: Well, I looked over those in
5 Division 4 and 6 and found much the same kind of
6 problems that Mike is referring to in terms of being
7 up to date.

8 Let me try a little different tack here.
9 I'm curious about your criteria for making decisions
10 and for example, your criteria in making a decision
11 whether you withdraw a Regulatory Guide and in its
12 place develop a new one or just change the current
13 regulation, what kind of criteria do you have
14 established to make those decisions?

15 MS. VALENTIN: There are series of
16 specific questions that were sent out systematically
17 to all of the lead program offices, for example, has
18 this Reg. Guide been superseded by updated guidance in
19 a NUREG? Are licensees still using this information,
20 those types of specific questions.

21 And that's why the negotiation is so I
22 guess tedious back and forth because we want to make
23 sure that we have the cognizant staff working on this
24 in coordination with the Reg. Guide Branch.

25 DR. HINZE: It seems to me these two

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1 approaches, you can withdraw and develop a totally new
2 one or you can change. I don't hear how that criteria
3 is really getting in there.

4 MS. VALENTIN: What I've seen mostly in
5 the ones that have come through my desk, there are
6 NUREGs that either consolidate some of this
7 information that update it, so primarily it's been
8 NUREGs that are replacing it. I haven't seen anything
9 yet that says there's a new Regulatory Guide that
10 replaces this particular Reg. Guide. There may be
11 some that are existing that are updated, but it hasn't
12 been withdraw this and we'll do a new one, so far that
13 I've seen.

14 DR. HINZE: My questions are really
15 predicated on the fact that I think that in some of
16 the Reg. Guides I looked at you'd be best off just
17 withdrawing them and starting afresh, modifying them
18 is just going to confuse things, at least in my view.

19 Let me ask you, who has the final say?
20 You're obviously a very talented group, a very
21 knowledgeable group, but who has the final say
22 regarding the technical basis that is included in the
23 Regulatory Guide? Who has the final word on that?

24 MR. BAHADUR: There are -- there's not one
25 approach that could fit all the Reg. Guides. There

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1 was one time, historically, when all of the rulemaking
2 functions, including the development of Reg. Guides
3 was in the domain of the Office of Research. The
4 policy of the Commission took place about eight years
5 back and it could be ten or six, I don't exactly
6 remember, at which time all the rulemaking functions
7 were given back to the Licensing Offices. So NRR
8 became responsible for the rulemaking related to power
9 reactors and NMSS became responsible for the
10 materials. Of course, with reorg. of NMSS and FSME so
11 accordingly they will share.

12 At that time, the function of developing
13 the Reg. Guide remained with the Office of Research.
14 However, the technical development did not go
15 wholesale to the Office of Research. It depended on
16 a particular issue, so there were some issues where
17 the technical basis was developed in the licensing
18 office and then there were others more generic in
19 nature where the Office of Research continued to
20 develop the basis.

21 DR. HINZE: So it's the best possible
22 people to handle the problem?

23 MR. BAHADUR: It's based on the seat of
24 the pants experience and as you said, the best
25 possible people. If the licensing office was dealing

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1 with the operating reactors, were getting the
2 information directly which could then make them change
3 a Reg. Guide or modify a Reg. Guide. That's how the
4 talent was used.

5 Now that --

6 DR. HINZE: It seems to me there's a
7 chance there for something to fall between the cracks
8 because the most knowledgeable person may be totally
9 on to something else that they're very much involved
10 with and they don't have time for this. So who --

11 MR. BAHADUR: There's always a chance for
12 such issues to fall through the cracks. The only
13 thing we can do is to provide certain screens. One of
14 these screens is a CRGR. CRGR takes care of all the
15 initiatives taken by the staff and they collectively,
16 which CRGR is a committee that answers to the EDO and
17 it consists of the Deputy Office Directors of the four
18 licensing offices, Office of Research and NSIR. They
19 collectively look at any initiative that is either
20 proposed or in the process by the staff members.

