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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

5 + + + + +

6 564th Meeting

7 + + + + +

8 THURSDAY, JULY 9, 2009

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10 ROCKVILLE, MD

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12 The Committee convened in Room T2B3 in the  
13 Headquarters of the Nuclear Regulatory Commission, Two  
14 White Flint North, 11545 Rockville Pike, Rockville,  
15 Maryland, at 8:30 a.m., Dr. Mario Bonaca, Chair,  
16 presiding.

17 COMMITTEE MEMBERS PRESENT:

18 MARIO V. BONACA, Chair

19 SAID ABDEL-KHALIK, Vice Chair

20 J. SAM ARMIJO, Member-At-Large

21 JOHN D. SIEBER

22 SANJOY BANERJEE

23 JOHN W. STETKAR

24 DENNIS C. BLEY

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## 1 COMMITTEE MEMBERS PRESENT:

2 WILLIAM J. SHACK

3 MICHAEL T. RYAN

4 OTTO L. MAYNARD

5 HAROLD B. RAY

6 CHARLES H. BROWN, JR.

7 MICHAEL CORRADINI

8 GEORGE E. APOSTOLAKIS

## 9 NRC STAFF PRESENT:

10 TIMOTHY FRYE

11 EDWARD ROACH, SR.

12 HOSUNG AHN

13 ANDY CAMPBELL

14 MARK KOWAL

15 RICHARD LAURA

16 MICHAEL SPENCER

17 JERRY WILSON

18 JOHN TAPPERT

19 TERRY JACKSON

## 20 ALSO PRESENT:

21 RALPH ANDERSON

22 KIMBERLY KEITHLINE

23 TOM RAY

24 BRUCE MALLETT

25 BARRY BRYANT

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P R O C E E D I N G S

8:28 a.m.

CHAIR BONACA: Good morning. The meeting will now come to order.

This is the second day of the 564th meeting of the Advisory Committee on Reactor Safeguards. During today's meeting, the Committee will consider the following: design certification/combined license Interim Staff Guidance, ISG-006, and Nuclear Energy Institute document NEI 08-08, Revision 1; draft final Regulatory Guide 1.215, Guidance for ITAAC closure under 10 CFR Part 52; quality assessment of selected research projects; subcommittee reports; future ACRS activities/reports of the Planning and Procedures Subcommittee; reconciliation of ACRS comments and recommendations; and preparation of ACRS reports.

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

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

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1 transcript of the meeting will be kept and it is  
2 requested the speakers use the microphones, identify  
3 themselves, and speak with sufficient clarity and  
4 volume so that they can be readily heard.

5 The first item on our agenda is Design  
6 Certification/Combined License and Interim Staff  
7 Guidance, ISG-006, and Nuclear Energy Institute  
8 Document NEI 08-08, Revision 1.

9 And Dr. Ryan will take us through the  
10 presentation.

11 MEMBER RYAN: Thank you, Mr. Chairman and  
12 good morning.

13 The presentations will be led off by Tim  
14 Frye of the NRO staff. We had Ed Roach and Hosung Ahn  
15 from the staff as well and representatives of NEI are  
16 here as well.

17 During the subcommittee meeting on Monday,  
18 we had a thorough review of both of these

19 documents and have arrived at a draft letter and  
20 we'll talk a little bit later on about perhaps one  
21 finding and the recognition of, I think, the very  
22 close cooperation, collaboration, and work to  
23 integrating the Interim Staff Guidance with the NEI  
24 template which will be made available for COL  
25 applicants.

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1           So without further ado, I'll turn over the  
2 presentation to Tim Frye.

3           MR. FRYE: All right, thank you, Dr. Ryan.

4           As Dr. Ryan mentioned, my name is Tim Frye. And I'm  
5 the Health Physics Branch Chief in the Office of New  
6 Reactors.

7           The objective of this briefing is to  
8 provide the Full Committee with an overview and  
9 background on some of the recent work that has been  
10 undertaken by both the Office of New Reactor Staff,  
11 and the industry, to develop and implement tools to  
12 support the review of certified design and combined  
13 license applications for compliance with 20.1406.

14           For the last three years significant  
15 effort has been expended by both the staff and the  
16 industry to understand the intent of the regulation,  
17 develop guidance and to ensure that the regulation is  
18 adequately implemented in new reactor applications.

19           The focus of this discussion, as Dr. Ryan  
20 mentioned, is on two guidance documents in particular,  
21 NEI 08-08 which is an industry-developed template and  
22 Interim Staff Guidance 006 which was developed by the  
23 NRO staff.

24           And during these discussions we want to  
25 explain why these documents were developed, how they

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1 support the industry in preparing DCD and COL  
2 applications and how they support the staff's  
3 licensing review of the new reactor applications.

4 As Dr. Ryan mentioned, we did brief the  
5 subcommittee on Monday, July 6th on these two  
6 documents. And during that brief, there were several  
7 questions and comments that we received and we will  
8 endeavor to address those for the Full Committee's  
9 benefit.

10 Ed Roach and Dr. Hosung Ahn will discuss  
11 the staff review of NEI 08-08 and the purpose and  
12 objectives of Interim Staff Guidance 006. Ed is a  
13 Senior Health Physicist in the Health Physics Branch  
14 and has been the staff lead for the past two plus  
15 years in developing and implementing guidance for  
16 20.1406. And the key part of this work has been  
17 understanding site hydrology. We'll certainly get  
18 into that.

19 Dr. Ahn has worked closely with Ed as one  
20 of the staff's lead hydrologists in developing the  
21 guidance for Site Conceptual Models.

22 While the NRO Health Physics Branch has  
23 had the lead for implementing 20.1406 for new  
24 reactors, we have worked with many other branches  
25 within our office and other program offices quite

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1 extensively to help us develop -- to review NEI 08-08  
2 and develop the Interim Staff Guidance. For example,  
3 we have worked closely with several other NRO tech  
4 branches, Hydrology, Balance-of-Plant, Component  
5 Integrity and our Ventilation branch to help us do our  
6 reviews and develop the guidance.

7 We have worked closely with NRR and FSME  
8 to ensure that the licensing guidance for the new  
9 reactors that we're working on will be consistent with  
10 the programs that have been established and will be  
11 established for the operating fleet. That's just a  
12 very important thing that we do for almost all of our  
13 work, working closely with NRR>

14 And finally, the Office of Research has  
15 been instrumental in working with us to develop and  
16 implement Reg. Guide 4.21 which forms the basis for  
17 the design features and operating programs that can be  
18 used to demonstrate compliance with 20.1406.

19 Next slide.

20 So the next two slides before we get into  
21 some detail discussion are really, as I wanted to  
22 explain why these two documents were developed and  
23 their role in the licensing process. So by way of  
24 introduction and background and overview, 20.1406 is  
25 part of the license termination rule and Subpart E to

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1 10 CFR Part 20. And it applies to all applicants for  
2 a certified design and operating license submitted  
3 after 1997. So that is its applicability.

4 Two significant events occurred about  
5 three years ago that were the catalyst for much of  
6 this guidance development work. The first was the  
7 identification of several significant operating events  
8 at the power reactor operating fleet that resulted in  
9 contamination of the site and the environment and most  
10 notably these were Braidwood and Indian Point. I  
11 imagine most people are familiar with those. But the  
12 identification of these events about three years ago  
13 led to a significant response by both the Agency and  
14 the industry including the conduct of liquid rad  
15 effluent release lessons learned task force and a  
16 subsequent report to look for lessons learned from  
17 these inadvertent spills and leaks and the resulting  
18 contamination to the site and the environment.

19 The second significant event that occurred  
20 about the same time is that we realized that we had  
21 this regulation, but we didn't have any regulatory  
22 guidance on how it should be implemented for new  
23 reactor applications. And that resulted in the great  
24 work that I mentioned earlier by the Office of  
25 Research and the development and implementation in a

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1 very expedited manner of Reg. Guide 4.21 which we  
2 issued in June of 2008. So that was very quick and we  
3 appreciate that.

4 Slide 5.

5 So again, Reg. Guide 4.21 provides  
6 excellent guidance on a methodology for demonstrating  
7 compliance with 20.1406. But we realized early on  
8 that the scope of this work and the scope of review  
9 goes well beyond health physics knowledge and  
10 expertise. We realize that we needed to get the rest  
11 of the office involved in this. So one of the things  
12 that we did as we were developing the Reg. Guide is we  
13 developed and provided a substantial awareness  
14 training for both the rest of the technical staff and  
15 the Office of New Reactors and also our management to  
16 review the regulation, the Reg. Guide and discuss how  
17 each branch should review an application for  
18 compliance with the regulation and using the Reg.  
19 Guide 4.21 for those systems, structures, and  
20 components they were responsible for.

21 We conducted several of these awareness  
22 training sessions over quite a long time and some of  
23 the key feedback that we got back from these sessions  
24 from our NRO staff was that the Reg. Guide was good,  
25 but they needed additional guidance on scope of SSCs

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1 that they should be looking at. And what is an  
2 acceptable level of design feature and operating  
3 program to minimize to the extent possible spills and  
4 leaks to the site and to the environment.

5 And so with that feedback that we got,  
6 that was the reason why we developed ISG-006. That's  
7 the purpose of ISG-006 is to provide that Interim  
8 Staff Guidance on scoping SSCs and providing the best  
9 acceptance criteria that we have right now.

10 Likewise, after Reg. Guide 4.21 was issued  
11 the industry saw a benefit in developing generic  
12 operating program guidance that could be consistently  
13 referenced across all COL applications to provide the  
14 basic high-level program attributes that we need to  
15 see when we're reviewing a COL to have reasonable  
16 assurance that the program will meet the intent. And  
17 so that was the basis for developing this template,  
18 NEI template 08-08.

19 So just to wrap that up in summary, both  
20 NEI 0808 and ISG 006 use a risk-informed approach to  
21 identify those structures, systems, and components  
22 that need to be evaluated and monitored under 20.1406.

23 And again, NEI 08-08 is an industry document that  
24 really describes the operating programs that should be  
25 considered to supplement the design features for each

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1 design. And again, the ISG 006 is a staff document  
2 that's also available to the industry for identifying  
3 what we expect to see in an application and like I  
4 said, the scope of the systems that should be  
5 considered and some of the acceptance criteria.

6 So with that, I'll turn it over to Ed.

7 MR. ROACH: Thank you, Tim. Good morning.

8 It's a pleasure to be here. My name is Ed Roach. As  
9 Tim stated, I'm the Senior Health Physicist in the  
10 Office of New Reactors in the Health Physics Branch.  
11 And what I'd like to do, in our subcommittee, NEI  
12 presented somewhat of an overview of the NEI 08-08  
13 template and then we presented our review findings.  
14 So what I'd like to do is just give a quick overview  
15 of the template itself to make sure we do adequate  
16 justice before we go into the findings.

17 NEI 08-08 proposed a standardized program  
18 to describe how a COL applicant would meet the  
19 guidance of Reg. Guide 4.21 and comply with 10 CFR  
20 20.1406(a); specifically, how the industry intended to  
21 address the regulatory concepts in that document. And  
22 these are related to procedures for operation --

23 MEMBER BROWN: Can I ask a question?

24 MR. ROACH: Sure.

25 MEMBER BROWN: Was there a document?

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1 We've got a lot of plants in service and was there a  
2 similar document that was used earlier?

3 MR. FRYE: Actually, the power reactors  
4 about the groundwater protection initiative to respond  
5 to the industry events which was NEI 07-07 and --

6 MR. ROACH: What I would say it's on the  
7 background slide of this following the lessons learned  
8 task force or in conjunction with that, NEI and the  
9 industry developed the template NEI 07-07 which they  
10 voluntarily complied with.

11 MEMBER BROWN: And that was issued how  
12 long ago?

13 MR. ROACH: That was two years ago, '07.

14 MEMBER BROWN: Let me go back 30 years.  
15 Was there any effort -- I understand from reading a  
16 little bit of the stuff about you desire when you get  
17 a new plant you like to minimize waste. I'm just  
18 wondering what we did and it's been only a year or  
19 two.

20 MR. FRYE: Just a little bit of background  
21 and I'm not the expert in this, but there was a  
22 decommissioning. The genesis of all this is  
23 decommissioning lessons learned and there was a NUREG,  
24 I can't remember the number, that was developed FSME  
25 that collected decommissioning lessons learned and so

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1 --

2 MEMBER BROWN: Okay, so the real answer is  
3 no, back in the early days --

4 MEMBER RYAN: Charlie, I think the summary  
5 of it is that the thinking that's being presented  
6 today has not been ingrained in the planning and  
7 dealing with plants, but in the decommissioning of  
8 plants that has occurred. So let's say in the last  
9 decade --

10 MEMBER BROWN: All right.

11 MEMBER RYAN: -- combined with the tritium  
12 issues had occurred and lessons learned from that  
13 groundwater initiative is sort of culminating in the  
14 guidance that both NEI and the staff have prepared for  
15 really the new plants and existing plants --

16 MEMBER BROWN: Don't make the same  
17 mistakes we did in the old days. I didn't quite get  
18 that out of all the status report and stuff. Thank  
19 you.

20 MR. FRYE: All right, you're welcome.

21 MR. ROACH: To go back to 20.1406 --

22 MEMBER RYAN: We want to go forward, Ed.

23 (Laughter.)

24 MR. ROACH: 20.1406 basically provides who  
25 separate pieces to the regulation; one for standard

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1 designs and one for applicants for licenses including  
2 COLs. So it applies to all applicants for licenses  
3 and standard designs.

4 It is intended to apply to all COLs. NEI  
5 08-08, which is the operating program in site-specific  
6 design features is intended to apply to all the  
7 combined operating licenses, regardless of the  
8 certified design type. It's kind of a program that  
9 gives an overview that gives you aspects to implement  
10 or be consistent with Reg. Guide 4.21 in all aspects.

11 So if your design may have chosen an area where it  
12 isn't as robust, we used that term the other day  
13 probably too much, but if it isn't robust in that area  
14 you could add additional operating features to make  
15 sure that you stayed on top of any potential weak  
16 areas of your plan as far as low-level, low-activity  
17 leakage that could occur for a while before you could  
18 detect it.

19 So the purpose of this program or this  
20 template is to provide a licensing framework for them  
21 to develop program prior to implementing operation  
22 that will allow them to look at the risk-significant  
23 systems, put the monitoring wells in the right  
24 locations and then take advantage of the other systems  
25 and programs at the sites such that they can stay on

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1 top of any possible leakage and find it, prevent it  
2 first of all, detect it quickly, and then mitigate it.

3 That's the overall purpose.

4 The program is intended to be implemented  
5 as one of the milestones under the Radiation  
6 Protection Program for the COL applicants in that  
7 milestone three which is required to be completed  
8 before fuel load. They will have a program in place  
9 that meets all the aspects of this NEI 08-08 program  
10 if it's accepted by the staff when the COL is  
11 completed.

12 That's how it fits into the big picture  
13 and there's various aspects. The aspects of this  
14 document parallel Reg. Guide 4.21 as far as each of  
15 the areas of the regulatory concepts.

16 The one thing I didn't do a very good job  
17 the other in our subcommittee meeting in highlighting  
18 the fact that it is a risk-informed approach because  
19 it depends on identifying the systems, structures, and  
20 components that are most at risk in your plant. You  
21 do an evaluation of those systems, structures, and  
22 components and look at the age, the material  
23 condition, whether you have buried pipes, inaccessible  
24 pipes, and then basically design your program around  
25 that to monitor those on a more frequent basis as

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1 necessary. So it is basically a risk-informed  
2 process.

3 In the staff's review, we conducted  
4 meetings with NEI in a public forum at least eight  
5 times and in the course of this we discussed and  
6 deliberated on the best approach to use for this  
7 template once the industry decided it would like to  
8 submit a template to address the 20.1406 compliance.  
9 And some of the key issues that we ran into were  
10 highlighted on this slide and as we started off on  
11 this process, it was difficult at first but once the  
12 framework of the program was laid out, I think we  
13 identified some very good aspects of that document.

14 Again, the intent was to provide a  
15 generate FSAR description and the template was also  
16 designed to address the site-specific design features  
17 and that was a piece that we had to address because  
18 within the DCD envelope, there will be site-specific  
19 features for systems that interface with the  
20 environment around the site that will need some  
21 aspects of 20.1406 to be considered. An example might  
22 be the waste discharge line. If that's buried all the  
23 way, well, then you can have three feet of the type of  
24 events that we've seen in recent operating experience.

25 So those are the specific site-design features that

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1 fall outside of the DCD.

2 The template describes the overall  
3 operating program to be implemented, but each COL may  
4 focus the attention on the more risk-significant area.

5  
6 MEMBER RYAN: Ed, just a quick  
7 clarification. Some of the other site features I  
8 think you mentioned in the circulated report, are you  
9 on a river, do you have a lake, do you have closed  
10 lake, some other major environmental features of the  
11 individual sites might also have influence on your  
12 thinking in this area.

13 MR. ROACH: Thank you, Dr. Ryan. In the  
14 evaluation of NEI 08-08, there was a staff concern  
15 that the design features would be pushed to the COL  
16 and since much of the DCD work was originally finished  
17 or conceptual designs were done in many cases, but  
18 fundamentally now NRO approached this or Health  
19 Physics approached this, we took two tacks. One, we  
20 went to the DCDs and asked each of the design  
21 certification applicants to describe those features  
22 that they've included in their plants to meet the  
23 requirements of 20.1406 via the Request for Additional  
24 Information process. And then subsequent RAIs were  
25 issued in that process also, depending on the systems

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1 as other things became apparent to us as a concern and  
2 based on operating experience.

3 And then for the operating programs, NEI  
4 approached us on developing this template and trying  
5 to give a standardize program that will again provide  
6 a standardized program and approach for all the new  
7 applicants.

8 In the DCD process, some of those  
9 questions are still going on and being answered by the  
10 applicants and as Tim stated earlier, we've engaged  
11 many of the members of the NRO staff and other areas,  
12 branches, Balance-of-Plant and Hydrology have asked  
13 questions related to 20.1406 compliance, basically  
14 giving a good overview and review in the course of  
15 that process.

16 Finally, our concern was that if the  
17 program was implemented how would it align with the  
18 existing industry voluntary compliance program for  
19 groundwater protection which is again NEI 07-07. And  
20 our key goal was to really address and make sure that  
21 the new reactors going forward had the right program  
22 in place and the focus of how it aligned with 07-07,  
23 our view was we would expect possibly the industry to  
24 have to come back and revise 07-07, if necessary, if  
25 they still chose to do that. But we would have a

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1 licensing basis for a program that would be  
2 implemented for the new reactors that would be  
3 adequate to minimize contamination to site, facility,  
4 and environment.

5 In the template overview, the major  
6 sections include applicability and controls,  
7 minimalization of facility contamination, guides for  
8 minimizing contamination of the environment,  
9 facilitation of decommissioning, and minimizing the  
10 generation of waste. Again, as I said, these sections  
11 are aligned with various sections and regulatory  
12 principles of Reg. Guide 4.21.

