



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

November 21, 2011

MEMORANDUM TO: File

FROM: Sherry Meador **/RA/**
Technical Secretary, ACRS

SUBJECT: CERTIFICATION OF THE OFFICIAL TRANSCRIPT OF
THE MEETING OF THE SUBCOMMITTEE ON
RADIATION PROTECTION AND NUCLEAR MATERIALS
HELD ON SEPTEMBER 23, 2011

The official transcript of the subject meeting is the official record of the proceedings of that meeting.

Attachment:
As stated

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
Radiation Protection and Nuclear Materials

Docket Number: (n/a)

Location: Rockville, Maryland

Date: Friday, September 23, 2011

Work Order No.: NRC-1156

Pages 1-110

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

+ + + + +

SUBCOMMITTEE ON RADIATION PROTECTION AND

NUCLEAR MATERIALS

+ + + + +

FRIDAY

SEPTEMBER 23, 2011

+ + + + +

ROCKVILLE, MARYLAND

+ + + + +

The Advisory Committee met at the
Nuclear Regulatory Commission, Two White Flint
North, Room T2B1, 11545 Rockville Pike, at 8:30
a.m., Michael T. Ryan, Chairman, presiding.

MEMBERS PRESENT:

MICHAEL T. RYAN, Chairman

DENNIS C. BLEY, Member*

JOHN D. SIEBER, Member

ACRS CONSULTANT PRESENT:

JOHN FLACK

1 NRC STAFF PRESENT:

2 DEREK WIDMAYER, Designated Federal Official

3 MARISSA BAILEY, NMSS/FCSS

4 DOUGLAS COLLINS, NMSS/FCSS

5 JONATHAN DeJESUS, NMSS/FCSS

6 MARGIE KOTZALAS, Acting Chief, NMSS/FCSS/TSB

7

8 ALSO PRESENT:

9 GERARD COUTURE, Westinghouse/NEI

10 JANET SCHLUETER, NEI

11

12 *Participating via telephone

13

14

15

16

17

18

19

20

21

22

23

24

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

T-A-B-L-E O-F C-O-N-T-E-N-T-S

Opening remarks and objectives 4

FCOP

Margie Kotzalas, NMSS 5

Jonathan DeJesus 8

Doug Collins 21

Discussion by Subcommittee 79

Stakeholder Comments

Gerard Couture, Westinghouse 89

P R O C E E D I N G S

8:29 a.m.

CHAIRMAN RYAN: All right. Welcome. The meeting will now come to order.

This is a meeting of the Advisory Committee on Reactor Safeguards Subcommittee on Radiation Protection and Nuclear Materials.

I'm Michael Ryan, Chairman of the Subcommittee.

ACRS Members in attendance are Dennis Bley and Jack Sieber. ACRS Consultant John Flack is also in attendance.

The purpose of this meeting is to hold discussions with NRC on proposed enhancements to NRC's fuel cycle oversight process, F-C-O-P or FCOP. In a letter to the NRC staff, dated April 19th, 2011, the ACRS indicated they would like the opportunity to review the staff's findings, conclusions and recommendations on proposed changes to FCOP prior to the NRC staff response to the Commission. This meeting is the second in response to the Committee's request. The Committee thanks the staff for the support of the ACRS' request for today's meeting.

The Subcommittee will gather information, analyze relevant issues and facts and formulate

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 proposed positions and actions as appropriate.

2 Derek Widmayer is the Designated Federal
3 Official for this meeting.

4 A transcript of the meeting is being kept
5 and will be made available on the web.

6 It is requested that speakers first
7 identify themselves and speak with sufficient clarity
8 and volume so they may be readily heard.

9 We received a request from NEI to provide
10 stakeholder comments and an item has been added to the
11 agenda to allow associated comments to be expressed.

12 If there's anyone on the phone link at
13 this time, please introduce yourself. I know Dr. Bley
14 is on. We just heard from him earlier, so we'll
15 recognize his participation via the phone.

16 MEMBER BLEY: Right.

17 CHAIRMAN RYAN: Okay. We will now proceed
18 with the meeting and I call upon Margie Kotzalas,
19 Acting Branch Chief Technical Support Branch, Special
20 Projects and Technical Support, Division of Fuel
21 Cycling Safeguards of NMSS to open the presentations.

22 MS. KOTZALAS: Thank you. Good morning.

23 As Dr. Ryan indicated, my name is Margie
24 Kotzalas and I'm the Acting Chief of the Technical
25 Support Branch in NMSS.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 With me is Jonathan DeJesus and Doug
2 Collins. And we're going to update you on the
3 enhancements that we are proposing to the fuel cycle
4 oversight process, and these will be indicated in a
5 Commission paper due in October.

6 Since we briefed you in June we have
7 adjusted our enhancements. Your feedback has been
8 valuable to us and you will see it reflected in the
9 enhancements that we have proposed.