21 It's considered that once a particular
22 action has gone through their office management, it
23 has met through the section leader, the branch chief,
24 the division director and the office director. So
25 that's one screen right there. If anything fell

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1 through that, then it comes to the CRGR and the CRGR
2 collectively looks at it and sees whether everything
3 is tight.

4 And then we have --

5 CHAIR RYAN: Excuse me, that's where
6 public comment comes in in that process.

7 MR. BAHADUR: Right, and then it goes,
8 once we have gone through the CRGR and the EDO has
9 said okay, then it goes out for public comment at the
10 same time it goes to the Commission. But when it goes
11 to the Commission, that's a time when the Advisory
12 Committee gets in the equation because then they
13 advise to the Commission.

14 So there are a number of screens by which
15 we are trying to see the thing falls through the
16 crack, but I'm not saying nothing has fallen through
17 the crack.

18 DR. HINZE: That's very helpful, Sher.

19 MS. VALENTIN: And also too, to add to the
20 question about resources or people not having time,
21 maybe the best person that worked on it when it was
22 first initiated, that was the purpose of the
23 commercial contract. The two awardees had to look at
24 all the Reg. Guides and in their proposal response
25 tell what expertise they had with all these Reg.

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1 Guides, so the two awardees have experts. All the
2 task orders will be competitively bid. If one company
3 comes out better than the other, then they would be
4 awarded the task of working on technical bases.

5 And of course, the lead offices that have
6 responsibility for it have to be in the mix to look at
7 what comes back, make sure it's correct, but it is a
8 real problem that there are resource issues with the
9 offices. So that was the purpose of the commercial
10 contract.

11 DR. HINZE: Let me ask a final question
12 and that relates to the interface between ISGs,
13 between interim staff guidance and Reg. Guides. I
14 understand that there are some interim staff guidance
15 that's been around for some time. It's hardly
16 interim.

17 Is there a -- if I understand correctly,
18 the Interim Staff Guidance is not developed in your
19 group. And I'm wondering, is there a process by which
20 one looks at the ISGs to see if they should become
21 Reg. Guides or some way of evaluating whether the ISGs
22 should be terminated? Am I asking the wrong people?

23 MS. VALENTIN: I don't know for sure that
24 in every case that has happened. I can give an
25 example where I talk to my counterpart in NRO and this

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1 particular branch chief is on top of what needed to be
2 fed to us to give us the information we needed for
3 specific Reg. Guides. Whether that happens in every
4 case, I can't honestly say. But we really have to
5 defer to the program offices and the lead technical
6 folks and their management to make sure they're
7 rolling in everything.

8 What we are doing in our tracking system
9 is trying to make a link, for example, SRPs that need
10 to be tracked at the same time as we're looking at
11 particular Reg. Guides. So we try to put as much
12 information as we can and to go back and look at, but
13 the specifics on the Interim Staff Guidance, I can't
14 answer across the board.

15 DR. HINZE: It may be Interim Staff
16 Guidance that really should be Reg. Guides and for one
17 reason or another it has not been -- it's not taken
18 that form.

19 CHAIR RYAN: Thank you, Bill.

20 Allen?

21 VICE CHAIR CROFF: Yes.

22 MR. BAHADUR: If I may just add one
23 sentence.

24 CHAIR RYAN: Yes.

25 MR. BAHADUR: The way I classify in my

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1 mind the purpose of the Reg. Guide is mostly to
2 communicate the Agency's position to the licensees.
3 ISGs are meant for both internal and NRC staff
4 guidance as well -- so the licensees know what the
5 staff has been told.

6 So it's slightly a different thing.
7 However, there's a possibility that you can take an
8 ISG, incorporate all that into a document that can
9 extend to the licensees in the form of a Generic
10 Letter, Information Notice, NUREG and the Reg. Guide.