13 In the introduction section, one of our  
14 main issues dealt with ensuring we got a consistent  
15 approach in how the technical basis for this program  
16 was documented and committed to or described and the  
17 technical basis for NEI 08-08 is partially NEI 07-07  
18 and an EPRI document, EPRI/TR-1016099 which is  
19 groundwater protection guidelines for nuclear power  
20 plants in a public addition. It's referenced as the  
21 template, as the basis, the technical basis and it is  
22 available in ADAMS. It's a publicly-available  
23 document. And it gives a lot of specific detail on  
24 various aspects of a program to minimize this in a  
25 document.

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1           The staff also is concerned that cost  
2 alone wasn't used in its determining factor in  
3 approaching this. If you have a very small leak close  
4 to the facility it could be years and years before it  
5 actually reaches the point to traverse offsite. The  
6 concept here was as low as reasonably achievable,  
7 similar to ALARA in that you want to catch it as early  
8 as possible, mitigate it, and that way prevent the  
9 expenses either in decommissioning or operation that  
10 fall in with having to deal with a problem like that.

11           So we want to minimize the contamination  
12 and the thought is as we talked about, there is a term  
13 in the document called radiologically significant  
14 which uses the threshold of the Part 20 values. That  
15 is the upper threshold, the target of this, the desire  
16 for this is to minimize. It's an ALARA principle. We  
17 should be down at a very low level.

18           Under the applicability and control  
19 session, we wanted to clarify some comments related to  
20 the NEI template and the application where they would  
21 use it, how it would be used. One of our comments  
22 dealt with -- NEI 07-07 has a communication of offsite  
23 releases and if you follow the event reports that are  
24 reported on the NRC website, periodically you will see  
25 that a certain amount of water containing tritium is

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1 released. It would be notified via the EN process.  
2 So that was a question we discussed. And there's a  
3 note in the document that discusses that. Once NEI  
4 08-08, or the plant becomes operational, plants will  
5 use NEI 07-07 communication requirements to continue  
6 that process.

7 NEI 08-08 also needed to address, and our  
8 feeling was that the other mechanisms for release of  
9 radioactive material, not just groundwater  
10 contamination, in that there have been operating  
11 experience events where radioactive material has been  
12 stored on the site, subsequently degraded and end up  
13 with ground contamination. And so the approach for  
14 this document was to take into account all those  
15 programs that should be looking at the proper  
16 safe control and prevent the release of even low  
17 levels of radioactive material to the environment.

18 MEMBER RAY: When you say release, I  
19 assume you mean unintended or unmonitored --

20 MR. ROACH: Unintended --

21 MEMBER RAY: -- release as opposed to  
22 releases that are monitored.

23 MR. ROACH: Yes, sir.

24 MEMBER RAY: According to the tech specs.

25 MR. FRYE: I'm sorry. For example,

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1 Braidwood started off as a monitored intended release.

2 MEMBER RAY: I'm familiar with that.

3 MR. FRYE: Vacuum breakers failed to open  
4 and then it became an unintended, unmonitored release  
5 to the environment.

6 MR. ROACH: Just to reiterate, that is the  
7 focus --

8 MEMBER RAY: You are using the word  
9 release over and over again, so I assumed you meant --

10 MR. ROACH: Yes, thank you. Unintended,  
11 unplanned to the site.

12 We also -- one of the negotiations or  
13 discussions involved whether the program itself would  
14 involve both initial and periodic evaluations such  
15 that once they assess the systems, structures, and  
16 components, do they go back and reassess it on a  
17 periodic basis to make sure it's taking into account  
18 age, degradation of the systems, changes in hydrology,  
19 or additional structures being built. You have to  
20 assess periodically whether you've increased the risk.

21 In minimizing the facility contamination,  
22 we established some definitions for thresholds,  
23 credible mechanisms, reasonably expected. Discussion  
24 of examples for making an all-inclusive list of  
25 structures, systems, and components in a document.

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1 There are several examples in different locations of  
2 things that were based on operating experience that  
3 we've seen.

4 We also included or recommended the  
5 inclusion of other programs with responsibilities for  
6 safe handling or containment of radioactive materials.

7 Again, those are areas where there have been  
8 examples. We wanted to ensure that in the corrective  
9 action, in the evaluation of these processes, where an  
10 incident did occur, that the applicants, COL  
11 applicants would ensure that an adequate evaluation of  
12 the cause and the extent of condition and material  
13 when it's inadvertently releases is discussed to  
14 prevent reoccurrence.

15 As stated by Tim earlier, we did work  
16 closely with the Hydrology Engineering Unit and in the  
17 area of minimizing contamination of the environment,  
18 there were several hydrology issues. Guidance on the  
19 site conceptual model or CSM, how that would be used.

20 Dr. Ahn will speak up here in a moment, once I cover  
21 these.

22 The use of the term down-gradient, when  
23 locating monitoring wells, in the hydrology world it's  
24 not always that the down-gradient is the way the water  
25 flows, so that recognition had to be made. There may

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1 be hydrology changes through the course of  
2 construction or areas off the site that can affect  
3 you.

4 The meaning of the term site boundary for  
5 contamination analysis and clarifying substantial  
6 changes to the hydrological conditions, in that case,  
7 it will take a professional hydrologist to evaluate  
8 those to make sure whether or not additional actions  
9 or changes in your program are warranted.

10 And then the program implementation  
11 timing, as I spoke earlier, we intend to place the  
12 question to the NEI and the industry as to when this  
13 would best be implemented and since it tends to be a  
14 subset of the Radiation Protection Program, it has  
15 gone to Milestone 3 under the COL which is prior to  
16 fuel load. So monitoring will be in place by that  
17 time.

18 Dr. Ahn, would you like to say anything  
19 about the hydrology comments on those documents?

20 MR. AHN: I would like to mention two  
21 things. First the site boundary, why site boundary is  
22 important on this radionuclide contamination analysis.

23 When we defined the site boundary it's either on site  
24 or off site, how we decided on site or off site is  
25 depending on the site define the area boundary so that

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1 any contamination criteria applied to the site is  
2 outside of the boundary.

3           However, this NEI 08-08 recommended  
4 monitor contamination on site. So that's the addition  
5 of this and that's why we clarify the site boundary.

6           And the other thing, the substantial  
7 change of the hydrologic system is defined under NEI  
8 08-08, page 11. How we decided the substantial change  
9 over the hydrogeology and under NEI 08-08, it  
10 described that substantial change from the structural  
11 changes or changes of the areas that may cross the  
12 hydrogeologic region. So we considered the  
13 substantial change of the groundwater region. So how  
14 we determined the substantial changes, I think we  
15 evaluated the contamination we looked at where is the  
16 pathway and how long it takes to travel the  
17 contamination and what would be the end point  
18 concentration of radionuclides. Among the that, the  
19 most important is where is the contamination pathway  
20 go through. So anything, any change in the pathway  
21 change, we considered that as the substantial change.

22           VICE CHAIR ABDEL-KHALIK: Mr. Roach, I  
23 would like to go back to a comment that you just made  
24 that you intend to go back to NEI to ask for  
25 clarification of some of these terms.

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1 I guess I'm just concerned about the big-  
2 picture process. A reg. guide is an interpretation of  
3 the law. An NEI template is an interpretation of a  
4 reg. guide. And while it provides sort of a standard  
5 method by which applicants can meet the requirements  
6 of the law by meeting or following an approach that's  
7 acceptable in the reg. guide, is there something that  
8 bothers you in this process inasmuch as it sort of  
9 stifles innovation and/or drive toward excellence?

10 MR. FRYE: I'll start that. Yes, I think  
11 the goal of the template is to provide, as we said  
12 earlier, a consistent and generic program description  
13 because by Commission policy there is no programmatic  
14 ITAAC, but the applicant is required to provide a  
15 sufficient description of the operating program so we  
16 can make a reasonable assurance finding and then when  
17 the program is developed people will feel they can go  
18 and inspect it.

19 So the goal, the goal of the template is  
20 to provide the minimum that we're looking for each COL  
21 applicant to provide, to describe the minimum program  
22 attributes that we're looking for. An applicant can  
23 depart from that if they choose to. They're not bound  
24 to follow that, so I'm not sure if I see how it's  
25 restricting innovation.

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1 MR. ROACH: I think one of the aspects of  
2 this template approach, and I don't know if this is  
3 the first template the Committee has reviewed as part  
4 of this or the other templates, there's ones on  
5 training, Radiation Protection Program.

6 I think the concept was in new reactor  
7 licensing space to lay out the generic program. It  
8 doesn't prevent other aspects of it, for instance.  
9 Applicants could also describe supplemental actions  
10 that they would do as part of this program or in  
11 addition to this program. An instance might an  
12 irradiation protection program, use of video cameras  
13 and communication devices to apply to high-radiation  
14 area access control. It's one we've actually seen in  
15 applications.

16 Having said that, they also can go back to  
17 the Regulatory Guide 4.21 and then describe in their  
18 application how they meet it. I think the industry  
19 and maybe NEI can speak to this better is the industry  
20 is taking in new-reactor space more of a standardized  
21 approach so it will, I guess, streamlining the  
22 licensing process as opposed to having many different  
23 variations on a theme.

24 MEMBER BROWN: Which came first, the reg.  
25 guide or NEI 08-08.

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1 MR. ROACH: The Reg. guide.

2 MEMBER BROWN: So the argument then is  
3 that NEI 08-08 patterns itself to provide a way for  
4 the applicant, the licensee to respond to the  
5 requirements, not requirements --

6 MR. ROACH: Guidance.

7 MEMBER BROWN: The guidance of the reg.  
8 guide, the ITAAC then.

9 MEMBER RYAN: Let me address this, if I  
10 may, Charlie.

11 MEMBER BROWN: My point is I was trying to  
12 make the point to Said that if you remember the ITAAC  
13 meeting? There was a template in that NEI document  
14 and that they're kind of similar, although I couldn't  
15 tell the difference between the reg. guide and the  
16 template because I didn't know which came first there.

17 MEMBER RYAN: If you go back to the  
18 regulation 20.1406, I think that's where the grounding  
19 of your question is. This all comes off the  
20 regulation.

21 MEMBER BROWN: Right.

22 MEMBER RYAN: So I think both the template  
23 and the reg. guide are guidance that help the licensee  
24 understand the expectations of the staff.

25 Just, if I may, just let me read part of

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1 this. "The licensee shall describe in the application  
2 how facility design and procedures for operation will  
3 minimize the extent practical contamination of the  
4 facility and the environment, facilitate eventual  
5 decommissioning, and minimize the extent practical of  
6 the generation of radioactive waste."

7 That's a pretty broad requirement and I  
8 think it would be hard without these guidance  
9 documents to structure that in some way. So I just  
10 wanted to give you the thought that the grounding is  
11 in this very short paragraph in 20.1406 by itself and  
12 it's not detailed and analytic. It sets the  
13 requirement without specifying the details. So this  
14 is really needed to get to the detail.

15 MR. CAMPBELL: Mr. Chairman, could I say a  
16 couple of things?

17 I'm Andy Campbell. I'm the Acting Deputy  
18 Director for the Division of Construction, Inspection,  
19 and Operational Programs. And Tim's branch is in the  
20 division.

21 It's very important to keep in mind that  
22 reg. guides, as has already been said, are one way of  
23 meeting our regulatory requirements. And whenever  
24 we're developing reg. guides, we go through a public  
25 process to ensure that stakeholders, and that includes

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1 the industry, NEI, and other members of the public,  
2 can participate in our meetings and in our discussions  
3 and provide comments on these things.

4 It's very important when we do that that  
5 we clarify and understand the language. NEI is  
6 producing this template that will tell their  
7 industrial partners how they can meet these  
8 requirements in the reg. guide guidance and it's  
9 important that during that process, we clearly  
10 understand what they intend by certain things when  
11 they develop their template independently.

12 And it's also important that that language  
13 be understood by everyone. So it's a public process.

14 It is one way of meeting the regulatory requirements  
15 and it's important in that process to have clarity and  
16 understanding of what terms. Otherwise, what you end  
17 up with is industry thinking that certain terminology  
18 may mean one thing and our interpretation of the reg.  
19 guide and the regulation being something else and we  
20 don't want that.

21 MEMBER ARMIJO: To that point, I would  
22 like to ask, get a clarification on a term. You  
23 talked about clarifying substantial change to  
24 hydrological conditions and I may have misheard,  
25 misunderstood, that Dr. Ahn's statement was

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1 substantial change meant any change and I hope that's  
2 wrong. But what do you mean? What does the staff  
3 want to see as the definition of substantial change?

4 MR. AHN: As I mentioned before,  
5 substantial change means if there are pathway changes,  
6 we consider that as a substantial change.

7 MEMBER BLEY: Excuse me. I thought at our  
8 subcommittee meeting we got into a long discussion on  
9 this and the place you folks have ended up is that the  
10 expert advising totally was the one who would define  
11 what's --

12 MR. ROACH: Ultimately, that is where page  
13 11 of the NEI 08-08 template, it describes under  
14 4.1.1(d), establishes the frequency of periodic  
15 reviews for site hydrologic studies. As a minimum,  
16 the review should be performed whenever any of the  
17 following occur: substantial on-site construction,  
18 substantial disturbance of site property, substantial  
19 changes, and onsite or nearby offsite use of water, or  
20 substantial changes in offsite or nearby offsite  
21 pumping rates of groundwater. And then the note is  
22 that substantial changes to the hydrological  
23 conditions are site specific and should be evaluated  
24 by the applicant's professional geologist and  
25 hydrologist.

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1           So there is discussion -- that's what I  
2 was trying to indicate, is that in the course of this  
3 we discussed how to define substantial change in the  
4 course of this document development.

5           MEMBER RYAN: Just as a practical example  
6 from my own experience, if you put a 400-car parking  
7 lot somewhere, you really change at least the surface  
8 hydrology feature that could be substantial and not  
9 actually influence or invalidate monitoring points  
10 that are near.

11           MEMBER ARMIJO: Right, I understand the  
12 direction might change or the rate at which  
13 groundwater moves might change, but I just wondered if  
14 there's something quantitative about it or is it  
15 judgment.

16           MEMBER BLEY: May I bring -- because I was  
17 following this at the meeting the other day. Where  
18 they ended up, and correct me if I say this wrong, is  
19 that they tried to get a firm definition and just  
20 weren't able to agree on it and moved to this position  
21 of the expert with NRC's review, kind of figuring that  
22 as we gain experience in applying this and maybe it  
23 will get better defined. Is that where we stand?

24           MR. ROACH: I believe that's an accurate  
25 depiction of the subcommittee in that we will have

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1 experience from both the operating plants and the new  
2 plants as to how to better define that.

3 MEMBER RYAN: I think one example that  
4 gets Dennis' point is that a change like building a  
5 parking lot in a Eastern wet site might have a very  
6 different impact than a parking lot in a dry, arid  
7 site somewhere else, so I think it's hard to  
8 characterize what sort of changes without, as Dr. Ahn  
9 has pointed out, recognizing what geo-hydrologic  
10 setting it's in.

11 MEMBER ARMIJO: Ultimately gets to expert  
12 judgment.

13 MEMBER RYAN: Expert judgment guided by, I  
14 think, data from the geo-hydrologic environment. The  
15 other aspect to me that's a practical matter here is  
16 if you build a parking lot, you may not get a reaction  
17 from the geo-hydrologic system for years, so that it's  
18 not something you necessarily will see an  
19 instantaneous response for certain kinds of changes,  
20 but others you might see it the next day.

21 So I think the timing of all of this is  
22 part of the frustration of how do you specify that, or  
23 at least that's what I took away from the discussion.

24 MR. AHN: When we did the site  
25 hydrogeologic FSAR, we originally performed an

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1 intensive sensitivity analysis so that what are the  
2 sensitive changes or what are the not sensitive  
3 changes to get some rough idea.

4 MEMBER ARMIJO: Thank you.

5 MR. ANDERSON: Ralph Anderson from NEI. I  
6 just wanted to offer one simple point of  
7 clarification. I'm not sure that it was clear to  
8 everyone. The current version of NEI 08-08 is  
9 Revision 1. All of the things that Ed Roach is  
10 discussing are the comments that were made on Revision  
11 0 that were resolved in Revision 1. So these aren't  
12 new comments against which we're going to make another  
13 change to the document. These are the comments that  
14 caused us to enhance the document between Revision 0  
15 and Revision 1. So what you see in the current one is  
16 where we landed.

17 MEMBER RYAN: Thank you. That's a good  
18 clarification. Appreciate it.

19 MR. ROACH: The last comment on this slide  
20 that I'd like to make is again the purpose of  
21 developing the conceptual site model is to understand  
22 the fate and transport of the potential groundwater  
23 contamination. So it could be used to develop a  
24 monitoring plant that sought detection of mediation of  
25 future events, leaks and spills. Dr. Ahn was

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1 instrumental in helping us redo that and develop that  
2 approach.

3 In NEI 08-08, under the area of review  
4 issues, minimizing the generation of waste, the issues  
5 that we discussed in Rev. 0 implemented in Rev. 1  
6 where the discussions related to the planned large  
7 components being stored on the site, we've had  
8 operating experience with the current fleet where  
9 they've held steam generators that have been replaced  
10 or reactor vessel heads in a mausoleum. The choice  
11 there is plan ahead of time, if you're going to do  
12 that, what that impact is on your site and how you're  
13 going to store that.

14 Another item that we discussed was the  
15 assessment of waste stored on site, where that waste  
16 is stored, if containment of that material breaches,  
17 what can happen to it. Those are things that should  
18 be periodically assessed and the containers inspected  
19 and the site should have a program that addresses that  
20 to minimize the site contamination, as well as  
21 decommissioning costs to impact, if you end up storing  
22 a great deal of waste over the life of the plant and  
23 never dispose of it or volume reduce it, then you can  
24 other issues at decommissioning also.

25 And then the final item that we discussed

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1 in this section of the NEI 08-08 template was the  
2 establishment of a Waste Management Plan. Given the  
3 change in landscape of low-level waste burial and  
4 processing, the applicants should be able to assess  
5 the cost-effective, as well as minimizing the  
6 potential for contamination of the site, by use of a  
7 Waste Management Plan.

8 NEI 08-08 template usage is intended, our  
9 understanding, to provide a program-level description  
10 for COL applicants. It is not intended for DC  
11 applicants to endorse as part of their application.  
12 There is a different set of features that they should  
13 look at. If it's accepted by the staff, the COL  
14 applicants can update their FSAR to incorporate the  
15 program and its milestone and this will establish, as  
16 we said before, a standard approach for procedures for  
17 operation to meet the guidance, Reg. Guide 4.21 or be  
18 consistent with that and meet the regulatory  
19 requirements of 20.1406.