11 DR. HINZE: Much of the information that
12 relates to how the staff is being told to do a certain
13 thing is of extreme importance and certainly guidance
14 could provide guidance --

15 MR. BAHADUR: Sure. That's an excellent
16 observation.

17 DR. HINZE: Thank you.

18 CHAIR RYAN: Thank you. Allen?

19 VICE CHAIR CROFF: Yes, I looked at
20 Division 3 which is fuels and materials facilities.
21 I guess a few additional observations, there were I'd
22 say a handful of Reg. Guides in there that were still
23 out for comment, in other words, they never had gone
24 final for two or three decades. I think maybe that's
25 at least symptomatic.

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1 I observed in going through Division 3 and
2 in your discussion you noted, there are a lot of
3 closely-related Reg. Guides, the topics are very
4 similar. I'd like to suggest that consolidation of
5 those is probably a good idea to help prevent the,
6 let's say the interface problems or consistency
7 issues. I think it's in one Reg. Guide, less boiler
8 plate and more consistency might be a more natural
9 result.

10 Also in Section 3, there were a number of
11 design guides where it was specifying sort of how to
12 go about designing some particular part of a
13 reprocessing plant or something like this. That might
14 have been okay in the '70s when -- well, at the time
15 the government was sort of trying to encourage this
16 kind of thing, but I think maybe at this point the NRC
17 maybe shouldn't be in the business of trying to
18 specify how to design a reprocessing or a
19 refabrication plant, letting the applicant do what
20 they will and the NRC reviews it as usual.

21 Those are some additional observations.
22 When I go back and sort of look at the broad sweep of
23 all this, I think if I can use the phrase root cause
24 of all of this, is simply that many of these things
25 are just old and they haven't been looked at for

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1 decades and all of these specifics were highlighting
2 sort of stem from that.

3 And that raises the thought in my mind,
4 you're going through this process to try and update
5 them, but the need for some kind of a periodic review
6 of the Reg. Guides over the long haul, in other words,
7 let's not wait for another three decades and get in
8 the same difficulty in trying to come up with some way
9 to make that happen and make sure it happens.

10 I don't have a panacea for it or a
11 specific answer, possibly considering having Reg.
12 Guide sunset, in other words, a Reg. Guide is valid
13 for 10 years at which time it either needs to be
14 updated and reaffirmed or it ceases to exist. It's
15 just an idea and there may be other ideas, but somehow
16 I feel the need for all this and while you're going
17 through and doing the specifics is to look at how do
18 we make sure we don't get here again.

19 With that, I'll just offer those comments.

20 MR. BAHADUR: There are some very useful
21 comments that you made, Dr. Croff. One thing I'd like
22 to observe here and it's quite likely that all of you
23 already realized that. Everything the Agency does
24 depends on the resources available for that.

25 Reg. Guides, all of us know that they're

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1 old. A lot of them are old and not used, but to take
2 a Reg. Guide which is 30 years old or 25 years old and
3 simply say it's old and outdated, so let's discard
4 that is not so easy because some of the licensees may
5 still be using that as their license condition.

6 So while we can take the Reg. Guide, we
7 can advance the technology and issue a new Reg. Guide,
8 but to take the old Reg. Guide off the book is like
9 you said, Rome was not built in whatever days. It
10 could not be demolished in so many days either. To
11 demolish a certain thing also takes equally long time.

12 You have to go through the record to see
13 which licensees are actually using it for their Reg.
14 Guide. Where in the inspection procedures have been
15 incorporating those things which are in the so-called
16 outdated Reg. Guides? It's a long and drawn out
17 procedure. I'm not saying it's not important.
18 However, it's termed as housecleaning because it does
19 not melt the core.

20 The first and foremost principle of
21 spending the resources for this Agency is the safety
22 of the nuclear plant, safety of the nuclear facility.
23 Now the second and a close second is the security and
24 then this intent could be housecleaning. When the
25 resources are there, yes, I think it will be an

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1 excellent idea and to that effect the staff went with
2 their proposal to the Commission. Chairman Diaz
3 looked at the proposal and said yes, that's a good
4 idea, take care of all the Reg. Guides, which is what
5 we're doing right now.

6 Taking care alone simply because the
7 Chairman has indicated take care, it doesn't take care
8 by itself. You need the resources to follow that. So
9 we are doing our best. We keep on putting in the
10 office priorities, when the money comes through we
11 start that.

12 The objective of this particular briefing
13 today was to give you the idea that there's a process
14 which is in place, which is going to do all these
15 things, is that a sound process? And I'm hearing some
16 very useful suggestions and we're going to go back
17 there and we're going to tweak our process.

18 CHAIR RYAN: One thing we'll do just as
19 information to give back to you is when we write our
20 letter, we're going to try and produce a spreadsheet
21 that will give every Reg. Guide by title and it's
22 original publication date and if we have specific
23 observations about a Reg. Guide, for example, the
24 examples I gave, it's out of step with the current
25 dosimetry or whatever it might be, we'll offer that

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1 back to you and maybe that will give you some
2 additional insights and patterns that you might back
3 to factor into your planning. You may have thought
4 about already. Maybe it's a different twist with
5 different folks offering you some insight.

6 And again, I think we will take the tact
7 that we sure recognize this is a big job. It wasn't -
8 - I mean you're working away at a problem that's out
9 there, so it's certainly not criticism of what you're
10 doing, but maybe some additional insights that might
11 help you rethink or reevaluate or reprioritize as you
12 go along and start working with your contractors and
13 doing other things like that.

14 Don't take away what we're saying today as
15 criticism of your efforts, but just helping you
16 recognize some of the details of the problem.

17 MR. RIDGELY: I would like to add a couple
18 of points. We keep talking about the fact that the
19 standards' role, the Reg. Guides' role, but a
20 Regulatory Guide is one way that the staff has found
21 acceptable to meet a regulation. So one of our
22 criteria in prioritization is what is in there now
23 unacceptable? Is there a flaw in there that makes it
24 not acceptable and it raises it up.

25 CHAIR RYAN: I think in some of those

1 we're going to answer the question yes.

2 MR. RIDGELY: I'm not arguing that. I'm
3 just saying that just because it's old, it does not
4 necessarily mean that it would be unacceptable today
5 to follow that approach.

6 CHAIR RYAN: Sure.

7 MR. RIDGELY: It may be overly
8 conservative.

9 CHAIR RYAN: And Radiation Warning 7.8.1
10 hasn't changed. That's just fine. All you have to do
11 is say it's been reviewed, it's okay.

12 MR. RIDGELY: And we have already had
13 several discussions about how do we keep ourselves
14 from getting into the same place again where time has
15 elapsed and all the Reg. Guides have aged and no one
16 has looked at them. And we've talked about different
17 approaches that we might be able to take to go back to
18 revisit them to say are they still appropriate, are
19 there new standards out there we should be looking at,
20 but that's not been our focus, but we have been
21 thinking about it.

22 CHAIR RYAN: Right, in our last few
23 minutes let me get comments from Dr. Weiner and Dr.
24 Clarke and go from there.

25 DR. WEINER: I looked at the Division 7

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1 Transportation Reg. Guides and they fall very neatly
2 into three groups. There is a group of Reg. Guides
3 that were issued between 1974 and 1978 and these are
4 very, they're one and one and a half page guides.
5 They generally refer to an ANSI standard. Just coming
6 off of what Sher just said, and what you just said,
7 John, if they're still in use, they may be old.
8 There's no particular problem with keeping them. The
9 suggestion I made is that ANSI standard still current?
10 Is that still current practice?

11 I'd suggest and this would be in a
12 spreadsheet, just looking at those to see if they're
13 still useful.

14 Then there are a couple of Reg. Guides
15 that were issued between 1989, well, one in 1989 and
16 two in 1991. The 1991 ones refer again to an ANSI
17 standard for materials tests, for testing package
18 materials, testing the fracture, resistance of packing
19 materials. And I think that one needs to be looked at
20 for its currency.