20 MEMBER BROWN: Aren't there any design  
21 cert. issues? It sounds like they're totally left  
22 out. I mean in the design of a plant --

23 MR. FRYE: Let me back up, because that is  
24 another part of the process that we didn't discuss,  
25 but we're certainly happy to discuss it. This

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1 template does not impact the design certifications,  
2 but what we did as we were developing the Reg. Guide  
3 4.21, as we wrote an RAI, because Reg. Guide 4.21  
4 covers design features and operating programs.

5 So as I went through all of that history  
6 of all of the things that we had done, one of the  
7 things that we had done which I hadn't mentioned,  
8 maybe I should have, was that we took the lead to do  
9 the initial review for all the certified designs. And  
10 the problem was that with us starting to develop the  
11 reg. guide three years ago, some DCD applications had  
12 already been submitted and others were going to be  
13 submitted in several months, so there was no way that  
14 they could address a reg. guide that wasn't ready yet.

15 So all these applications had place holders.

16 So we did -- as these applications came  
17 in, we wrote a request for additional information on  
18 all the certified designs, asking them to describe the  
19 design features that they were taking credit for and  
20 in accordance with following the guidance of Reg.  
21 Guide 4.21 and the regulation 20.1406. We're actually  
22 in the process of reviewing those right now, so we are  
23 reviewing the certified designs, reviewing the  
24 responses to those requests for additional  
25 information, using Reg. Guide 4.21 guidance.

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1           And as Ed mentioned earlier, there is a  
2 tie between the design and then the template because  
3 one of the actions in the template is that the COL  
4 applicant for their design, they need to assess the  
5 design features that address, are intended to address  
6 the regulation and then figure out what operating  
7 programs for that design for the COL they should  
8 develop to supplement the design features. So the DCD  
9 review is certainly part of this. It's really just  
10 not -- the ISG is really the document that has been  
11 developed by the staff and we'll get to that in a few  
12 minutes, that is supporting the DCD review. I don't  
13 know if that helps.

14           MEMBER BROWN: Yes. The rule just says  
15 applicants for licenses which seems to be fairly  
16 restrictive, but yet it says "shall describe the  
17 application of how facility design" which I view --

18           MR. FRYE: Right, right.

19           MEMBER BROWN: -- is kind of a big bubble  
20 that covers whatever design they pick up.

21           MR. ROACH: Originally, the regulation  
22 implemented in 1997 had one statement, Rule 20.1406  
23 with revision to Part 52, approximately a year ago.  
24 There's two paragraphs, an (a) and a (a) and (a)  
25 applies to applicants for licenses and describe

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1 operating programs. I think (b) applies to certified  
2 design, standard designs, so they made a cut so that  
3 they're actually two aspects to it. And our RAIs went  
4 to each of the design certification applicants to have  
5 them describe that. And then subsequent COL RAIs have  
6 been issued on various systems that we've had  
7 questions on in the design process. That's on going.

8 MEMBER BROWN: Okay, thank you.

9 MR. ROACH: The summer for NEI 08-08 is  
10 that NEI 08-08 intended to describe the generic FSAR  
11 operating program for COL applicants. We are  
12 currently conducting a safety evaluation with the  
13 intent of completing an SER on the generic FSAR  
14 guidance. If that will be accepted, then ultimately  
15 it will be published along with that and COL  
16 applicants can commit and typically I believe it's  
17 Chapter 1.6 of the FSAR that they will conform with  
18 this guidance document or NEI 08-08. And at a point,  
19 we will verify that program implementation via  
20 construction inspection and the license conditions  
21 where they have established program in accordance with  
22 the milestone.

23 So I guess, Tim, do you want to say  
24 anything else on future actions related to the  
25 implementation of NEI 08-08?

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1 MR. FRYE: I don't think so. I think you  
2 covered it.

3 MR. ROACH: I guess at this point I'd open  
4 it up for any other questions related to this.

5 MEMBER RYAN: Thank you, Ed. I might  
6 start with a comment. I think one thing that caught  
7 the Committee's attention was a definition that was  
8 brought into the template that's from the reg. guide  
9 and I'll read the definition. It defines  
10 radiologically significant generally refers to the  
11 presence of radioactive materials at levels which  
12 could result in radiological exposures and doses in  
13 excess of 10 CFR Part 20 requirements for workers and  
14 members of the public or in excess of liquid in  
15 airborne effluent concentrations and limits to sewers  
16 under Appendix B in Part 20.

17 The subcommittee felt, and is offering to  
18 the Full Committee, a recommendation that that bar is  
19 way too high, that those are, in fact, point of  
20 violation. So a program that's proactive and designed  
21 to mitigate these issues should be at a much lower bar  
22 and we will discuss in the letter-writing session  
23 language that will advise the staff and NEI that we  
24 think that is an inappropriate definition for this  
25 kind of guidance.

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1 I sense that there was some acceptance  
2 that that general notion was certainly recognized as  
3 something where there could be an improvement.

4 It gets back to, I think, Dr. Abdel-  
5 Khalik's comment that you could view this, and I'm  
6 using his words, as the lowest common denominator  
7 which I think I understand that because it's very hard  
8 to give generic guidance for so many different  
9 hydrologic regimes. I mean your strategy, just as an  
10 example, for looking at hydrologic issues, really  
11 depends on am I on a river? Do I have cooling  
12 towards? Am I discharging to the river? What kind of  
13 groundwater scheme do I have? What sort of concrete  
14 and construction do I have? That's what I control.

15 Then there are other facilities being  
16 built around me who are drawing on those same  
17 resources over my lifetime of 40 years and so on. So  
18 it does become a very complex problem and what I take  
19 away from the guidance, having done a bit of this in  
20 my time is this is guidance on what the important  
21 features, events, and processes, not so much of the  
22 plant, but that's important, but of the environment  
23 and the plant as a system is important to keep up  
24 with, to get ahead of things like the Tritium Task  
25 Force issues that came up, for example, so that I'm

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1 identifying, instead of am I going over the dose  
2 limit, am I seeing radioactive material in a place  
3 where I didn't expect it? Am I seeing radionuclides,  
4 specifically, that weren't there before? And some  
5 indicators like that and again, we'll talk about the  
6 specific language.

7 That's my idea to get down to a level  
8 where the guidance is, in essence, proactive to  
9 preventing any kind of dose to anybody that's  
10 significant and to minimize contamination. And again,  
11 all that's in the context of the .1406 requirement  
12 which is minimizing problems at decommission.

13 I hope I've summarized some of that  
14 conversation from the subcommittee in a satisfactory  
15 way. And I invite Dennis or other members to make any  
16 additional comment, but that's where I think we ended  
17 up and other than that, I think the integration of  
18 what the industry understands and implements as their  
19 approach to the regulation and what the staff's  
20 expectations really come together in a pretty good way  
21 through the conversations about some of the elements  
22 of the reg. guide and the guidance. So that's my  
23 comment.

24 MEMBER ARMIJO: Mike, was that  
25 radiologically significant term used or definition

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1 used in the reg. guide or in the NEI 08-08?

2 MEMBER RYAN: It's in NEI 08-08 and the  
3 reg. guide, but it's not in the reg. guide in the same  
4 way. So it slipped a little and how it would be  
5 interpreted in the guidance which is the reg. guide.  
6 Our aim is to make sure that the guidance clarifies  
7 it.

8 MEMBER ARMIJO: I'm surprised that the NEI  
9 document would find that as really a violation, the  
10 threshold is actually the violation --

11 MEMBER RYAN: -- at a violation point.

12  
13 MEMBER ARMIJO: Maybe the NEI  
14 representative can clarify that. I would think you  
15 would set the bar lower --

16 MR. ANDERSON: We do.

17 MEMBER ARMIJO: -- administratively or  
18 something that says hey, this will assure us that  
19 we'll never get into a violation.

20 MR. ANDERSON: First of all, we do in the  
21 document. The difficulty, first, that is not the  
22 criteria for implementing the program. It is used in  
23 one particular section of the document that correlates  
24 to the usage in the regulatory guide. As Mike  
25 mentioned, there's some small differences in wording

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1 between the reg. guide and the template in terms of  
2 what it refers to, but as several people have  
3 mentioned, the template was consciously constructed to  
4 be reflective of the reg. guide and so in terms of  
5 pulling over a definition we felt somewhat obligated  
6 to use the definition that's in the regulatory guide.

7 But if you read the introduction and the  
8 document in its entirety, that reference point is very  
9 narrowly aimed at some very specific things to do with  
10 containment and so forth. It's not the bar for  
11 implementing the program or taking action.

12 What I've gotten from the subcommittee is  
13 that their reading of the document in the reading of  
14 the document, that wasn't clear to them. So that  
15 tells me I need to change the document to make that  
16 more clear because that's not our bar and never has  
17 been.

18 MEMBER ARMIJO: That's why I say --

19 MR. ANDERSON: We are out currently  
20 responding up to and including public notifications to  
21 state officials and the governor when we spill 100  
22 gallons of water that has concentrations that are fit  
23 to drink in a sanitary drinking water system. That's  
24 where our bar is.

25 MEMBER ARMIJO: Sure.

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1 MR. ANDERSON: And that's the bar that's  
2 reflected in here because it directly references NEI  
3 07-07 which is the voluntary initiative that we're  
4 using. It's just that again we had this one issue in  
5 the regulatory guide where it said -- as I see it in  
6 the regulatory guide, it tries to define an area in  
7 which discretion stops and mandatory action kicks in,  
8 not an area in which you begin to take an interest or  
9 take action.

10 MEMBER RYAN: I think you made a good  
11 point, Ralph. With regard to dose, that's probably  
12 true, but with regard to mandatory action, there are  
13 bars well below that.

14 MR. ANDERSON: Right.

15 MEMBER RYAN: As you just pointed out with  
16 certain releases of gallons of water, you have to make  
17 notification. So I think the problem of defining that  
18 as radiologically significant, you bet it is, but  
19 there's a lot of significance below that bar. So I  
20 think the point we're trying to convey and hopefully  
21 the Committee will arrive at the language to do that  
22 is that topic needs to be revisited and clarified so  
23 that people don't misinterpret a dose criteria as the  
24 first point of action in the NEI guidance or in  
25 misinterpreting the reg. guides. So I think we had

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1 pretty good understanding of what we're trying to  
2 reach for that sort of endpoint.

3 MR. ANDERSON: Right. The other thing, if  
4 I may --

5 MEMBER RYAN: Please.

6 MR. ANDERSON: Because I appreciate some  
7 of the questions and comments that were asked. On the  
8 subject of innovation, because that's near and dear to  
9 my heart, you know, this really is an evolving  
10 understanding. The whole subsurface issues that have  
11 come to fore with the events that we've had in the  
12 industry and with implementation of a regulation  
13 that's never been implemented before. I like the way  
14 one person characterized it.

15 It's all intended to say, you know, when  
16 we decommissioned plants in the '90s, a lot of sat  
17 around and said boy, I really wished we had done  
18 things differently 40 years ago. It sure would have  
19 made life a lot easier at the point of  
20 decommissioning. And that's really what the rule is  
21 trying to accomplish. But it's evolving our  
22 understanding of how to utilize the hydrology and how  
23 to utilize the site design, how to implement effective  
24 operations and maintenance programs. You know, it's  
25 still an evolving technology.

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1           So both NEI 08-08 and I believe Reg. Guide  
2           4.21, because there was a tremendous amount of  
3           dialogue and interaction between the industry and the  
4           NRC, intentionally left open that possibility to  
5           continue to innovate, continue to learn, continue to  
6           evolve. For example, if you look in the reg. guide,  
7           there's a whole appendix that's got a list of examples  
8           of things that you could do. In the original version  
9           of the reg. guide that was actually part of the  
10          guidance and it was precisely that kind of comment  
11          that that's going to stifle innovation which is going  
12          to have a checklist. That caused the staff to agree  
13          and move those very clearly into a section of  
14          highlighted examples.

15                 I just wanted to comment on that because  
16          for me that's exactly where we are. We can't have a  
17          static program. What is implemented at the start of  
18          operation of the new plants will probably be looked  
19          back on 40 years later as the Stone Age of  
20          implementation of this requirement.

21                         MEMBER RYAN: Any other questions from  
22          members?

23                         (No response.)

24                         MR. FRYE: ISG.

25                         MR. ROACH: We'll move on to the Interim

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1 Staff Guidance that was developed to provide  
2 additional guidance for -- or actual guidance for the  
3 staff in the review of 20.1406.

4 This initial version was developed based  
5 on the guidance from SRP Section 12.1 which is ALARA  
6 and was originally aligned with the concept of ALARA  
7 in that basically both ALARA and 10 CFR 20.1406 were  
8 performance-based regulations and result defines  
9 success as to minimize as is practicable or as low as  
10 reasonably achievable. So we thought the acceptance  
11 criteria that existed in the SRP were good models for  
12 us to use in a way to characterize minimization of  
13 contamination also.

14 The ISG was also revised based on staff  
15 comments from other NRO technical branches and working  
16 with Balance-of-Plant, Hydrology, Containment branch  
17 to provide a better focus on which systems, structures  
18 and components we were to review. I guess at this  
19 point I'd say that the operating experience can't be  
20 overstated in trying to derive the risk assessment or  
21 the risk-related systems for this type of review and  
22 that the new reactors, even though their designs are  
23 somewhat different in many aspects, there are many  
24 similarities to the existing plants. And so using the  
25 operating experience as Tim spoke of Braidwood, Indian

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1 Point and the other plants, more recently some  
2 involving condensate lines, we constantly mine that  
3 operating experience to look to make sure we're  
4 looking at the right aspects of the design and see if  
5 there are features there.

6 MEMBER RAY: Again, I have a quandary  
7 about what you mean when you use the word over and  
8 over again like risk. Risk of what? I think you mean  
9 it differently than we normally mean risk when we talk  
10 about use of risk in informing what we do.

11 I think you're talking about the risk of  
12 unintended release or something rather than the risk  
13 of --

14 MR. FRYE: It's not core damage. Right.  
15 We're evaluating, take a risk approach to evaluate all  
16 the systems, structures, and components for whether  
17 there's a risk for inadvertent spill or leak and some  
18 of the criteria --

19 MEMBER RAY: Well, risk of inadvertent  
20 spill or leak is something different than what we  
21 normally mean when we talk about risk.

22 MR. FRYE: I agree with that, but you  
23 know, some of the things that we're looking at are  
24 what the system -- what kind of material and the  
25 quantity of radionuclides that the system is carrying.

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1           MEMBER RAY: I understand. But you don't  
2 need to go further. I just think there's a chance of  
3 some unintended miscommunication, that result from  
4 this repetition and emphasis on risk informed as  
5 politically correct as that might be. And that is  
6 that it conveys something that you don't intend to  
7 convey.

8           MEMBER SHACK: ALARA and risk informed are  
9 frequently not consistent.

10          MEMBER RAY: You're conveying something to  
11 a lot of people that I don't think you mean when you  
12 talk about being risk informed. I know it's  
13 politically correct, you want to do it because you  
14 want to be part of the system that endorses everything  
15 that's risk informed must be good. But I mean the  
16 point is that I don't think you mean risk in the way  
17 that people are going to understand or think they  
18 understand what you're talking about.

19          CHAIR BONACA: You don't expect people to  
20 develop a PRA to support --

21          MR. FRYE: No, that's certainly not PRA-  
22 based.

23          MEMBER RAY: Okay, I would be a little  
24 more cautious about using the word.

25          MR. FRYE: Okay, good. Thank you.

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1                   MEMBER RAY: It's really the risk, as you  
2 said, of unmonitored, unintended release is what  
3 you're talking about.

4                   MR. FRYE: Right. Thank you.

5                   MR. ROACH: Having stated that, we  
6 developed the interim staff guidance and published it  
7 for public -- issued it for public comment on May 31st  
8 of 2008. We received no public comments and the  
9 comment period closed on July 31, 2008.

10                   The acceptance criteria as described in  
11 the ISG, Interim Staff Guidance, was that adequate  
12 design  
13 features exist and they're supplemented by operating  
14 programs, reasonable assurance that leaks and spills  
15 will be detected in a timely manner, site has been  
16 adequately characterized and conceptual site models  
17 developed, decommissioning features and their role are  
18 described, site will be operated in a manner to  
19 minimize the generation of radioactive waste during  
20 operation and decommissioning.

21                   Since the reg. guide was issued, Reg.  
22 Guide 4.21 was issued in June of 2008, the SRP  
23 sections, Chapters 11 and 12, they were revised in  
24 March of 2007. They referenced the regulation, but  
25 did not reference the regulatory guidance so that we

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1 developed the implementing guidance later and  
2 additional acceptable criteria was needed for the  
3 staff.

4 The acceptance criteria again is based on  
5 design features and procedures for operation and  
6 consideration during decommissioning.

7 The ISG identifies Reg. Guide 4.21,  
8 regulatory positions, C.1 through C.4, which involve  
9 minimizing the facility contamination, minimizing  
10 contamination to the environment, facilitation of  
11 decontamination, and minimizing the generation of  
12 waste and the subparagraphs under those regulatory  
13 positions, as providing the guidance for compliance  
14 with 10 CFR 20.1406.

15 The references to Reg. Guide 4.210,  
16 Appendix A, as Mr. Anderson of NEI stated, that is a  
17 tool to be used to determine the applicable measures  
18 to consider and if you go to that Appendix A, there's  
19 probably over a hundred different examples of where  
20 design features could be considered to minimize the  
21 occurrence of an inadvertent release of activity.

22 The Interim Staff Guidance revision was  
23 based, the one you see before you now, was based on  
24 the staff comments and questioning the various  
25 structure systems components to review under this. We

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1 received significant feedback from the Balance-of-  
2 Plant and as I said, Containment Branch. The revision  
3 includes now screening approach for systems,  
4 structures, and components and that would be  
5 Attachment A, and a list of operating experience  
6 events, Table 1.

7 That table will not be kept completely up to date  
8 forever, but we do every week, we're reviewing the  
9 operating experience to see if new and different  
10 failure mechanisms have occurred in the existing plant  
11 and then focus that to the right technical reviewers.

12 CHAIR BONACA: Bullet Number 2, again, as  
13 a risk-informed tool, the term applicable measures  
14 considered. Could you give me an example of what  
15 criteria consisted --

16 MR. ROACH: An example of that would be --  
17 I would say that exterior tanks should be located on  
18 or above bermed concrete pads. The berm should have a  
19 capacity sufficiently larger than the maximum tank  
20 volume to accommodate the contents of the tank,  
21 include the contents of related piping in the event of  
22 a system failure. Each pad should be lined or sealed  
23 with an impermeable membrane. Each bermed area should  
24 have provisions for the sampling of released spray  
25 water.

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1           They are examples of the type of design  
2 features that if you have an outside tank, these are  
3 examples of items that will minimize the risk of that  
4 subsequent failure to impact the environment. I  
5 acknowledge our use of risk informed. I may have  
6 created unintended consequences, but there was no  
7 intent that we would do a Core Damage Frequency  
8 assessment or a PRA in this case.