21 The 1989 one is again a leak testing one
22 and again, these are -- they're newer, but the
23 question is are they still current? There is a newer
24 Reg. Guide that deals with how you do structural
25 analysis which needs to be updated because we have

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1 computer programs now, finite element analysis is used
2 and it's not even mentioned in the Reg. Guide and
3 certainly that should be updated.

4 The Reg. Guide that is the format and
5 content guide for applying for a license, for package
6 certification, looks to me to be fine. It's a very
7 new one anyway and that's the end of 7. I think
8 working with FSME, and they are in contact with the
9 manufacturers, if the manufacturers still use even the
10 old ones, there's no particular problem, but they
11 should be reviewed for currency, so only that one real
12 update that I could point to.

13 MR. BAHADUR: Thank you for this analysis.
14 We'll definitely use it.

15 DR. CLARKE: I was spared from this
16 analysis, so I don't have any observations.

17 (Laughter.)

18 But I do have a couple of general
19 questions, if I could. In one of your earlier slides
20 that had the status, I think it's page three. It has
21 been mentioned before, this is a monumental effort and
22 we certainly compliment you on it.

23 Phase 4 new. What do you mean by new?
24 Certainly you're not deferring all new Reg. Guides
25 until 2010?

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1 MS. VALENTIN: No, no, no. Phase 4 means
2 any time we've ever communicated with the Commission,
3 there's only been Phase 1, 2, and 3. Phase 4 is a new
4 phase because of the necessity to move some of the
5 Reg. Guides out beyond Phase 3.

6 DR. CLARKE: Okay.

7 MR. RIDGELY: Remember, it's date-driven.
8 The phase number is date-driven.

9 MS. VALENTIN: Right. So anything that
10 couldn't come to us in time to be issued by December
11 2009 is in this new Phase 4.

12 DR. CLARKE: Phase 1 is the high priority
13 Reg. Guides.

14 MS. VALENTIN: Yes.

15 DR. CLARKE: Needed through reactor
16 application review.

17 MS. VALENTIN: Yes.

18 DR. CLARKE: But I can assume that Phases
19 2 and 3 would be other Reg. Guides.

20 MS. VALENTIN: Yes, it goes beyond.

21 DR. CLARKE: How many Reg. Guides are you
22 talking about, looking through all these phases?

23 MS. VALENTIN: There's about 498 Reg.
24 Guides that have to be looked at, dispositioned and
25 assessed in some form or another. Some of those are,

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1 you know, the ones that were identified for
2 withdrawal, but total is approximately 500 Reg.
3 Guides.

4 MR. RIDGELY: I would like to make a
5 clarification. The Phase 1 is focused on new reactor
6 applications. But that does not mean that in Phase 2,
7 3, and 4 they're not equal and applicable. They
8 weren't identified as being most critical, most need
9 for being updated for the new reactors.

10 DR. CLARKE: I understand. Thank you.

11 CHAIR RYAN: Okay, any other questions?

12 MR. WIDMAYER: I have one, Mike.

13 CHAIR RYAN: Yes.

14 MR. WIDMAYER: On your last slide you've
15 talked about, the first bullet talked about the task
16 orders being developed for so-called first group of
17 Reg. Guides. I was wondering what's that referring
18 to? I know we just talked about the phases. I was
19 wondering what is the first group of Reg. Guides?
20 What does that mean?

21 MS. VALENTIN: The first group means the
22 ones that we've identified to go to the contractor
23 first, for example, what we're trying to do to gain
24 efficiency is put Reg. Guides together and task
25 forces. Each has to be competitively bid with two

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1 companies. So we're just drafting task orders as we
2 get requests for contractor support. So whatever
3 first batch is going to go to the contractor, that's
4 what we mean by first group of Reg. Guides. It's not
5 a Phase 1 or a Phase 2.

6 MR. WIDMAYER: What have you used to
7 prioritize this first group of Reg. Guides going --

8 MR. RIDGELY: It's not really prioritize,
9 but it's as we are asked by somebody that they need
10 technical assistance in developing their technical
11 basis. They give us the information they need to give
12 to a contractor. We turn it into a task order and
13 then the process is to go and issue it for bidding.

14 MR. BAHADUR: It's on a need basis.
15 It is on a need basis.

16 MS. VALENTIN: But we do have the option,
17 say somebody comes in later that has a more critical
18 need, we do have the option with the contractors to
19 say okay, we need you to move work up on this
20 particular task order so we do have flexibility.

21 MR. BAHADUR: Perhaps we can talk off
22 line. Before I close, I'd like to give you more news
23 and that's Office of Research is in the process of
24 reorganization and we are going to go back to three
25 divisions starting October 1. It's quite likely next

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1 time you hear about the Reg. Guides I might not be the
2 person to present to you.

3 (Laughter.)

4 It is also likely that when you hear about
5 the Waste Management Research I might not be the
6 person in front of you because I'm very sure my three
7 branches are being scattered into the three divisions.
8 And I do not know where I will be ending. But I
9 really appreciate the support the Advisory Committee
10 has given me for my directorate and I'll see you in
11 the future in some capacity.

12 CHAIR RYAN: You will be around in some
13 fashion I'm sure.

14 MR. BAHADUR: I'm sure. You'll find some
15 ways to get me here.

16 (Laughter.)

17 CHAIR RYAN: Again, just to finish up we
18 are going to write a letter and we will give you the
19 benefit of the individual Guides that we've taken a
20 look at to give you our insights and it's certainly
21 not intended to be critical, but to help the
22 Commission understand what some of these detailed
23 questions might be, particularly with regard to the
24 content and currency and string that a Reg. Guide has
25 to it to all other foundation documents because we

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1 just want to try and identify, as I know you do, where
2 the real priorities need to be to solve those problems
3 for us and then work through the others later on.

4 MS. VALENTIN: We appreciate that, thank
5 you.

6 CHAIR RYAN: Thank you all very much.
7 We'll -- I think our next agenda item is preparation
8 for meeting with the NRC Commission, but I want to
9 suggest that we take a brief 15-minute break here and
10 reconvene at 9:45 for that purpose.

11 (Off the record.)
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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
Nuclear Waste & Materials
182nd Meeting

Docket Number: n/a

Location: Rockville, MD

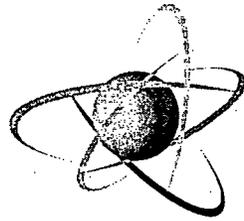
were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.



Charles Morrison
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U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Regulatory Guide Update Program