9           MEMBER ARMIJO: Appendix A --

10          CHAIR BONACA: Still, I mean, when you  
11 read that risk-informed you have to jump to a  
12 conclusion that there is risk information. You may  
13 want to reconsider the use of this expression.

14          MR. ROACH: In our awareness training that  
15 we conducted for the NRO staff, we did highlight that  
16 as a point that it did not have the same impact as  
17 risk informed, what it means for reactor safety or  
18 safeguards.

19          CHAIR BONACA: Okay.

20          MR. ROACH: We'll correct that moving  
21 forward.

22          In summary, the ISG 6, Interim Staff  
23 Guidance, provides review, interim guidance to assist  
24 and review design certifications and combined license  
25 applications and the intent we will incorporate this

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1 into near term in Chapter 11 and 12 which are the  
2 chapter we worked on, SRP Chapter 11 and Chapter 12,  
3 and then we will incorporate the appropriate guidance  
4 in the other sections working with the owners of that,  
5 so that we basically incorporate the Interim Staff  
6 Guidance throughout the NUREG-0800 review scheme.

7 MR. FRYE: I think that is it for us. Any  
8 questions?

9 MEMBER RYAN: Any more questions?

10 MEMBER BROWN: Is this table part of the  
11 Interim Staff Guidance?

12 MR. ROACH: The operating experience --

13 MEMBER BROWN: No, this last bullet,  
14 revision, we're talking about revision to something.  
15 It didn't say what, oh, the screening approach.

16 MR. ROACH: Yes, there is. The screening  
17 approach or risk assessment in the table.

18 MEMBER BROWN: And that's part of the ISG?

19 MR. ROACH: Yes.

20 MR. FRYE: Again, the ISG, the intent is  
21 to provide Interim Staff Guidance on scoping, SSCs,  
22 and providing acceptance criteria that eventually we  
23 need to get into the Standard Review Plan where it  
24 belongs.

25 MEMBER RYAN: Are there any other

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1 questions? With that, Mr. Chairman, I'll turn it back  
2 to you.

3 CHAIR BONACA: Thank you.

4 MEMBER RYAN: I would just make a note,  
5 Mr. Chairman, we'll have a letter-writing session  
6 later this afternoon in which we'll take up this  
7 letter.

8 CHAIR BONACA: Yes, I have it as a  
9 priority.

10 MEMBER RYAN: Thank you.

11 CHAIR BONACA: We are 45 minutes ahead of  
12 time and I think we can find Michael Corradini for the  
13 subcommittee report.

14 (Whereupon, the above-entitled matter went  
15 off the record at 9:44 a.m. and resumed at 10:43 a.m.)

16 CHAIR BONACA: Let's get back into  
17 session. The next item on the agenda is Draft Final  
18 Regulatory Guide 1.215, Guidance of ITAAC Closure  
19 under 10 CFR Part 52 and already you've got -- you've  
20 been planning for about five minutes. So with that, I  
21 turn it over.

22 (Off the record comments.)

23 MEMBER BLEY: Thank you, Mr. Chairman. We  
24 had a subcommittee meeting on Tuesday and I'll just  
25 introduce a couple of things about what's going to be

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1 here and what we talked about at that meeting.

2 The inspection and test analysis and  
3 acceptance criteria, or ITAAC, were introduced in 10  
4 CFR 52, and were further clarified in a series of  
5 SECYS that I think all of us have been reading for a  
6 time now.

7 Reg. Guide 1.215 provides guidance for an  
8 acceptable -- for ITAAC closure that endorses the  
9 methodologies described in NEI 08-01.

10 At the subcommittee meetings, staff  
11 provided what I thought was a very nice overview of  
12 the interdisciplinary and open efforts to develop the  
13 reg. guide and it provided some comparison with the  
14 process that occurred under Part 50.

15 They also made a point of the difference  
16 between the ITA part, the inspection test and analysis  
17 methodologies and the AC, the acceptance criteria,  
18 which are the performance, physical conditions or  
19 analysis results that demonstrate that the design  
20 criteria commitment was met.

21 They also pointed out and probably will  
22 dwell on this again, that Region 2 is responsible for  
23 ITAAC-related inspections and headquarters is  
24 responsible for the closure verification. I'm sure --  
25 well, I know this is redundant, a new, pretty copy of

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1 it that they'll discuss the time line for closure  
2 activities and that drew fairly close attention during  
3 the subcommittee meeting.

4 NEI provided a thorough overview of NEI  
5 08-01. They will not be presenting this morning.  
6 Staff will walk us through the NEI document, but some  
7 representatives of that team are here. If we have any  
8 questions, they can address them. And I think they'd  
9 like to make a closing statement at the end.

10 The subcommittee meeting was actually a  
11 little more spirited than I thought it would be. The  
12 bulk of the ITAAC was essentially construction  
13 acceptance tests and inspections to ensure the plant  
14 is built in accordance with the certified design. The  
15 focus of the NEI documents on proper construction of  
16 completion letters and we had a few significant  
17 comments, I think, on this major part of the ITAAC.  
18 Most of the Committee's attention, however, turned to  
19 that subset of ITAAC known as DAC.

20 NEI 08-01 identifies three pathways for  
21 closing DAC. The reg. guide merely refers us back to  
22 the NEI document on these approaches, but they do  
23 state that NRC prefers closure through amendment of  
24 the design certification rule or through COL  
25 application review because these two scenarios would

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1 be completed before the construction begins. There's  
2 no hint that the criteria would be any different and  
3 they wouldn't.

4 Detailed guidance on DAC closure is still  
5 under preparation, but I'm sure the staff will brief  
6 the Full Committee on the key elements that are  
7 anticipated for DAC closure.

8 I'll turn it over to Mark Kowal for his  
9 presentation. Thanks.

10 MR. KOWAL: Good morning. My name is Mark  
11 Kowal and I'm the branch chief of the Technical  
12 Specifications at ITAAC Branch in the Division of  
13 Construction, Inspection, and Operational Programs.  
14 They will be presenting Regulatory Guide 1.215 which  
15 provides guidance on the closure of ITAACs under Part  
16 52.

17 Mr. Rich Laura, who is the ITAAC team  
18 leader will be making the staff presentation today. I  
19 also have Jim Gaslevic at the table who is the primary  
20 author of the regulatory guide and Mike Spencer of OGC  
21 at the table as well. There are also several other  
22 staff members who would participate as needed. This  
23 question has come up.

24 The staff has made significant progress, I  
25 think, in this area over the past two years. We've

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1 had several public meetings and workshops with NEI and  
2 industry and public stakeholders and that effort has  
3 resulted in NEI 08-01. The staff has prepared  
4 Regulatory Guide 1.215 which endorses Revision 3 of  
5 NEI 08-01.

6 We are preparing a Commission paper on  
7 ITAAC maintenance that we plan to send to the  
8 Commission in August, and we will also be sending the  
9 regulatory guide to the Commission in August prior to  
10 issuance. In today's presentation, we are planning to  
11 address the questions and issues that came up during  
12 the subcommittee meeting on Tuesday, many of which  
13 centered around the inspection process for DAC.  
14 Although the process is still under development, we  
15 are going to do our best to present high level  
16 concepts of what we are thinking, but it is under  
17 development.

18 I also want to make a point that the  
19 inspection process for ITAAC and DAC are really beyond  
20 the scope of what was initially intended with this NEI  
21 08-01 guide. It's in the regulatory guide itself.  
22 The main focus on this regulatory guidance is really  
23 on sufficient information which resulted in the  
24 development of the ITAAC closure letter templates that  
25 are in the guidance, more in the documentation of the

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1 closure piece of the ITAAC.

2 The focus wasn't really to document the  
3 inspection process for DAC and ITAAC that the staff  
4 would be using. So I just wanted to be clear on that.

5 MEMBER RAY: And in that regard, since  
6 your comment about it being under development I think  
7 is helpful to all of us. Is there anything we can  
8 look forward to as it's completed, so that we don't  
9 get too far into commenting or quibbling over  
10 something that's still under development.

11 MR. KOWAL: I think one of the things that  
12 was offered at the subcommittee was a separate  
13 briefing on that piece, the inspection.

14 MEMBER BROWN: You mean the DAC part? You  
15 kept talking about inspection. DAC is the word --

16 MEMBER RAY: That's fine. If that's the  
17 case then I'll find it easier for us to refer to that  
18 point in time.

19 MEMBER APOSTOLAKIS: But there is a  
20 broader issue here though. The gentleman from the  
21 staff told us that there would be some reason that  
22 part of the inspection manual, whatever you decide  
23 this process, there was some concerns expressed in the  
24 meeting as to whether, so that part I think is -- how  
25 to do it is, I agree, something for the future, but

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1 whether this is the appropriate way of doing that, of  
2 handling the issue, I would like the Full Committee to  
3 be briefed and maybe we'll discuss it later.

4 MR. KOWAL: I think at a high level --

5 MEMBER APOSTOLAKIS: I just want to  
6 supplement.

7 MR. KOWAL: So I think the staff has  
8 accomplished what we originally set out to do for this  
9 regulatory guide and we feel that it's ready for its  
10 initial issuance. And with that, I'll turn it over to  
11 Rich Laura.

12 MR. LAURA: Okay, thanks, Mark. My name  
13 is Rich Laura.

14 MEMBER APOSTOLAKIS: Mr. Laura, your  
15 papers.

16 MR. LAURA: Sorry.

17 MEMBER APOSTOLAKIS: Apologize to him.

18 (Laughter.)

19 MR. LAURA: I am Rich Laura. I'm the team  
20 leader for ITAAC closure and I think as we talked a  
21 little bit the other day, there's different phases to  
22 ITAAC closure, in general. You know, right now, we're  
23 in the phase of review and planning and then it will  
24 shift later down the road, it will shift to  
25 inspection.

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1           And Region 2, generally leads inspection.  
2           And after the inspection, once all the work is done,  
3           the licensees will submit ITAAC closure letters to  
4           each ITAAC which will -- may occur months later after  
5           the physical work and come into headquarters.  
6           Headquarters will lead that piece of the process and  
7           review those letters and then if they find them  
8           acceptable, close them out, and issue a Federal  
9           Register notice which the next step would be once all  
10          those closure letters received, and all ITAAC are  
11          completed, a recommendation would be made up to the  
12          Commission, the staff believes that all ITAAC are met  
13          and it's the Commission's prerogative to make a  
14          finding to authorize plant authorization which is  
15          loading the initial fuel load.

16                 So it's a long process and we're really  
17          focused here on the very last piece of the closure  
18          letters and we probably weren't as clear as we were  
19          the other day where we were on the process. Joelle is  
20          here. She's the branch chief in charge of inspection  
21          of ITAAC and also of the operational programs and we  
22          have offered -- we mentioned to Dennis, we'd be happy  
23          to come back and do a briefing on the inspection  
24          program including DAC. I think that's the middle  
25          piece where all the questions were coming in.

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1           But today, we're going to get back to the  
2 letters and hopefully present those to you. The  
3 purpose, essentially, what we're after is a standard  
4 approach, you know, if you have different licensees  
5 building plants and you have these letters, we can't  
6 enter into a process that's different for each one.  
7 So the goal is to come up with a common process. We  
8 work closely with industry and NEI and had probably  
9 about 20 workshops over the last two years and we went  
10 through in great detail the closure letters that are  
11 attached in the NEI guide.

12           I think Mark mentioned the other day also  
13 that already we're planning to update one or two items  
14 in the future in the NEI guide. It will be dynamic,  
15 as we further refine some of the issues, particularly  
16 on ITAAC maintenance. That's a hot topic and we're  
17 doing a lot of work and we'll -- the vehicle for that  
18 issue will be through the Commission paper that Mark  
19 mentioned we're going to send up in August to get the  
20 Commission's view on some of those policy  
21 interpretations. And then whatever the outcome of  
22 that is, we'll come back to this guide and issue a  
23 revision.

24           MEMBER BLEY: You might define for the  
25 full Committee what you're talking about by ITAAC

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1 maintenance.

2 MR. LAURA: Sure. ITAAC maintenance is  
3 that once the physical work is completed, let's say on  
4 a pump, and then it resolves an ITAAC, and the  
5 licensee writes an ITAAC closure letter and the staff  
6 receives it, let's say a year later something happens  
7 to that pump and for some reason they have to work on  
8 it, they have to replace it, or they have to modify  
9 it, you enter into a period where they've already told  
10 us on the docket that the ITAAC is complete and now  
11 they're working on it, but you're before the 103(g).  
12 So it's an area where we're trying to set up some  
13 reasonable controls that would allow those activities  
14 to occur in an efficient manner and to do what has to  
15 be done and restore it and be efficient about it, not  
16 have like a letter writing campaign every time you do  
17 one activity that's relatively minor. You have to  
18 tell us on the docket and that would probably get  
19 confusing with the public, because they would see all  
20 those letters.

21 But there is a threshold there that if  
22 they do do something significant, and they do impact  
23 the ITA or the acceptance criteria, we would want to  
24 know about that and we would to update. And so  
25 there's some subjectivity there that we're working

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1 through with NEI and industry and we're making good  
2 progress. We're still not at the end yet, but like I  
3 said, I think the Commission paper will probably be  
4 the first time that we'll be able to provide a high-  
5 level recommendation. And then we're going to --

6 MEMBER MAYNARD: Sounds like you're kind  
7 of talking like a 50.59 type process. Thresholds at  
8 which the licensee can do things without prior  
9 approval or without communication and a subset of  
10 things that would require NRC staff involvement.

11 MR. LAURA: Yes, that's a good analogy.  
12 That's one topic that we know we'll be coming back at  
13 some point and we'll come up with a revision to the  
14 guide.

15 MEMBER APOSTOLAKIS: I think you should  
16 change the language of your first bullet. Sounds like  
17 you were looking for a way to endorse NEI 08-08, and  
18 you found it.

19 (Laughter.)

20 You just endorse it because you think it's  
21 appropriate. Your primary purpose is to promote a  
22 standard that's used as a vehicle to endorse is kind  
23 of --

24 MR. LAURA: Okay, well, we can delete that  
25 bullet.

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1                   MEMBER APOSTOLAKIS: That doesn't strike  
2 me as being proper language.

3                   MR. LAURA: Thank you. Next slide,  
4 please. I'm going to scan through the regulation part  
5 pretty quickly. We covered these the other day, but  
6 52.99 is the regulation that requires the ITAAC  
7 notification letters. And there's a few parts to it.

8                   In the first part, (c)(1), that deals with  
9 completed ITAAC. That's the normal, easy-to-  
10 understand, once the work is physically done, they  
11 send us a letter and way we're done. Then they  
12 describe it in sufficient detail such that a  
13 reasonable person can understand the basis and that's  
14 the whole goal.

15                   So this one is pretty straightforward.  
16 The next slide, please.

17                   MEMBER CORRADINI: The recorder is going  
18 to jump out of his chair.

19                   MEMBER STETKAR: He gets very mean.

20                   MR. LAURA: (c)(2) is a little bit more  
21 interesting than (c)(1); (c)(2) is late in the project  
22 at a certain point which happens to be 225 days before  
23 the projected loading fuel date. There's a  
24 requirement not later than that that the licensee  
25 submit us notifications to the ITAAC that are not

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1 complete, the not complete ITAAC. And essentially  
2 what that does is serve the public by letting them  
3 have the opportunity to see the progress of those  
4 ITAAC, even though they're not completed, so that they  
5 may look at those and if they feel that there's a  
6 problem, they have the opportunity to request some  
7 type of further action through the hearing process.

8 So that's the function of the (c)(2) letter.

9 And it's a little different because in  
10 that letter, you're talking about items that are not  
11 complete, so you're predicting a little bit and you're  
12 saying we believe it will be met because and you're  
13 giving -- maybe you say we did a similar one and we  
14 have approved procedures. We have proper training and  
15 with all that pedigree, there's a confidence that that  
16 will be completed.

17 Now this still beyond that later, once the  
18 physical work is complete for those items, we will  
19 expect that a closure letter would come in closing it  
20 out. So this (c)(2) was something that was developed  
21 primarily for the hearing process. So it's a little  
22 different and we're going to go through some examples  
23 today in the NEI guide, I think, to get back to the  
24 meat of what's in the guide. And we'll see these  
25 letters.

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1 Next slide, please.

2 MEMBER ARMIJO: Let me ask a question. If  
3 you had numerous ITAACs that were in this situation,  
4 and you're just not going to be finished in time. Why  
5 again do you do this? Why wouldn't you say okay,  
6 delay fuel loading? Something isn't being built and  
7 tested and ready to go.

8 MEMBER BLEY: Can I try something on Mike  
9 here, from OGC.

10 The way I think I understood this from our  
11 session the other day is what this does is once you  
12 submit that letter you cannot start up before those  
13 200 and some days have expired to allow the  
14 opportunity for a challenge. Is that right or not  
15 quite right?

16 MR. SPENCER: Yes, that -- even though the  
17 -- I want to clarify one thing. Even though this 225-  
18 day letter is sent in, once they have completed the  
19 work, they'll have to send in a (c)(1) letter which  
20 describes what they did and how they did it. And then  
21 that's what the NRC would be using to determine  
22 whether the ITAAC acceptance criteria are met or not.

23 So even though 225-day letter is sent in,  
24 it's telling what they plan to do, there's going to be  
25 a later letter telling what they did.

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1           The purpose of the 225-day letter is that  
2 there is a notice of hearing that will be issued 180  
3 days before scheduled fuel load and the hearing, the  
4 petitions requesting a hearing are due 120 days before  
5 scheduled fuel load. They can base any intentions on  
6 this 225-day letter. They can say well, the licensing  
7 plant for closing the ITAAC is insufficient and here's  
8 why and give their reasons.

9           The operation will not be allowed until  
10 all ITAAC have been -- until the NRC determines that  
11 all ITAAC are met. There will need to be a  
12 52.99(c)(1) letter for all ITAAC and for the 225 days,  
13 that's right, it will be at least 225 days from the  
14 52.99(c)(1) notification -- (c)(2) -- excuse me.

15           MEMBER SHACK: To answer Sam's question,  
16 there could be an alternative in which you decided you  
17 really couldn't make that fuel loading date. That  
18 would be a different kind of a decision. This one is  
19 when you think you're still going to make that fuel  
20 loading date.

21           MR. SPENCER: Actually, I may have  
22 misstated something and I think Jerry --

23           MR. WILSON: This is Jerry Wilson, Office  
24 of New Reactors. A slight clarification on Mr.  
25 Spencer's point. I don't want the audience to believe

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1 that the 225-day submittal date creates some kind of  
2 an arbitrary limit here. Let's assume, for example,  
3 that the applicant made their proper filing. They're  
4 predicting a fuel load date. There is no hearing. No  
5 one files a credible challenge. The applicant is able  
6 to get their work completed quicker than they  
7 anticipated. They got all their (c)(1) letters filed.

8 The Commission makes its finding that authorization  
9 to load fuel is not limited by the 225. It's defining  
10 that determines when they can load fuel. So it could  
11 go faster than 225.

12 MEMBER STETKAR: Let me ask a question  
13 just for clarification. Is it possible for someone to  
14 challenge the completion of a (c)(1) letter that was  
15 submitted prior to the 225 days in the hearing  
16 process?

17 MR. SPENCER: Yes,

18 MEMBER STETKAR: Is it possible for  
19 someone to challenge the completion of a (c)(1) letter  
20 from something that's been completed after the --  
21 let's say after 120 days?

22 MR. SPENCER: Okay, that would involve  
23 late-filed contentions.

24 MEMBER STETKAR: Okay.

25 MR. SPENCER: That would be a late-filed

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1 contention. The hearing request is due 120 days  
2 before scheduled fuel load or 60 days after the  
3 hearing notice is issued.

4 MEMBER STETKAR: Right.

5 MR. SPENCER: And that has to be based  
6 upon the information available at the time, including  
7 the (c)(2) notifications for the uncompleted ITAAC.  
8 So their contention would be based on that  
9 information.

10 Now there would have to be -- there is an  
11 opportunity under our rules, under the current rules  
12 for late-filed contentions.

13 MEMBER STETKAR: But it would have to come  
14 in --

15 MR. SPENCER: It would have to -- yes, it  
16 would have to meet the criteria for a late-filed  
17 contention, usually like good cause based on new  
18 information. So what new information would there be  
19 under our current regulation?

20 MEMBER STETKAR: Okay, thank you.

21 MEMBER MAYNARD: Something I think you  
22 need to plan for, prepare for, and figure out how  
23 you're going to handle it, you're going to have  
24 situations where not everything is done when somebody  
25 is really going to want to load fuel and it's because

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1 these are very highly integrated programs, plants, and  
2 everything to where it's nice to think of things in a  
3 box and say this ITAAC, and once we get all these  
4 building blocks done, but the fact is there's a lot of  
5 interaction between the things. And you're going to  
6 find some things that may not be able to be totally  
7 completed until after fuel load, until after you've  
8 done some things.

9 I know in the older plants, the  
10 construction is always some open items. Everybody  
11 thought they were going to have everything completely  
12 done, but you found things that you couldn't do until  
13 after you've gone to another step.

14 But I think you just need to anticipate  
15 that and part of it may be in the way the ITAACs are  
16 written and what it takes to close it out, but I'll  
17 almost guarantee, you're going to have a number of  
18 items at the end that we've essentially completed  
19 this, but we can't really do this until that and how  
20 are you going to handle that?

21 MR. LAURA: The ITAAC were constructed in  
22 a very conformed way, that -- if you look at the  
23 acceptance criteria, it's pretty clear and we fully  
24 expect that all those ITAAC and all that acceptance  
25 criteria will be met and are met at the time of the

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1 Commission finding. There will be no exceptions.

2 Now, you know, things occur and at that  
3 point in time if there are issues, those will be dealt  
4 with at that time, but the expectation is, the whole  
5 purpose of the ITAAC was if you verify these one  
6 thousand things, the plant is built as designed and  
7 ready for operation.

8 MEMBER CORRADINI: But I guess what Otto  
9 is saying is there's going to be a punch list. So  
10 either you redefine the acceptance of the punch list  
11 so there is no punch list or -- I mean, there is. I  
12 mean construction is construction. I don't care. I  
13 think that's what he just --

14 MEMBER MAYNARD: Just go back to the  
15 plants that have been licensed before as to what  
16 occurred, and there's always a punchlist there.

17 MR. LAURA: Right, well, one thing under -  
18 - that we're also working on, you know, one of these  
19 evolving issues is the actually 52.103(g) meaning and  
20 what we're looking at is -- up to now we've always  
21 said we're looking for the perfect day. We want  
22 everything to be 100 percent A plus. And now we're  
23 starting to consider as the industry and we get  
24 external feedback, maybe there's some flexibility that  
25 could be used. And right now, we're trying to see if

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1 we can identify criteria that would allow that, that  
2 would be below a certain threshold like you're saying.

3 But that would be something we proposed to the  
4 Commission.

5 MEMBER MAYNARD: And that's all I'm  
6 saying. I think you're going to face those --

7 MR. SPENCER: I just want to clarify.  
8 Even in that situation, all the ITAAC will have to  
9 have been verified to be closed. And so this ITAAC  
10 maintenance issue deals with things where you've  
11 already performed the test. You've verified that the  
12 thing is closed, and you might have some hopefully  
13 minor issue and then the extent to which that is  
14 appropriately handled under licensee programs. And  
15 then there might be, as Rich explained, a significant  
16 threshold for reporting that might impact the  
17 termination.

18 MEMBER BROWN: One other point is there's  
19 probably going to be some ITAACs that are not  
20 necessarily closed because some I is not dotted.

21 MEMBER BLEY: Then we were not as informed  
22 as we thought we were.

23 MEMBER BROWN: Well, no, but his point is  
24 really valid. It has happened to a hundred plant  
25 start ups and there's always -- there is always --

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1                   MEMBER RAY:     We're still in the ivory  
2 tower, guys.   We'll come down later.

3                   MEMBER BROWN:   Right now we're bound -- I  
4 guess my only point to add to this, and I agree with  
5 Harold, it's ivory tower time and you all want  
6 applause, but the point being is there's nothing in  
7 the reg. guide or in the documents that say -- that  
8 I'm aware of right now in these rules that allow for  
9 -- I don't want to call it a waiver, but for an  
10 exception, based on information being provided.   And I  
11 don't know -- maybe it's there and I'm just not aware  
12 of it.

13                   Otto is 100 percent on the mark.

14                   MEMBER BLEY:     I think it's called the  
15 Commission.

16                   MEMBER BROWN:   Pardon?

17                   MEMBER BLEY:     I think it's called the  
18 Commission.

19                   MR. SPENCER:   The ITAAC are in the license  
20 and if you look at 52.99, that explains a process  
21 where if the licensee finds that it cannot meet the  
22 ITAAC because for some reason they can request an  
23 exemption and their license request depending upon  
24 where the ITAAC is located, whether the ITAAC is  
25 simply in the license, like COL-specific ITAAC, or

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1 whether it was also certified as part of a design  
2 certification that that will be a process. If the  
3 licensee properly supports its request and in which it  
4 could potentially modify an ITAAC.

5 MEMBER CORRADINI: So let me just ask a  
6 different question and maybe folks back here -- so  
7 from the standpoint of lessons learned, I'm sure  
8 you've gone back to the hundred and some plants that  
9 are operating and looked at their end stages of  
10 getting a license and identified things that made them  
11 get exceptions and you don't want that, since you want  
12 A plus. So do you actually have a list of things that  
13 you are to look at that could get into this bollocks  
14 that's being brought up.

15 MR. TAPPERT: This is John Tappert. I'm  
16 the Deputy Director of the Division of Construction  
17 and Inspection.

18 We appreciate the Committee's concerns  
19 here and we've been wrestling with that too. And Rich  
20 and Mark earlier referred to this ITAAC maintenance.  
21 And I think that's how we're taking this on.

22 The finding says that all the ITAAC are  
23 met, so all the tests at some point had to have been  
24 completed. And what we're trying to come up with is a  
25 rational approach to deal with the conditions that

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1 you're going to find, an actual, physical plant that  
2 doesn't require a perfect day, that acknowledges the  
3 programs that licensees have and that we have  
4 confidence in that they function properly to allow  
5 that for the Commission to make their finding and move  
6 on.

7 And that's really the subject of a  
8 different paper and will be subsequently appended.

9 MEMBER MAYNARD: I just wanted to -- I  
10 don't think we need to beat it to death. I think we  
11 can move on. I just think it's something I wanted to  
12 bring up.

13 VICE CHAIR ABDEL-KHALIK: Let's just say  
14 that someone writes a (c)(2) letter, 225 days before a  
15 scheduled fuel load and in that letter they specify  
16 how they intend to close the ITAAC and that gives them  
17 time, some time later they will write a (c)(1) letter  
18 saying that they have closed to ITAAC. How closely do  
19 you hold them to whatever they claimed to be the  
20 manner in which they intend to close the ITAAC?

21 MR. LAURA: I think we're not intending to  
22 get the completed letter and then look backwards and  
23 try to hold compliance to that at that point in time.

24 I mean they can't predict, I don't think anyone can  
25 predict the cost of an activity over the next three or

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1 four months.

2 The key for us will be the closure letter  
3 that what did they do, how did they meet the  
4 acceptance criteria, not necessarily all the turns in  
5 the road to get there.

6 VICE CHAIR ABDEL-KHALIK: My concern is  
7 the 180-day notification and the opportunity for the  
8 public to raise concerns about how an ITAAC has been  
9 closed.

10 MR. LAURA: Right.

11 VICE CHAIR ABDEL-KHALIK: If somebody  
12 reads that (c)(2) letter at 225 days and say ah,  
13 that's reasonable, and then you are giving the  
14 applicant the opportunity to deviate from that by  
15 choosing an alternate way to close the ITAAC, which  
16 may not be acceptable to some or a few members of the  
17 public, what recourse do they have?

18 MR. LAURA: Once the completed ITAAC  
19 letter comes in, the staff would have to review it and  
20 issue a Federal Register notice saying we've reviewed  
21 it.

22 VICE CHAIR ABDEL-KHALIK: It may be  
23 acceptable to you.

24 MR. LAURA: Right.

25 MR. SPENCER: Actually, the rules do not

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1 require us to issue Federal Register notices after the  
2 last date for sending in a hearing petition. But in  
3 that case and the case where you had a later  
4 52.99(c)(1) letter that came in after the hearing  
5 period closed, that would have to be dealt with under  
6 the NRC's late-filed contention rules.

7 VICE CHAIR ABDEL-KHALIK: So that would be  
8 the only avenue for people to object to the fact that  
9 the (c)(1) letter is inconsistent with the (c)(2)  
10 letter --

11 MR. SPENCER: It wouldn't be that it was  
12 inconsistent. See, the standards for an admissible  
13 late-filed -- I mean not late-filed, but an admissible  
14 contention at the ITAAC hearing stage have to do with  
15 making a prima facie case that the acceptance criteria  
16 have not been or will not be met and the associated  
17 safety issues with that, that are a result of not  
18 meeting the acceptance criteria.

19 It's not that that is the standard, it  
20 wouldn't be -- they wrote a letter different than the  
21 earlier letter. That's not -- a contention -- a late-  
22 filed contention in that case would be on the later  
23 letter, the second letter which describes what they  
24 actually do.

25 VICE CHAIR ABDEL-KHALIK: I do understand.

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1 It could be a material difference between the (c)(2)  
2 and the (c)(1) which you would find acceptable and yet  
3 others may not.

4 MR. SPENCER: And then late-filed  
5 contention process they could argue that the  
6 difference between the second letter and the first  
7 letter is material and gives them good cause for  
8 filing the late-filed contention and that they take  
9 issue with the differences in the second letter.

10 MEMBER STETKAR: Mike, you mentioned FRN  
11 filings. Does each (c)(1) letter filed before the 225  
12 day or 180 day, whichever, require an FRN notice, a  
13 notice in the Federal Register from the staff that  
14 indeed it was completed and accepted?

15 MR. SPENCER: Under the rules, under 5299,  
16 the staff will periodically issue Federal Register  
17 notices.

18 MEMBER STETKAR: But if I heard you  
19 correct, after the 225 day, there is no notice  
20 required, is that correct?

21 MR. SPENCER: After the 120 day.

22 MEMBER STETKAR: After the 120 day.

23 MR. SPENCER: Because what happened, the  
24 purpose of the notice is essentially public  
25 information and after -- once the period for filing a

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1 hearing petition has -- the deadline has passed, then  
2 the staff is not required to publish Federal Register  
3 notices after that day under the rules.

4 MEMBER STETKAR: I was just curious how a  
5 member of the public would know how a (c)(1) letter  
6 was closed out after 120 days.

7 MR. WILSON: This is Jerry Wilson.  
8 Looking to Mr. Tappert here, but I expect they would  
9 be made publicly available. It's just that we  
10 wouldn't be doing the Federal Register notices.

11 MEMBER STETKAR: Thanks.

12 VICE CHAIR ABDEL-KHALIK: That brings us  
13 back to the issue I raised in a sense that if after  
14 120 days you're not issuing these public notices and  
15 the applicant decides to use an alternate method to  
16 close that ITAAC. People are not going to know about  
17 it, or at least in a --

18 MR. SPENCER: Actually -- well, go ahead.

19 MR. LAURA: The inspection staff at the  
20 site is going to perform inspections and the results  
21 of those will be publicly available and then when we  
22 get the closure piece in headquarters, that's what we  
23 look at is, what were the inspection results, if it  
24 was something that was inspected, you know, was it  
25 okay? Were there findings? If there were, were they

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1 resolved?

2 So there's other pieces of this, other  
3 than just these letters.

4 MR. SPENCER: And I would also --

5 MR. TAPPERT: I would just, we're all  
6 trying to answer the same question, I think, but the  
7 way I would respond was the expectation is that the  
8 licensee is going to execute the plan that's laid out  
9 in the (c)(2) letter. In the event that they don't,  
10 the results will be documented in the (c)(1) closure  
11 letter which is really the basis for the staff  
12 determination as closed. And that's going to be  
13 public document. It's either after 120 days or before  
14 120 days. That will be available to the public and if  
15 it's after the hearing opportunity is over, then I  
16 think that would be a legitimate basis as Mike has  
17 articulated for early filed contentions.

18 So I'm not sure what more we can do other  
19 than that, but we do want to have that transparent  
20 process.

21 MR. SPENCER: And I would emphasize that  
22 the closure letter, it's also the basis for filing  
23 contentions and that the dispute a member of the  
24 public would have would not be with the NRC's review.  
25 It would be with what the licensee did to close out

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1 the ITAAC. And so that is really the source of  
2 information that will be used in their hearing request  
3 or any late-filed contention.

4 MR. LAURA: Okay, thanks. At this point  
5 I'd like to talk a little bit about the NEI Guide,  
6 just show you some of what's in it relative to the  
7 closure letters.

8 If you look at section (d)(1) to the end,  
9 the bulk of the document are 26 closure letters that  
10 were developed in detail and you get a nice index of  
11 the first 19 which are the (c)(1) closure letters.  
12 And some of this came up the other day as to start  
13 talking about sufficient information. We had a good  
14 discussion.

15 And what you see in this list, you know,  
16 there's a range. Each ITAAC is a little different.  
17 Some are very simple, very discrete activities and you  
18 know, could be like the fuel handling machine.  
19 There's an interlock on that on the gripper, whether  
20 or not it can release a load or not. That's something  
21 relatively simple, but that's an ITAAC.

22 Now the closure letter for something like  
23 that would be relatively simple because it doesn't  
24 need a lot of explanation. In fact, that template  
25 here is two pages. We felt that two pages was

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1 sufficient information to explain that it didn't open.

2 Now then there's others that are a little  
3 more involved, a little like a medium level of  
4 complexity and then on the other end there are some  
5 that are fairly complex and widespread. And those  
6 letters, like for example, the seismic Cat 1  
7 structures, that particular letter template that was  
8 developed is 12 pages long, and that gets into a  
9 fairly more level of detail and information that we  
10 would have liked to have seen in the letter.

11 So the goal of these templates isn't to  
12 have one letter for each ITAAC, but to try and  
13 encompass the full spread, from simple to complex that  
14 an applicant could go to these and know generally what  
15 we expected to see for that level of complexity.

16 So and then if you look at (e)(1),  
17 Appendix E, these nine letters are for the (c)(2)  
18 notifications, the incomplete letters which are a  
19 little bit different than the (c)(1) because in here  
20 we're talking about some of it, what was completed,  
21 what's left to be completed, why essentially we  
22 believe we can complete it successfully and you should  
23 have confidence.

24 So those letters are a little different.  
25 We felt they needed their own template. So really,

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1 this is the bulk of the NEI guide are these closure  
2 letters and that's what we worked hard with the  
3 industry to develop and that's what we're here to have  
4 you approve in the reg. guide is that work.

5 MEMBER BROWN: I'm probably not asking the  
6 right question, the sufficiency issue and there was a  
7 good discussion yesterday, Tuesday, and I agreed with  
8 a lot of the stuff that was said. The one disconnect,  
9 this is my thinking after we finish the meeting, and I  
10 didn't have a chance to bring it up, he answered one  
11 of the questions because I asked a specific one about  
12 an ESBWR control function, I think with main steam  
13 isolation valve closures and some alarms and some  
14 warning lights and some stuff like that. And that  
15 there were some criteria that I brought up, oh, those  
16 are addressed in another ITAAC. And then not only  
17 were some of those in another ITAAC, then there was an  
18 integrated system operation test, for instance, you  
19 trigger something and you watch all the pieces, the  
20 valves close, this goes open, a set of heaters come  
21 on, fans go on, whatever pumps start. There are no  
22 pumps in this I realize. Squib valves explode.  
23 That's even better, right -- well, it depends on what  
24 they take with them.

25 And I didn't -- I saw piece/part, as I

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1 thought about that answer, I saw piece/part type  
2 closure letters relative to specifics, but there was  
3 no example of a closure -- I don't think there was. I  
4 did the eyeball scan afterwards -- of an integrated  
5 system -- are there ITAACs? I haven't seen the  
6 description of the ITAACs, have not been presented  
7 clear enough to be -- know whether there's quote for a  
8 safeguards systems. There's an overall integrated  
9 system operation ITAAC that then would have a closure  
10 letter developed for that specific function.

11 MR. LAURA: That's a good question and  
12 what we tried to do when we selected these examples,  
13 as well as industry, they brought examples. We tried  
14 to select some mechanical ones, some electrical, some  
15 I&C, some simple, some complex. You try to get the  
16 gamut, the best we could. There's no way we could try  
17 to encompass all of the ITAACs.

18 MEMBER BROWN: I agree with that. I don't  
19 want to. I'm just -- I didn't see one that involved  
20 an overall integrated system performance test that  
21 would then generate a closure letter to say we have  
22 now tested the GDCS response operation with whatever  
23 the general overall requirements are, demonstrates  
24 that that system works in accordance with the  
25 acceptance criteria that were in the design source or

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1 whatever.

2 I'm not disagreeing. You certainly can't  
3 have a thousand example closure letters. That just  
4 doesn't make any sense, but from a functional  
5 standpoint I thought you should and I just thought  
6 about this afterwards, I thought there should be  
7 something that addressed all the various integrated  
8 functional performance type things that you expect the  
9 safeguards in the protection systems things to  
10 accomplish, if they were actually challenged.