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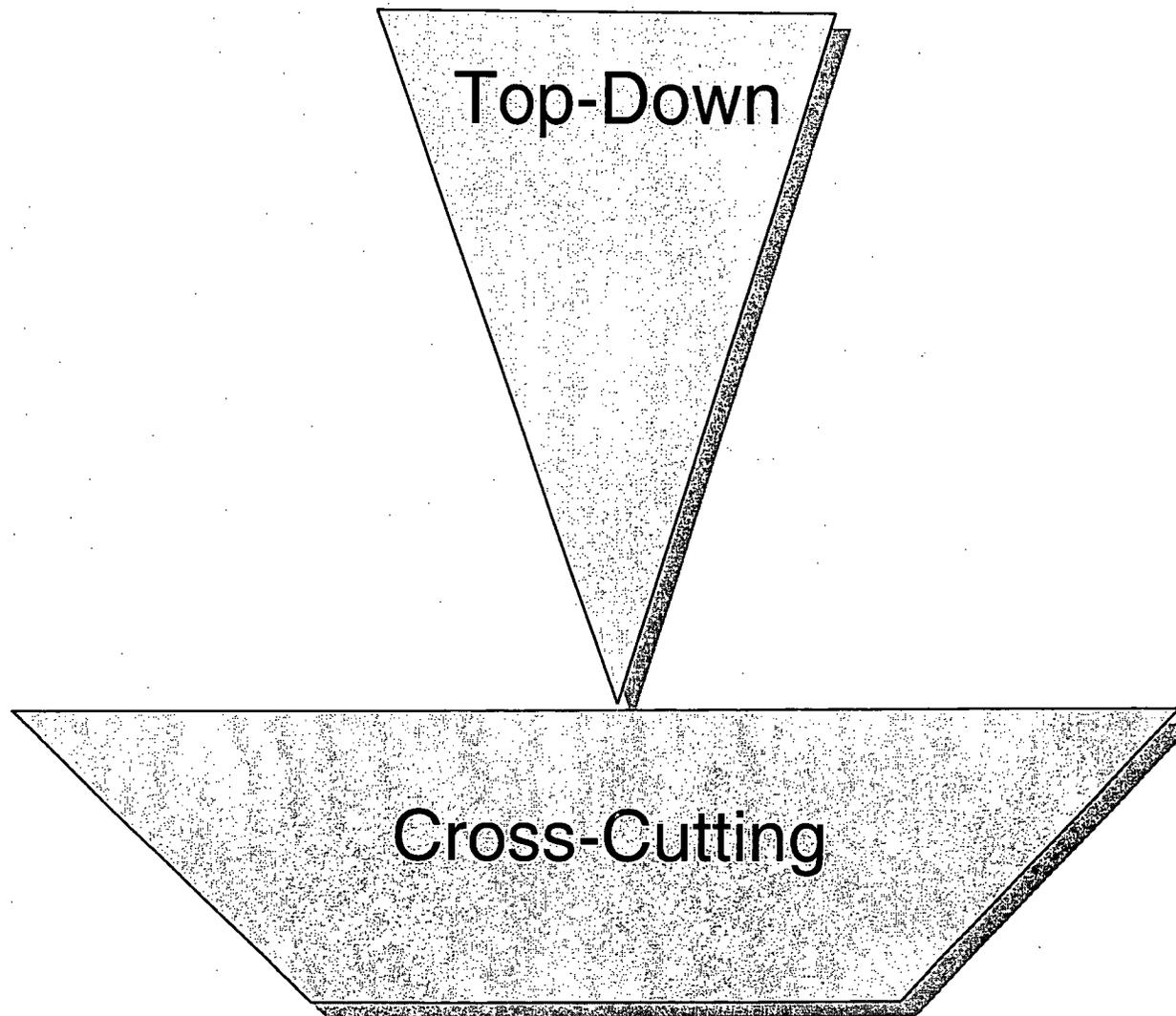
Objective

- Develop, review and update, or withdraw, as necessary, all regulatory guides (RGs) to increase efficiency and effectiveness in licensee interactions with staff

Status

- Phase 1
 - Completed high priority RGs needed for new reactor license applications in March 2007
- Phase 2
 - Developing RGs to be completed by Dec 2008
- Phase 3
 - Developing RGs to be completed by Dec 2009
- Phase 4 (new)
 - Developing RGs to be completed by Dec 2010