11 MR. LAURA: Well, we do have some systems  
12 --

13 MEMBER BROWN: Yes, but they weren't the  
14 type of systems --

15 MR. LAURA: We can look at that.

16 MEMBER BROWN: All I'm saying is that  
17 somebody ought to be looking at that. I'm not saying  
18 that's -- that's not a show-stopper. I'm just --

19 MR. LAURA: -- maybe we could put out  
20 another example.

21 MEMBER SHACK: Look at (d)(11), Charlie.

22 MEMBER BROWN: (d)(11) is?

23 MEMBER SHACK: Appendix (d)(11), example  
24 of ITAAC closure.

25 MEMBER BROWN: I did look at (d)(11).

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1 That didn't do it for me. That just said some lights  
2 came on and a valve closed. That's all it did. It  
3 was a piece of the overall system and when I asked  
4 relative to that, they said no, there's a higher level  
5 functional test which tests that whole system to make  
6 sure the valves close in the right time, that they do  
7 this, that they respond to all the other functions. I  
8 went back and looked and I did not see an overall  
9 function, for any overall performance aspect, any  
10 safeguards or any protection system or any other  
11 critical system. That's all.

12 MR. LAURA: Okay, that's fair and we'll  
13 look at that --

14 MEMBER BROWN: I don't want a thousand  
15 more examples.

16 MR. LAURA: Okay.

17 MEMBER BLEY: I know you said that the  
18 work on DAC is going on. Does that include the  
19 standard kind of letter you would expect on the DAC  
20 issue or do you consider one of these an example of  
21 the DAC closure letter?

22 MR. LAURA: We would consider it just like  
23 any other ITAAC closure letter.

24 MEMBER BLEY: Okay, thanks.

25 MR. LAURA: Okay, back to the slides.

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1 Essentially, what this slide shows is the level of  
2 detail is written for a reasonable person to be able  
3 to understand the conclusion and the purpose of the  
4 notification is to (1) the NRC staff, but also (2) for  
5 members of the public who could be potential  
6 interveners. So there's that function where we're  
7 trying to stay true to make sure that there's  
8 sufficient information that they could have access to.

9 Next slide, please.

10 This flow chart, for the folks who weren't  
11 here the other day, is a representation of 52.99, the  
12 different reports we just mentioned that lead through  
13 a process all the way to the end to the 52.103(g)  
14 finding. At this meeting I wasn't going to try to go  
15 through this flow chart. We'd be happy to come back  
16 or brief you separately if anyone would like to go  
17 through it, after this point -- is that okay?

18 This is a good flow chart trying to  
19 illustrate how some of it fits together, some of the  
20 regulation, the key regulation and we briefed this to  
21 the public and sent it to the Commission in SECY  
22 papers and then briefed them last October on this as  
23 well. So it's received a fair amount of scrutiny.  
24 It's dynamic. When we find an error, I think the  
25 Committee the other day found a few little things,

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1 errors, and we're going to update and make changes and  
2 we appreciate that feedback.

3 Next slide, please.

4 Essentially, for the closure letters, we looked  
5 at a couple of real ones in the guide, but the general  
6 sections of those letters is this slide. It goes  
7 through here are the different parts that we would  
8 expect for closure letter. This is the general  
9 template.

10 And then the next slide.

11 This is also a template, but it's for the  
12 not complete ITAAC, so in here, it has some different  
13 words, actions remaining to attain closure. So this  
14 letter needed its own template.

15 Next slide, please.

16 Okay, we sent this out for public comment,  
17 the draft guide. We received only a few comments.  
18 Essentially, the one comment that is probably the most  
19 significant we talked about this the other day and it  
20 dealt with a definition of as-built. And that had  
21 some importance because some of the ITAAC used that  
22 terminology and some of the original language in the  
23 DCDs which govern, that's the requirement for the  
24 applicant, what's their definition in their DCD. And  
25 some of that language was very prescriptive and it

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1 inferred that all the inspections would be, once the  
2 component or system was in its final resting point on  
3 the site. And I think their concerns raised with that  
4 that there could be things that are accessible,  
5 largely well, to the manufacturing process or maybe in  
6 some intermediary process like a module-fabrication  
7 facility where they would want to do those  
8 inspections. So there was a lot of discussion on this  
9 point.

10 And essentially where we're at in plain  
11 language, we had like six slides on this the other  
12 day, but I think the bottom line is that there is a  
13 little bit of flexibility that's in there that allows  
14 some activity to occur, not at the site, but maybe at  
15 the vendor facility or the module factory, but it's  
16 generally limited to those cases where you could only  
17 do it there.

18 We didn't provide an open check, a blank  
19 check saying you could do these, whatever you want.  
20 Now NEI presented their opinion. They were more  
21 looking at it from a flexibility standpoint where they  
22 would like to have more flexibility and generally, at  
23 this point the staff is feeling conservative, that we  
24 want to limit that because the ITAAC that were written  
25 originally before the discussions of module

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1 construction, so we're a little reluctant to open the  
2 door too much when the ITAAC were originally written  
3 that generally everything was going to be done on  
4 site. So that's sort of where we fell out. I think  
5 there's a little difference of opinion with the  
6 industry on this and I think you've heard both sides  
7 of the story.

8 Would you like to comment?

9 MS. KEITHLINE: I am Kimberly Keithline  
10 from NEI. Russ Bell could not be here today.

11 I just want to clarify that our concern is  
12 perhaps not so much with wanting the flexibility as it  
13 is with a concern about using a word like impractical  
14 in a definition that would be at a tier one type level  
15 or rulemaking-type language with the word impractical.

16 So we agree with using that language as kind of  
17 further explanation in an explanatory way in our  
18 document, but we're more concerned with how you define  
19 what impractical is if it becomes rural type language.

20 I have one other thing and I may turn it  
21 over to one of the other members of the Task Force,  
22 because I haven't been involved in it quite as long as  
23 they have been. The language that we have in our  
24 definition in NEI 08-1, and I didn't bring it up with  
25 me, but the second sentence in the definition talks

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1 about perhaps measuring things that will not change  
2 after that point in the manufacturing or assembly  
3 process, that having -- that, I guess could be viewed,  
4 that is some additional flexibility that may help get  
5 at the concept of trying to close out DAC earlier in  
6 the construction process and not leaving them toward  
7 the end. And those are just the two points that I  
8 wanted to make.

9 MR. LAURA: Okay, thank you. I think  
10 you've heard both sides on that. We did have an  
11 example in the slides to try to find an ITAAC that we  
12 thought might be a good discussion, so we found one on  
13 the reactor vessel that deals with wall thickness and  
14 at some point they add cladding to the reactor vessel  
15 which would alter the thickness of the vessel, so the  
16 initial measurement of just the original wall, the  
17 vessel would have to be done earlier and maybe it  
18 would be a good thing to do that at the vendor  
19 facility.

20 So that would be an example that  
21 substantiates that you do need to do some of these at  
22 the vendor facility.

23 And then the question becomes well, some  
24 of the other dimensions maybe you could do either  
25 place, you know, like what Kimberly just mentioned,

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1 some of the other dimensions and maybe there's a level  
2 of reasonableness for some of that, but there is a  
3 general staff reluctance to just open the door broadly  
4 to all ITAAC, because again, that would mean the NRC  
5 may not have an opportunity to actually inspect that.

6 MEMBER BLEY: Since you said that, there  
7 was some real interest on the subcommittee's part  
8 about how you do inspections at vendor sites and how  
9 that will be coordinated and how the approval process  
10 would work on those things. Can you talk about that  
11 some for the rest of the Committee?

12 MR. LAURA: Yes, we have a vendor  
13 inspection program. Juan Peralta and John Nakoski are  
14 branch chiefs. And they're also in our division and  
15 right now what's occurring is Region 2 is playing a  
16 very active role in talking and working with schedules  
17 and talking to applicants. I think you'll see some of  
18 that when you visit them soon.

19 And what they are doing is trying to flesh  
20 out what activities are occurring that are related to  
21 ITAAC down the road. And then they're interacting  
22 with headquarters, the vendor branches, and they're  
23 put on as possible targets and decisions are being  
24 made by management as to which ones we should go out  
25 and inspect.

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1 I believe currently we have a team of  
2 people in Japan where they're manufacturing some heavy  
3 components, so there is a lot of effort ongoing, some  
4 close coordination with the Region and we're working  
5 closely with applicants directly. And it's mainly the  
6 region doing that good work. So we're benefitting  
7 from that.

8 We don't necessarily go out and inspect  
9 everything, you know. We can't fly all around the  
10 world and look at each and every ITAAC.

11 MEMBER BROWN: I guess my question  
12 relative to the -- I don't know if this falls into  
13 that category or not or the as-builts, but for  
14 instance, a reactor vessel. It gets manufactured by a  
15 vendor. It's tested. Everybody is looking at it.  
16 You've got tons of paper theoretically that shows that  
17 the roundness of dimensions, the concentricities, the  
18 dings, the marks, everybody's got to get involved in  
19 everything. Then it gets packaged, covered up,  
20 shipped and it gets installed.

21 Now once you do that, you've got welding  
22 going on. You've got other parts being attached, put  
23 in approximation, in proximity to it which have  
24 working going on. I would think, at least based on  
25 our experience, you do do an inspection of things like

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1 that to ensure that something wasn't changed due to  
2 the other manufacturing construction processes that  
3 you have to go through, such that when you bring the  
4 rest of the pieces on to put them on, they fit. The  
5 roundness has changed with activities. Maybe it was  
6 dropped. I don't know how you drop a reactor -- well,  
7 you can drop a reactor vessel I guess, but I mean --  
8 the idea that you can't measure the roundness, for  
9 instance around -- the concentricity of the reactor  
10 vessel to make sure everything is okay and that you  
11 make sure your bolting ring hasn't been damaged  
12 doesn't seem to make a whole lot of sense to me. It  
13 seems to me that would be done on site regardless of  
14 what you did back at the vendor's plant.

15 I don't know whether you go off some place  
16 where you actually do that or whether there is some  
17 other aspect that you're talking about.

18 MR. LAURA: No, there would be other  
19 activity -- you're right. I mean it's not like you  
20 witness one thing and then months later when some  
21 physical activities occur on site, that doesn't mean  
22 there aren't other ITAAC or other inspections at that  
23 point and licensees are going to have to have some  
24 type of receipt inspection and these components will  
25 come with an end-stamp. So that has some value as

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1 well.

2 So I think that you're right. There will  
3 be other activities and it will depend what the  
4 circumstances are.

5 MEMBER BROWN: It's just construction  
6 interfaces like that.

7 MR. LAURA: Right.

8 MEMBER BROWN: It just says I measured  
9 something here and from then on I never look at it  
10 again, but it's got the end stamp on it because  
11 somebody signed off.

12 MR. LAURA: There's very few examples of  
13 this that we -- we had a hard time to even find one.  
14 I don't know if anyone else knows of any, but this  
15 would be a clear one where you're measuring the metal  
16 wall thickness and then subsequently you're adding  
17 cladding to it. So you know, it would seem like that  
18 might be one of the only ones we could find. You're  
19 right, it probably wouldn't be widespread.

20 MEMBER MAYNARD: Charlie, I think one of  
21 the key points is that the inspections are not just  
22 limited to ITAACs. There's construction inspections  
23 going on all the time, too.

24 MEMBER BROWN: I understand. I just don't  
25 know where -- from a -- I just picked fairly critical

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1 components thinking that's not like putting toilets  
2 into the men's room.

3 MEMBER MAYNARD: Right.

4 MEMBER BROWN: I understand.

5 MR. RAY: Rich, if I may help you out with  
6 this. I'm Tom Ray from Westinghouse. The ITAAC he's  
7 talking about is a specific AP-1000 ITAAC. And the  
8 actual measurement that he's talking about is only --  
9 that ITAAC covers make it 12 separate zones two of  
10 them would be done prior to putting the cladding on.  
11 So we're looking at, we'd only actually do the vendor,  
12 just those two measurements at the vendor, because  
13 you've got to do it before you put the cladding on.

14 And then the other ones would be done more  
15 as-built once it's in place. Then you do the rest of  
16 the measurements. So you actually close out the  
17 ITAAC. So one example is is actually not even one  
18 ITAAC, it's a subpart of an ITAAC.

19 Another example that you can use at the  
20 vendor facility and this is one of the ones that the  
21 NRC actually is actually looking at now is there is an  
22 ITAAC for the Charpy V notch test of the vessel  
23 material. Well, that, of course, is going to be done  
24 at the vendor facility. So that type of ITAAC will be  
25 done there and you would not want to do a Charpy V

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1 notch at the site. You just don't have the lab  
2 equipment. You don't have the material. So that's  
3 some of the stuff that would be done at the vendor  
4 facility.

5 Our concern with the wording of the as-  
6 built definition was more along the line of again,  
7 Kimberly said impracticality. If go out and measure  
8 stuff before prior putting cladding on the vendor now,  
9 to me, it's very practical to go out there and measure  
10 it with the calipers if they have the equipment.

11 Ten years down the line someone may say  
12 well, you know what? you can use ultrasonic laser  
13 testing and that's now practical. It may not be  
14 practical for us because we've been doing it with  
15 calipers and everything, so our concern was what's  
16 practical now could be by a certain person or certain  
17 measures later on become impractical and that would be  
18 the concern with putting that definition in Tier 1,  
19 because then to make that change that's rulemaking.

20 MR. LAURA: Okay, thanks. The reg. guide  
21 is meant to look forward. We respect that each DCD  
22 contains the official definition through interactions  
23 with licensees and it will -- that's where it will be  
24 either updated or it will have to be approved by NRC.  
25 So the reg. guide is looking forward, looking at

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1 these different factors and giving what -- one way  
2 that the NRC finds is an acceptable way. It's not  
3 meant to be cast in stone at this point. If you keep  
4 that in mind it's a reg. guide. It's important. It's  
5 what we would propose as one way. So you would have  
6 to convince us maybe through a licensing interaction  
7 of a different approach.

8 Next slide, please.

9 This slides tries to capture some of the  
10 feedback that you gave us the other day and the first  
11 bullet talks just a little bit about prioritization  
12 that targeted ITAAC inspections will encompass all  
13 significant construction activities.

14 The second bullet talks about -- we need  
15 to do a check to make sure -- I think you pointed out  
16 a few cases where we had some terminology issues where  
17 we might have used two different words to talk about  
18 the same thing and those were valid. We're going to  
19 correct those.

20 And also, the third bullet was you had a  
21 few comments in some of the language in the flow  
22 chart, some of the blocks, and we're going to take a  
23 look and make some changes and update this flow chart  
24 as we've done in the past. It's a dynamic process.

25 Next slide, please.

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1 DAC. We were going to talk about DAC at  
2 this point.

3 (Off the record comments.)

4 We had a lot of questions from the  
5 subcommittee on DAC. We really weren't fully prepared  
6 at that time to get into detail. We did try to come  
7 back with some high level, where we're at today and we  
8 invited Terry Jackson who is the branch chief of I&C  
9 to come and help us. We do have an example on the  
10 slides of a real DAC, I&C DAC. But on this slide,  
11 essentially, you know, we said last time DAC is a  
12 subset of ITAAC. We had some discussion, but DAC is a  
13 subset of ITAAC. All DAC will be reviewed and/or  
14 inspected and we choose those words closely because  
15 the first one reviewed would be pre-COL. And post-COL  
16 would be inspected.

17 I think you're looking for some assurance  
18 that all DAC will get looked at and it will. And  
19 right now that's work in progress. We can't point to  
20 --

21 MEMBER BLEY: What we said the other day,  
22 and what some members of the staff said the other day  
23 was not that they'll be looked at, but 100 percent of  
24 the DAC will be reviewed at a level commensurate with  
25 the review given during design certification by

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1 headquarters. That's the kind of "looked at"  
2 anticipating -- and that's what was said.

3 MEMBER BROWN: And even the potential of  
4 an SER or something similar to that to be used to  
5 document.

6 MR. LAURA: Terry's been dealing in this  
7 area. I would have a response, but he may bring some  
8 fresh perspective to it.

9 MR. JACKSON: Terry Jackson. I'm the  
10 branch chief of Instrumentation Controls in the  
11 Electrical Engineering Branch, No. 1, in the Office of  
12 New Reactors. And so Rich asked me to come and talk  
13 about design acceptance criteria because it's  
14 something we've dealt with for some time now.

15 And just to start off, design acceptance  
16 criteria is really only mentioned once in Part 52  
17 where a lot of the guidance and policy for design  
18 acceptance criteria evolves from first SECY paper 92-  
19 053. And then there's a number of SECY papers  
20 involving DAC for particular designs like AP-1000 or  
21 APWR over the years. So I've got a big collection of  
22 those documents and stuff back in my office. But as  
23 Rich said, DAC is really an ITAAC and by the  
24 regulations and by according to policy, the DAC would  
25 be addressed through an inspection process.

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1           Now a licensee may elect to send it in as  
2 a license amendment request or through some other  
3 means like a topical report which would get a Safety  
4 Evaluation Report in that case, but you're not  
5 required to do that.

6           As far as the DAC inspection process,  
7 we're still -- as has been mentioned, we're still  
8 working out some of the details as far as like  
9 inspection procedures and so forth. What we do plan  
10 on doing is that when an applicant notifies that  
11 particular DAC has been accomplished or completed, we  
12 would schedule the inspection.

13           The way we kind of perceive that this  
14 would happen is that Region 2 would provide a lead  
15 inspector. My staff here, they're not qualified  
16 inspectors, so we would need a qualified inspector to  
17 lead the inspection. But my staff here would man the  
18 teams that would go out and do these inspections.

19           And so we would document in the inspection  
20 report the findings and so forth.

21           Now as far as DAC is concerned, there's  
22 supposedly some level of information out there that  
23 may need to be incorporated back into say the final  
24 Safety Analysis Report. And part of the inspection  
25 would verify that actually that through their design

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1 change process, that there's some kind of tracking  
2 commitment to actually update final Safety Analysis  
3 Report as is needed to address --

4 MEMBER RAY: Is it possible there would be  
5 ITAAC that wouldn't be written until the DAC was  
6 closed?

7 MR. JACKSON: No, that's part of the  
8 design certification review is that we would ensure  
9 that if there's part of the design and that's a design  
10 acceptance criteria that ITAAC is included, and ITAAC  
11 say as-built construction ITAAC does not design  
12 acceptance criteria, that that's also included.

13 MEMBER RAY: But your answer remains the  
14 same, no ITAAC would result from the closure of a DAC?

15 MR. JACKSON: That's correct.

16 MR. TAPPERT: No ITAAC -- by definition  
17 the ITAAC where there's necessary and sufficient  
18 things that need to be verified to conform that the  
19 facility is built and construction, design constructed  
20 in accordance with the licensing and the regulations -  
21 -

22 MEMBER RAY: It's just hard to imagine how  
23 you could write all of the ITAAC that are needed until  
24 you know what the closure of a particular DAC might  
25 be. I just ask the question. I got the answer.

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1 MR. TAPPERT: Part of it is a logic cask  
2 getting diagram, because some of the ITAAC or to  
3 verify as-built what was the result of the design  
4 process, so to the extent that that isn't fully  
5 defined, you could maybe make that argument, but the  
6 ITAAC is a document that the time the license is  
7 issued and the full set is available at that time?

8 MEMBER CORRADINI: Can I just clarify what  
9 Harold -- I guess I don't know enough about I&C to  
10 have a specific example, but let's say there's a DAC  
11 about independence, and at this point and the  
12 certification all we're going to get, we think we're  
13 going to get is essentially some logic diagrams that  
14 show how independence might be had and some words that  
15 go along with them. So that's the end of the  
16 certification. It's certified.

17 Now we go into the COL and still nothing  
18 has been designed in detail enough that the COL is  
19 issued and the DAC is still out there. Now we come  
20 along and you're going to start looking at what they  
21 actually have. So you'll take your team from the  
22 region and your team and they go down there and look  
23 at the design.

24 If the way you answered Harold, I guess  
25 I'm interpreting to say is that the DAC has in it, is

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1 general enough that essentially you're going to look  
2 at the design, you might comment on the design, have  
3 questions about the design. The design may change.  
4 It will still remain open until a final design and all  
5 testing is done to your satisfaction.

6 MR. TAPPERT: We would expect that by the  
7 time that they accomplish that ITAAC, that they've  
8 completed it sufficiently -- they've not only  
9 designed, but they've tested it.

10 MEMBER BROWN: Hold it, hold it, stop,  
11 stop. You can't test for independence, okay? You can  
12 perform for data independence, in a software-based I&C  
13 system.

14 MR. TAPPERT: I was using that as a  
15 general --

16 MEMBER BROWN: I'm trying to be more  
17 specific, okay? Now look at DAC -- I'm sorry I'm  
18 getting excited right now. Please tell me to calm  
19 down guys.

20 I've looked through the DAC and I've tried  
21 to apply this thought process to probably one of the  
22 most complex systems for protection and safeguard  
23 systems that we're looking at. This is not a hunk of  
24 pipe. This is not a bunch of wire. This is not a  
25 couple of valves in a line. This is stuff involving

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1 fundamental issues of redundancy, independence,  
2 determinism, and diversity, defense-in-depth type  
3 concepts.

4 And redundancy, you can test for by  
5 looking at it. I've got four of them. But  
6 independence, if you don't have that, you don't have  
7 redundancy. That's based on a detailed understanding  
8 of the knowledge of how they constructed each of those  
9 divisions and how they executed any communications  
10 into or out of those divisions. And the how to they  
11 did that is very critical because if you -- and the  
12 next time I hear somebody telling me I've got a fiber  
13 optic link and therefore I'm independent, that doesn't  
14 give you data isolation. I'm explained that in spades  
15 and you can't do it with an inspector for Region 3 and  
16 you can't do it with tests. Somebody has got to  
17 understand the nuances as you go through a division's  
18 design and how it's generating its protection signals.

19 It's fundamental. And to tell me that I'm going to  
20 have a closure letter that comes in that says yes,  
21 we've completed all of that, it's an ITAAC, we're  
22 going to inspect for it, it's a review. It's a design  
23 review. And it's more than just a checklist.

24 MEMBER CORRADINI: I don't think he's  
25 disagreeing with you.

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1 MR. JACKSON: I don't disagree with you on  
2 that point.

3 MEMBER BROWN: I'm sorry I got excited.  
4 This is dear to my heart.

5 MEMBER CORRADINI: Let me just ask this.  
6 The very fact -- I guess where you're seeing the  
7 uncomfortableness of a lot of us is now we've waited  
8 past the certification. We've waited past the COL  
9 issuance. We probably have waited past the 225-day  
10 letter. I asked that on Tuesday. And here we are and  
11 you look at it and you go, we have some problems with  
12 this.

13 So is the staff at that point going to say  
14 redesign this?

15 MR. LAURA: No, I think it starts much  
16 earlier. Isn't the life cycle -- you have a whole  
17 life cycle and the staff --

18 MEMBER BROWN: When you finish an I&C that  
19 gets delivered from the vendor, that's the point at  
20 which -- this is where the DAC should be closed out.

21 MR. LAURA: They're engaging. They're  
22 starting to engage now and develop plans. It's not  
23 until the letter comes. That's not the case. The  
24 letter is a formality at the very end. It's  
25 important, but it's just like performance-based

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1 inspection, as soon as the information is available,  
2 they're going to review it and it might be in topic  
3 reports or meetings with licensee and they're going to  
4 look at all of those important attributes.

5 I've heard some of the work that your  
6 working group is doing and it's quite detailed.

7 MEMBER RAY: If I could get back to the  
8 question I asked before, you're imaging that you can  
9 write the ITAAC for something that has not yet had  
10 this topical report. It's one way of dealing with it.

11 Hasn't even appeared yet, yet you've written the  
12 ITAAC for it.

13 MR. JACKSON: I think there's a number of  
14 questions that have been thrown out and I want to talk  
15 to one example that's on the slide there because I  
16 think it may help answer some of the questions that  
17 have been posed.

18 So for example, look at the first ITAAC  
19 there. That's dealing with single failure in the  
20 ESBWR. I'm not going to say I'm an expert on the  
21 ESBWR because in my branch we've used Pressurized  
22 Water Reactors, but in this case, when they've  
23 reviewed the ESBWR design they looked at single-  
24 failure potential. And so the applicant addressed  
25 single failure. There was some aspect in there with

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1 regards to single failure and this had to do with  
2 selecting the digital platform. The applicant at this  
3 time did not select the digital platform.

4 By Part 52, they only have to provide  
5 design information up to the point of being able to  
6 develop procurement documents. So they didn't have to  
7 select specific equipment.

8 Now our staff questioned are you going to  
9 make a commitment on how you implement single-failure  
10 protection with regards to data communications. And  
11 we said well, we don't have that design information  
12 yet. And we said okay, that's a design acceptance  
13 criteria. So as to the specific point, it's not like  
14 it's a big hole in the whole design. This is a  
15 specific aspect that the staff said okay, that design  
16 information needs to be provided and addressed.  
17 That's through the design acceptance processor.

18 So when they go and they look at this, we  
19 go in the spec and say, this particular ITAAC, yes, it  
20 is, I think -- there is some design information you  
21 have to review. Now is it -- now for a Safety  
22 Evaluation Report to be written, no, it will be an  
23 inspection report and the design cert. itself, the  
24 FSAR has the information that has a criteria in there  
25 that specifies you're committing to do the single-

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1 failure protection in a certain way. So we inspect  
2 against that criteria. If they don't meet it, then --

3 MEMBER RAY: You've spent a lot of time on  
4 this and I accept the answer which is I can write  
5 ITAAC without knowing what the design is. I'm just  
6 surprised by that, but that's okay. I believe you.

7 MR. JACKSON: If it's a large hole, I  
8 don't think our staff can accept the design cert.  
9 application.

10 MEMBER BLEY: Terry, this could all be a  
11 matter of language and you trying to fit a process  
12 under the language of ITAAC or it could be something  
13 substantially more. When you began you said if it's  
14 an amendment to the design cert. or at the COL stage,  
15 it would get reviewed in the normal way. If it's  
16 after the COL, then your staff would support it and  
17 you'd go out and inspect under a certified inspector.

18 Going out and inspecting -- it's the  
19 language here that's making many of us a little  
20 uncomfortable because it sounds like you go out and  
21 look and say yes, here it is, but when we're really  
22 talking about, in particular, the digital I&C which is  
23 this very large integrated system, the kind of  
24 questioning that you have to do during the design  
25 certs and RAIs, the responses to the RAIs is really

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1 understanding how this thing -- if the detail is not  
2 actually doing what it's supposed to do, how that  
3 might fail doesn't sound like what one means when they  
4 say we'll go out and inspect. That's where we're kind  
5 of hanging up. And if it, go out and inspect and yes,  
6 it's here, and yes, they did a single-failure  
7 analysis. Okay, meet the criteria. We're certainly  
8 not real comfortable with that. If it's something  
9 much closer to the questioning and that process that  
10 we see during the design cert. in the COL, we're  
11 certainly much more comfortable with that.

12 MR. JACKSON: On my staff, we've been  
13 doing, for example, the AP-1000. They've actually  
14 come in with their amendment and they actually have  
15 requested to remove some of the design acceptance  
16 criteria in their ITAAC by providing detailed design  
17 information.

18 So that information though that they're  
19 providing is not necessarily information that would go  
20 back into the FSAR. But what we did is we said okay,  
21 we'll do a series of audits. So all this -- and the  
22 inspections are synonymous and we would go and look at  
23 say for example, requirement specifications. They  
24 have three or four boxes of them on the table and we  
25 would go through and sample a series of these. So

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1 that's the way we would do it if the detail design  
2 were available at the time of the design  
3 certification. But they're not required to provide  
4 that detailed design information after the design  
5 information after the design cert. stage. But during  
6 the inspection stage, we would go and we would do the  
7 same thing.

8 MEMBER BLEY: Is there something  
9 fundamentally different in the look you give it, as  
10 you do this inspection, compared to the look you give  
11 it and the interaction you do when you do a design  
12 certification?

13 MR. JACKSON: No.

14 MEMBER BLEY: So functionally, you're  
15 asking the same kind of questions, getting to the same  
16 level of detail?

17 MR. JACKSON: Yes, we would use the  
18 guidance that we have right now that we're using for  
19 design certs. and COLs and same for --

20 MEMBER BLEY: You're using the actual  
21 guidance that you do use?

22 MR. JACKSON: Right, and we'll probably, a  
23 lot of the guidance that's in there will be  
24 transferred into an inspection procedure and probably  
25 even more detailed.

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1 MR. MALLET: I just want to be careful  
2 that we don't -- I think when you go back and look at  
3 this issue for all situations. I understand, I think  
4 in concept -- John, help me out. The intention is  
5 what you're saying, Terry. I want to go back and take  
6 a look at that for sure.

7 MEMBER APOSTOLAKIS: There will be no ACRS  
8 review.

9 MEMBER BLEY: That's something that we  
10 need -- there's no mandate that ACRS review. Can we  
11 request a review.

12 MEMBER APOSTOLAKIS: We don't review  
13 inspections.

14 MEMBER BLEY: Can we request -- is there  
15 something that keeps us from asking to see this  
16 particular unique kind of inspection?

17 MEMBER CORRADINI: There's nothing that  
18 stops us from asking, but there's no reason the staff  
19 has to respond.

20 MR. JACKSON: I do want to clarify one  
21 thing is that when I talked about -- whether it's  
22 inspection or audit, it's not a complete 100 percent  
23 review of that information that the auditor inspects  
24 in stage. So we don't do --

25 MEMBER BLEY: That's what you do at the

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1 design cert. stage too.

2 MEMBER BROWN: You can't do a design cert.  
3 You can't sample review the design data. It's not  
4 acceptable.

5 MR. JACKSON: At the design cert. design  
6 stage, the applicant provides a final Safety Analysis  
7 Report and there's a level of detail in there. It's  
8 not a detail level in the FSAR. So we review that and  
9 we audit additional information.

10 And when you go and you do an audit or  
11 inspection, for example, as I mentioned, if we do  
12 inspect or audit requirement specifications for a new  
13 plant, there are probably over 10,000 requirement  
14 specifications there.

15 For my staff to go through and do 100  
16 percent review of the detailed requirement  
17 specifications would take months on end. We don't  
18 have that kind of money. We always sample to verify  
19 because they should have processes in place, should  
20 have their verification validation and quality  
21 assurance that is 100 percent. We're reviewing --  
22 we're verifying that their processes work there and in  
23 place.

24 MEMBER APOSTOLAKIS: We have been told 100  
25 percent of the DAC will be reviewed. Is there a

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1 provision that after this process is completed the  
2 staff will come to the ACRS and present how the DAC  
3 will close?

4 That might be a way of alleviating a lot  
5 of these concerns because we can look at them. We  
6 don't have to look at all of them, but then we can ask  
7 questions and then I would be much more comfortable  
8 with the process. And maybe what you're saying,  
9 Terry, is perfectly okay. Maybe you will do  
10 everything that we believe ought to be done, but I  
11 would feel much better if there were formal meeting  
12 with some documents in our hands.

13 I'm not sure such a provision exists right  
14 now, unless I missed.

15 MEMBER BLEY: I'm told it doesn't and I've  
16 not been able to find it.

17 MEMBER APOSTOLAKIS: That it does or  
18 doesn't?

19 MEMBER BLEY: I've been told it does not  
20 exist.

21 MR. TAPPERT: This is John Tappert again.  
22 I think fundamentally, the concept is that at the  
23 design cert. at the COL the requirements are  
24 sufficiently well defined for us to make our safety  
25 finding. That's the whole construct behind that tack.

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1 And this just an inspection to verify that what was  
2 committed to in those documents is actually performed.

3 MEMBER RAY: We don't have a problem with  
4 ITAAC as it's normally understood. We're really just  
5 focusing on DAC.

6 MEMBER BLEY: And if one reads those SECYS  
7 that Terry spoke up, the idea that first emerged was  
8 that these would be small pieces of things that could  
9 be checked fairly easily, but as it's rolled into the  
10 digital INC which has become much more integrated  
11 perhaps and people thought 20 years this is a big hunk  
12 of the design setting here that's -- in the normal  
13 process becomes design --

14 MR. TAPPERT: So I'm sure we're going to  
15 be able to provide you the state of our thinking.  
16 We're working through this. We haven't finalized any  
17 of these approaches necessarily at this point. And  
18 certainly I think we understand the Committee's  
19 concern and interest in this area and so we'll commit  
20 to coming back at a future meeting and providing  
21 perhaps a more comprehensive approach to how we're  
22 doing this.

23 MEMBER BLEY: And perhaps walking through  
24 what you're actually doing and --

25 MEMBER APOSTOLAKIS: I'm sorry, go ahead.

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1           MEMBER BROWN:       I want to make one  
2 observation. If you don't have as part of granting a  
3 design certification for us, I'm looking at us, you  
4 have to have a confidence that the functional design  
5 that's provided to us, the level of detail that we get  
6 and I don't mean the platform specific. I don't mean  
7 what process you use. I don't mean what resistors,  
8 transistors or anything else you use. The fundamental  
9 methodology you use to develop input to output trigger  
10 stuff and the communication protocols functionally or  
11 lack of those protocols between divisions can be  
12 defined. It's independent of technology. You don't  
13 care what -- I don't care whether it's a MELTAC,  
14 whether it's an AREVA, whether it's a TELEPERM --  
15 TELEPERM is AREVA -- or whatever other platform,  
16 TRICON, whatever you want to use. NUMAC, it doesn't  
17 matter.

18                       Tuesday, we sat down, as a result of our  
19 conversations on ESBWR, INC, back in December we  
20 raised the issue, a single one or multiples, but we  
21 talked about independence. And the staff sat down  
22 with them and they showed some additional expansion,  
23 not expansion, more detailed functional diagrams. And  
24 in the process of about a half an hour discussion it  
25 became obvious that based on what they provided in

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1 there, data isolation was not independent.

2 It didn't matter what the technical issue  
3 was. Made no difference at all. Now they're off to  
4 try to figure out how do they talk -- if you don't  
5 start off with a functional design that has the  
6 independence in it that you can see, then all the  
7 inspections in DAC you do are worthless. They don't  
8 count.

9 So my fundamental thrust with my comment  
10 is two-fold. One is to ensure that we have a  
11 sufficient delineation of the design functionally, and  
12 this is a block diagram level, because it doesn't  
13 matter what the technology is, that we can then use  
14 subsequently to develop DAC to show that.

15 But independence and a few other things  
16 require, require that function design to be  
17 satisfactory and I'm going to stop there.

18 MEMBER BLEY: I think that's a good place  
19 to stop. We don't need to go into any more detail.

20 George, did you --

21 MEMBER APOSTOLAKIS: No, I was going to  
22 say we can talk about it later.

23 (Simultaneous speakers.)

24 MEMBER BROWN: Yes, don't take that as a  
25 negative.

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1 MR. LAURA: We are essentially done. The  
2 key points is a summary slide to review where we're  
3 at. We feel we've accomplished what we were tasked  
4 with early on and that the reg. guide is ready for  
5 issuance. It's relative to the ITAAC closure letter,  
6 the notification letters, the not complete letters and  
7 we have the 26 templates. That's the bulk of the reg.  
8 guide and we're very comfortable with that.

9 We're going to hopefully send this up to  
10 the Commission. They were interested in seeing the  
11 reg. guide and probably the NEI guide that goes along  
12 with it. We talked about it a little bit at the last  
13 Commission briefing in October and that's why we're  
14 here presenting it to you.

15 So I just want to thank everybody. Your  
16 questions were very good and we're going to take back  
17 and make some, the corrections that you raised and  
18 that's all.

19 MEMBER BLEY: Okay, any other questions  
20 from members?

21 Thank you very much. Thanks for the  
22 presentations. I'm sorry, NEI wants to say a few  
23 words at the end.

24 MR. BRYANT: I'm Barry Bryant. I work for  
25 Dominion and I'm a member of the NEI team that

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1 developed NEI 08-01. I'm filling in for Russ Bell  
2 today and just wanted to kind of summarize the  
3 industry's thoughts.

4 First of all, I want to say NEI 08-01 in  
5 its endorsement through the reg. guide are very  
6 important to the industry. We believe that these  
7 documents will provide a good standardized process  
8 that will make the closure of some 800 to a 1000  
9 ITAACs reach new plants in a much more effective and  
10 efficient process. So these are very important  
11 documents.

12 As Rich has stated earlier, the industry  
13 and NRC have worked for many months now through a  
14 series of public meetings and workshops to develop  
15 these documents and a lot of progress has been made  
16 certainly from the beginning and we believe the effort  
17 has resulted in practical, workable documents that do  
18 adhere closely to the regulations.

19 The industry encourages NRC to incorporate  
20 NEI's comments on Reg. Guide 1.215 and especially the  
21 comment on the definition of as-built. We do not  
22 agree with the staff's proposal to expand the  
23 definition of the as-built to include the explanatory  
24 language that is contained in NEI 08-01, Section 3.1.4  
25 and I don't want to belabor that. You've already

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1 heard some additional details and discussion on that.

2 We do suggest that the industry and NRC  
3 work quickly together to find a suitable alternative  
4 and one of those alternatives is actually included in  
5 our comments and that is essentially to add a  
6 statement after the as-built definition. It simply  
7 refers to Section 3.1.4 to provide further  
8 explanation.

9 We're continuing to work with NRC to  
10 refine the guidance for maintaining or presenting  
11 ITAAC closure from the point at which the ITAAC is  
12 closed until the Commission makes a 103(g) finding.  
13 Again, Rich talked a little bit about that.

14 We feel like a lot of progress has been  
15 made in this area. We've got a few things to deal  
16 with yet, but we expect we'll complete that within the  
17 next couple of months.

18 We do see this additional work as a  
19 separate effort and we encourage NRC to move forward  
20 with their approval of Reg. Guide 1.2.15.