Regulatory Guide Selection



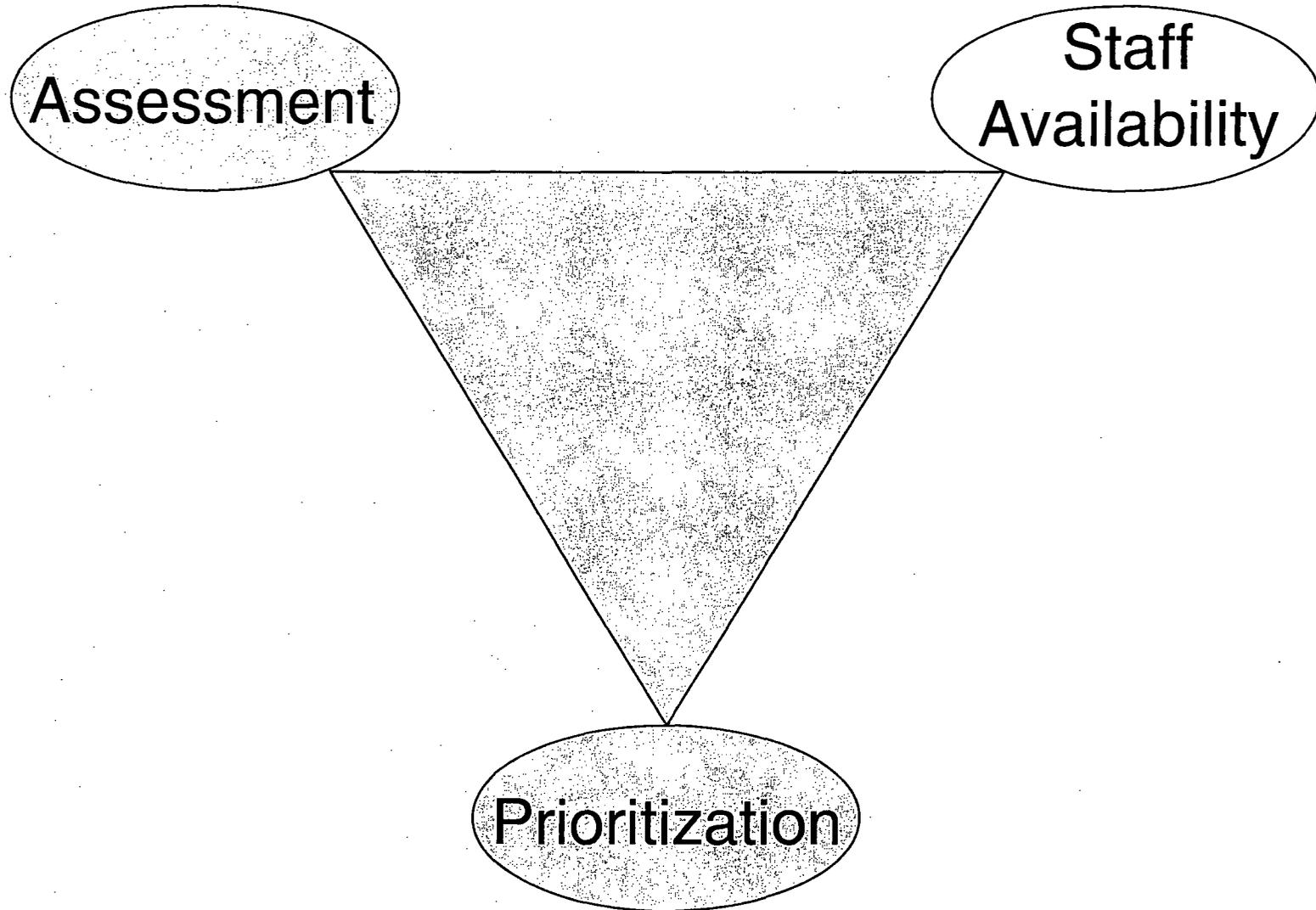
Top-Down (Need)

- **Based on Perceived Need**
 - **New Applications**
 - **Methods/Technology**
 - **Codes and Standards**
 - **Timing**

Cross-Cutting Review

- **Identify Related Regulatory Guides**
 - **Identify those that should be revised at the same time**
 - **Identify inconsistencies**
 - **Identify items for future revision**

Results



Current Activity

- Awarded Commercial Contract and drafted SOW Task Orders for first group of RGs
- Finalizing timing and lead responsibility for RGs
- Obtaining justification for withdrawal on certain RGs and developing FRNs
- Maintaining current status information on the NRC Website