21 MEMBER BLEY: Barry, thank you. I should  
22 ask, are there any members of the public who have  
23 anything they would like to say.

24 (No response.)

25 At this time I'd like to thank you again

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1 for very good presentations today and on Tuesday, and  
2 we really appreciate the effort and at this time, Mr.  
3 Chairman?

4 CHAIR BONACA: Thank you, Dennis,  
5 appreciate.

6 MEMBER BLEY: Actually, on time.

7 CHAIR BONACA: Thank you for the  
8 presentation. We'll recess for lunch now. And come  
9 back at 1:15.

10 (Whereupon, the above-entitled matter went  
11 off the record at 12:11 p.m., and resumed at 1:15  
12 p.m.)

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# **ACRS Committee Brief on Staff Review of NEI 08-08 Template and DC/COL ISG-6**

**July 9, 2009**

**Presented by:**

**Timothy Frye, Chief, NRO/DCIP/CHPB**

**Edward Roach, Sr. Health Physicist, NRO/DCIP/CHPB**

**Dr. Hosung Ahn, NRO/DSER/RHEB**

# ACRS Presentation

- Purpose

- Brief the Subcommittee on the staff's review of revisions to NEI 08-08 and DC/COL ISG-6
- Explain the intended role of these documents in the licensing process.
- Discuss future activities incorporating this guidance

# NRC Staff Engagement

## – NRO

- Health Physics Branch
- Hydrologic Engineering Branch
- Balance of Plant Branches
- Containment and Ventilation Branches
- Rulemaking and Guidance Development Branch

## – NRR- Health Physics team

## – RES-

- Radiological Health Effects Branch
- Regulatory Guide Development branch

## – FSME- Reactor Decommissioning Branch

# Introduction/Background

- Subpart E- Radiological Criteria for License Termination Rule [i.e., 10CFR 20.1406(a) and (b)]
- Liquid Radioactive Release Lessons Learned Task Force Final Report, 9/1/2006
- NEI 07-07[Final] Industry Ground water Protection Initiative- Final guidance Document August 2007
- Regulatory Guide 4.21, Revision 0, “Minimization of Contamination and Radioactive Waste Generation: Life-Cycle Planning” June 2008

# Introduction/Background

- NRO actions Re:10CFR 20.1406
  - Conducted awareness training on RG 4.21 guidance for NRO technical branches.
  - Identified need for scoping, evaluation and acceptance criteria
  - Developed ISG-6 based on reviewer needs.
  - Industry developed NEI 08-08 template to support standard implementation of RG 4.21.

# NEI 08-08 Overview

- NEI 08-08 describes a generic FSAR operating program for COL applicants. The program uses a risk informed approach.
- It is intended to apply to all COLs regardless of the certified design type.
- The program will be implemented as a milestone under the license condition for the radiation protection program

# NEI 08-08 Issues

Key issues discussed in the NEI 08-08 template public meetings:

- Design Features- certified design features necessary to address 10 CFR 20.1406 (b); and Site-specific design features.
- Operating Programs- how NEI 08-08 proposed a standardized program for COL applicants
- Ensure coordination of NEI 08-08 with the existing operating reactor sites. (NEI 07-07 voluntary program, EPRI Technical report, and IE Bulletin 80-10)

# NEI 08-08 Template Overview

- Major sections include:
  - Applicability and Controls
  - Minimizing Facility Contamination
  - Guides for Minimizing Contamination of the Environment
  - Facilitation of Decommissioning
  - Minimizing the Generation of Waste
- The sections of NEI 08-08 are aligned with the sections of RG 4.21

# NEI 08-08 Staff Review Issues

- Introduction

- Staff questions related to the technical basis for the program.
- Staff concern that cost alone is not the determining factor when implementing the ALARA features

# NEI 08-08 Review Issues

- Applicability and Controls
  - Clarify comments related to NEI template and application. (Operating programs/site specific features)
  - NEI 08-08 did not address communication of offsite releases as described in NEI 07-07.
  - NEI 08-08 needed to address other mechanisms for release of radioactive material, not only ground water contamination.
  - Clarify if program would involve both initial and periodic evaluations. (Risk Assessment)

# NEI 08-08 Review Issues

- Minimizing Facility Contamination
  - Establish definition of thresholds- e.g., “credible mechanism” and “reasonably expected”
  - Discussion of examples or making all inclusive list of SSCs in document.
  - Inclusion of other programs with responsibilities for safe handling or containment of radioactive materials.
  - Ensure evaluation of cause and extent of condition when material is released.

# NEI 08-08 Review Issues

- Minimizing Contamination of the Environment  
(Hydrology issues)
  - Guidance on Site Conceptual Model (CSM) use
  - Use of term “downgradient” when locating monitoring wells,
  - Meaning of term “site boundary” for contamination analysis,
  - Clarify a “substantial change” to hydrological conditions
  - Program implementation timing (milestones)

# NEI 08-08 Review Issues

- Minimizing the Generation of Waste
  - Significant radioactive components-examples
  - Assessment of waste stored on site-
  - Establishment of Waste Management Plan

# NEI 08-08 Review Issues

- NEI 08-08 template usage:
  - Provides a program level description for COL applicants. It is not intended for DC applicants.
  - If accepted by staff, COL applicants can update the FSAR to incorporate the program and its milestone.
  - Establish a standard approach for procedures for operation to meet the guidance of RG 4.21.

# NEI 08-08 Summary

- NEI 08-08 describes a generic operating program for COL applicants.
- NRC Staff is currently conducting a safety evaluation to complete an SER on the generic FSAR guidance.
- If accepted COL applicants may commit to NEI 08-08 in the FSAR as the program description to be implemented.
- NRC staff will verify program implementation via the construction inspection program.
- Questions?

# DC/COL ISG-6-Interim Staff Guidance

- Background/Overview:
  - ISG-6-”Interim Staff Guidance on Evaluation and Acceptance Criteria for 10 CFR 20.1406 to Support Design Certification and Combined License Application” was developed to provide the NRC staff position on information and level of detail to demonstrate compliance with 10 CFR 20.1406.
  - Initial ISG issued for public comment on May 31, 2008 and received no public comments. Comment period closed July 31, 2008.

# DC/COL ISG-6-Interim Staff Guidance

- Acceptance Criteria:
  - Adequate design features exist, supplemented by operating programs.
  - Reasonable assurance that leaks and spills will be detected in a timely manner.
  - Site has been adequately characterized and conceptual site models developed.
  - Decommissioning features and their role are described.
  - Site will be operated in a manner to minimize the generation of radioactive waste (during operation and decommissioning).

# DC/COL ISG-6-Interim Staff Guidance

- Identifies the RG 4.21, Regulatory Positions C.1 –C.4 as providing guidance for compliance with 10 CFR20.1406.
- References the RG 4.21 Appendix A as a risk informed tool to determine applicable measures to consider.
- Interim staff guidance revision was based on staff comments questioning SSCs to review.
- Revision included a screening approach for SSCs (Attachment A); a list of operating experience events (Table 1).

# DC/COL ISG-6-Interim Staff Guidance Summary

- The DC/COL ISG-6-Interim Staff Guidance will provide interim guidance to assist the review of certified design applications and combined license applications.
- The guidance will be incorporated in upcoming NUREG-0800, Standard Review Plan revisions.
- Questions?



# U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

*Protecting People and the Environment*

## REGULATORY GUIDE 1.215 GUIDANCE FOR ITAAC CLOSURE UNDER 10 CFR PART 52 (DG 1204)

Richard Laura, Team Lead  
Construction ITAAC Team  
NRO/DCIP/CTSB



# Purpose of RG 1.215

- Used as a vehicle to endorse NEI 08-01
- Promotes a standardized approach to ITAAC closure
- NEI 08-01 was primarily developed for the implementation of 10 CFR 52.99 “Inspection During Construction”
- Future update and revision of RG 1.215 and NEI 08-01 expected due to emerging topics such as ITAAC maintenance
- Staff considers the inspection process for ITAAC and DAC are beyond the scopes of NEI 08-01 and RG 1.215 (potentially separate ACRS briefing)



# Requirements of 10 CFR 52.99

## Inspection during construction:

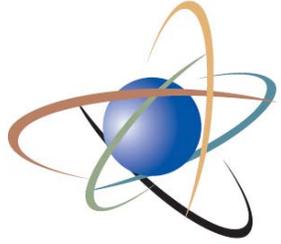
- § 52.99(c)(1) The licensee shall notify the NRC that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria have been met. The notification must contain **sufficient information** to demonstrate that the prescribed inspections, tests, and analyses have been performed and that the prescribed **acceptance criteria have been met.**
- Referred to as ITAAC closure letters



# Requirements of 10 CFR 52.99

## Inspection during construction:

- § 52.99(c)(2)..... The notification must be provided no later than the date 225 days before the scheduled date for initial loading of fuel, and must provide **sufficient information** to demonstrate that the prescribed inspections, tests, or analyses will be performed and the prescribed acceptance criteria for the uncompleted ITAAC will be met, including, but not limited to, a description of the specific procedures and analytical methods to be used for performing the prescribed inspections, tests, and analyses and determining that the prescribed **acceptance criteria have been met.**
- Referred to as 225-day notifications, or “uncomplete” ITAAC notifications



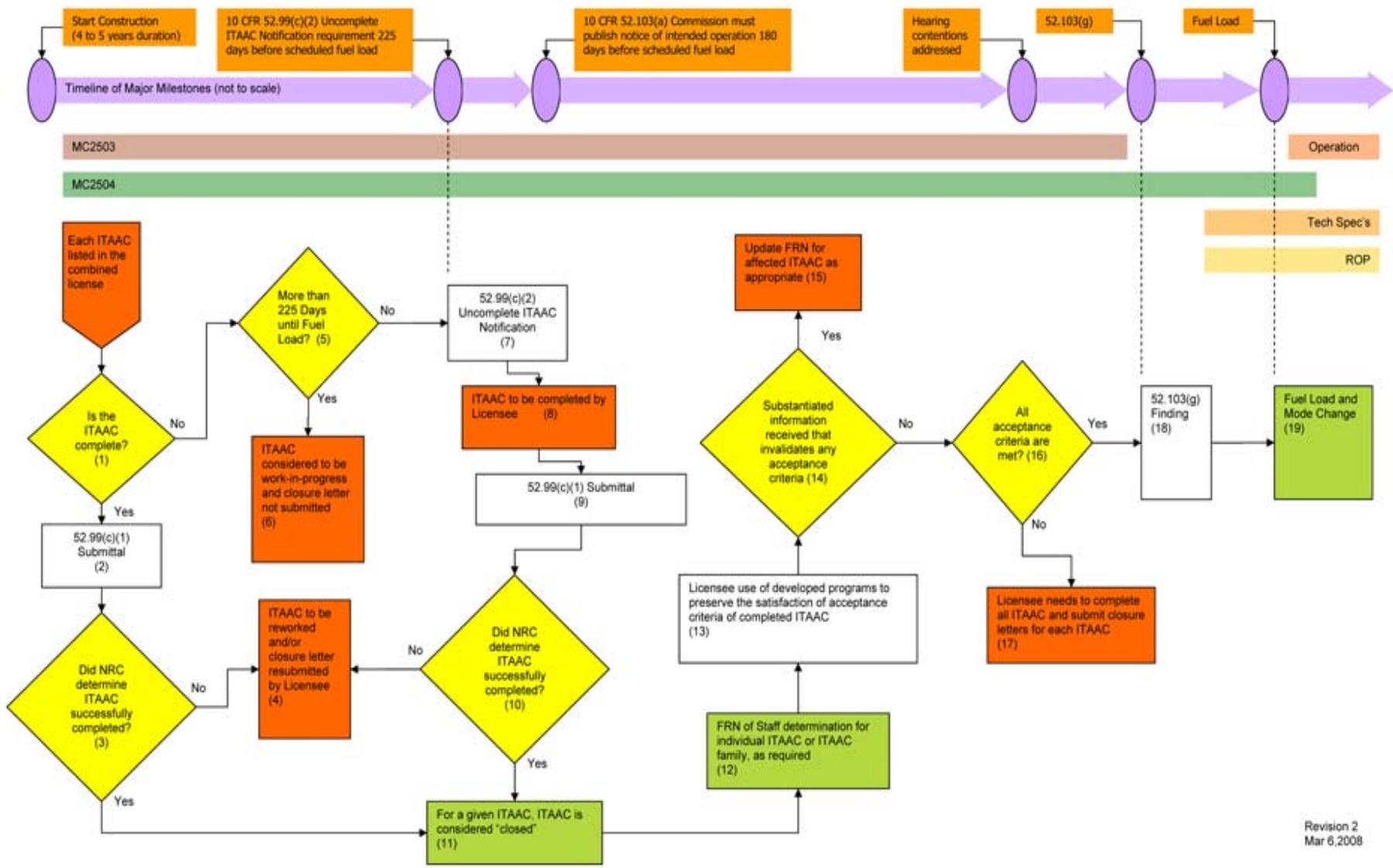
# Key Points of 52.99

## Statements of Consideration

- The NRC expects the notification to be sufficiently complete and detailed for a **reasonable person** to understand the licensee's bases for the ITAAC closure notification
- Information disclosure requirements of 52.99(c) based on:
  - Need to provide information to support a timely NRC staff recommendation and Commission finding on an ITAAC
  - Need to provide access to sufficient information to potential interveners at the ITAAC hearing stage



# 52.99 and 52.103(g) Process Flowchart and Timeline





# Closure Letter Template

## **ITAAC Statement**

Lists the Design Commitment, Inspection/Test/Analysis, and Acceptance Criteria

## **ITAAC Determination Basis**

Summarizes the methodology for conducting the ITA, and the results that demonstrate that the acceptance criteria were met

## **ITAAC-Related Construction Finding Review**

Lists relevant ITAAC-related construction findings and states that all corrective actions have been completed, or provides a justification for why the ITAAC can be closed despite unresolved findings

## **ITAAC Closure Statement**

Statement that the ITAAC was performed and that the prescribed acceptance criteria were met

## **References**



# 225-Day Notification Template

## **ITAAC Statement**

Lists the Design Commitment, Inspection/Test/Analysis, and Acceptance Criteria

## **Actions Achieved Toward ITAAC Closure**

Provides status of activities related to ITAAC closure

## **Actions Remaining to Attain ITAAC Closure**

Provides a high level discussion of the remaining activities, and summarizes the methodology for conducting the ITA

## **ITAAC Closure Schedule**

Provides forward looking statements for confidence that these actions will be achieved

## **References**



# Public Comments on DG1204

- 60-day public comment period ended May 13, 2009
- Comments received from 2 stakeholders
- NEI comments comprised majority, but were mostly editorial in nature
- Comment requiring significant effort involves the definition of “as-built”
  - NEI 08-01 has additional language in 3.1.4 that limits the use of as-built inspections that do not occur in the final location at the plant site to when it is “impractical”
  - RG clarifies that this limitation should be included in future design certifications



## AP-1000 ITAAC 2.1.3.2.c

### “Impractical” As-built Field Measurements

- Requires inspection of “as-built” reactor system to confirm the reactor vessel arrangement illustrated on a drawing with dimensional criteria
- One dimension identified is the RV wall thickness (without cladding) at its beltline
- Since the RV will be delivered to the site with cladding installed, the inspection of this critical dimension must be performed and accepted at the RV supplier fabrication facility
- RV is an ASME Code, Class 1 component, and delivered onsite as a Code stamped component with certification to substantiate that the properties and dimensional requirements meet the design specification and procurement requirements



# July 7<sup>th</sup> ACRS Subcommittee Meeting

- Through prioritization, targeted ITAAC inspections will encompass all significant construction activities
- RG 1.215 and NEI 08-01 will be compared for terminology consistency (closure vs complete)
- Recommended editorial changes to the 52.99 and 52.103(g) flowchart and timeline in App B will be completed before final issuance



# Design Acceptance Criteria (DAC)

- DAC is a subset of ITAAC
- All DAC will be reviewed and/or inspected
- DAC inspection processes will be included in IMCs
- Design-level review and/or inspection will be completed by HQ
- As-built field inspections
- Documentation for DAC closure to follow process in NEI 08-01



# ESBWR ITAAC, Rev 5

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>1. Criterion 5.1, Single Failure: The Criterion 5.1 systems listed in Table 2.2.15-1 are designed to ensure that safety-related functions required for design basis events (DBE) are performed in the presence of: (a) single detectable failures within safety-related systems concurrent with identifiable but non-detectable failures; (b) failures caused by the single failure; and (c) failures and spurious system actions that cause or are caused by the DBE requiring the safety-related functions, as identified in the applicable FMEA.</p>	<p>Block level FMEA of the Criterion 5.1 systems listed in Table 2.2.15-1 show that they perform safety-related functions required for design basis events in the presence of: (a) single detectable failures within safety-related systems concurrent with identifiable but non-detectable failures; (b) failures caused by the single failure; and (c) failures and spurious system actions that cause or are caused by the DBE requiring the safety-related functions, as identified in the applicable FMEA.</p> <p>{{Design Acceptance Criteria}}</p>	<p>Analysis report(s) conclude(s) that the systems identified in Table 2.2.15-1 for Criterion 5.1 ensure(s) that safety-related functions required for design basis events are performed in the presence of: (a) single detectable failures within safety-related systems concurrent with identifiable but non-detectable failures; (b) failures caused by the single failure; and (c) failures and spurious system actions that cause or are caused by the DBE requiring the safety related functions, as identified in the applicable FMEA.</p> <p>{{Design Acceptance Criteria}}</p> <p style="text-align: right;"><b>HQ</b></p>
<p>2. Criteria 5.2 and 7.3, Completion of Protective Actions: The Criteria 5.2 and 7.3 systems listed in Table 2.2.15-1 are designed so that, (a) once initiated (automatically or manually), the intended sequences of safety-related functions of the execute features continue until completion, and (b) after completion, deliberate operator action is required to return the safety-related systems to normal.</p>	<p>a. Inspection of the current revision of the simplified logic diagrams (SLDs) for the Criteria 5.2 and 7.3 systems listed in Table 2.2.15-1 verifies that the design shows (a) “seal-in” features that are provided to enable system-level safety-related functions to go to completion, and (b) “manual reset” features that are provided to require deliberate operation action to return the safety-related systems to normal.</p> <p>{{Design Acceptance Criteria}}</p>	<p>a. Inspection report(s) conclude(s) that the current revision of the SLDs show (a) “seal-in” features, and (b) “manual reset” features.</p> <p>{{Design Acceptance Criteria}}</p> <p style="text-align: center;"><b>RII</b></p>



# Key Points

- Staff has accomplished what was originally intended for guidance, and considers the RG ready for issuance
- Through endorsing industry guidance, the RG sets a milestone on Part 52 process agreement between staff and external stakeholders
- Substantial progress has been made in developing guidance for implementing Part 52
- Consensus was achieved in the 26 templates that form the basis for ITAAC closure
- Staff to provide the RG to the Commission as requested in August 2009