10 Okay. To put our work in context, the
11 Commission has not given us approval to completely
12 revise the oversight process, though for several SRMs
13 the Commission directed us to make modest adjustments
14 to the existing process to enhance efficiency
15 effectiveness and include incentives for licensees to
16 maintain strong corrective action programs.

17 The Commission also directed us to develop
18 a set of cornerstones for the oversight process and to
19 provide recommendations for next steps.

20 Today we will present to you some of our
21 recommendations for next steps, such as the conceptual
22 framework for an enhanced process because we think it
23 will help put the cornerstones and other proposed
24 elements of the FCOP into context.

25 And we'll also highlight what we think the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 benefits of an enhanced FCOP are, such as:

2 Aligning the core inspection program to
3 the cornerstones;

4 Assessing the frequency of inspections to
5 align with the risk significance and licensee
6 performance, and;

7 Increasing transparency and predictability
8 of the significance of inspection findings in the
9 assessment of licensing performance.

10 Now gaining efficiencies in the oversight
11 process is important now and it will become even more
12 important in a few years. Right now there are ten
13 fuel cycle facilities that are subject to the
14 inspection program. In the next few years, five more
15 facilities may become operational. With a flat or
16 even declining budget, we need to be smarter about how
17 we verify compliance with the regulations and license
18 requirements and right-size our inspection programs to
19 focus our resources so that it is appropriate to
20 licensee's performance.

21 Now that I've provided some background,
22 I'd like to turn it over to Jonathan who will walk you
23 through the conceptual framework of an enhanced
24 process and describe the evolution from the current
25 oversight process.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. DeJESUS: Good morning. My name is
2 Jonathan DeJesus. I'm the Project Manager for the
3 enhancements to the fuel cycle oversight process.

4 And with this next slide, slide 5, my
5 intent is to give you a high level overview of the
6 current fuel cycle oversight process and then I will
7 show how it evolves to the enhanced FCOP.

8 First, the current FCOP starts with a core
9 inspection program. And the core inspection program
10 provides the minimum amount of inspections to
11 determine whether a fuel cycle facility is operating
12 safely and securely and in accordance with regulatory
13 requirements. With the core inspection program the
14 NRC staff can identify indications of dependent safety
15 or security performance.

16 Then the next element is reactive
17 inspections. Reactive inspections include follow-up
18 to events including special inspection teams,
19 augmented inspection teams and incident investigation
20 teams where an approach to reactive inspections is
21 taken depending on the actual or potential
22 significance of an event.

23 Then the next element is the generic
24 safety issue inspections. Those inspections are
25 initiated when it is determined that a safety issue

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 addressing a Bulletin or Generic Letter requires
2 inspection, or verification or follow-up. And the
3 Agency develops the requirements and guidance for the
4 inspections and issues them in temporary instructions.

5 The next is as a result from the core
6 inspection program temporary instructions and reactive
7 inspections are screened to determined whether if it's
8 a noncompliance. And that's a decision point here you
9 see in the diagram.

10 If the inspection result is not a
11 noncompliance, then the NRC doesn't take any
12 additional action. And if the inspection result is a
13 noncompliance, then there's another decision point:
14 Is it greater then minor. Then if it's not greater
15 then minor, then it's left to the licensee to correct
16 the issue. And that normally is not documented in
17 inspection reports.

18 And as I mention again, however the
19 licensee is responsible for correcting the issue and
20 that's why the diagram says "license control."

21 If it's determined that the noncompliance
22 is greater then minor, The NRC evaluated the
23 noncompliance in the NRC enforcement process to
24 determine the significance of that noncompliance. And
25 the significance of the noncompliance is described

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 using some severity levels in the current enforcement
2 policy. And, as you may know, there are four severity
3 levels in the enforcement process. The severity
4 levels in increasing order of significance are:

5 Severity Level 4;

6 Severity Level 3;

7 Severity Level 2, and then;

8 Severity Level 1, which is the most
9 significant.

10 And then in the assessment those
11 inspection findings are accumulated and they are
12 evaluated in the current licensee performance review.
13 And based on that licensee performance review the NRC
14 determines what supplemental inspections are needed.
15 And that's how, and as you see in the diagram, the
16 supplemental inspection, the findings from those
17 supplemental inspections go through the process as the
18 other three elements.

19 And this diagram right now is how we
20 currently do business currently.

21 DR. FLACK: John, can I ask a question?
22 I'm sorry.

23 At this point there's no consideration of
24 risk at all in this process? It's pretty much
25 compliance driven.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. DeJESUS: There's consideration of
2 risk in my understanding in the selection of
3 inspection samplings. The inspectors look at the ISAs
4 and the Safety Evaluation Reports to determine what is
5 appropriate and in a risk perspective goal to the
6 facilities and inspect.

7 DR. FLACK: Oh, where to look?

8 MR. DeJESUS: Yes. Where to look.

9 DR. FLACK: Or where they find in this
10 process -- I mean, it's just really whether it's
11 compliance or not, right, I mean in this particular
12 type of process that you're talking?

13 MR. DeJESUS: Yes.

14 MR. COLLINS: But in the determination of
15 what severity level it is --

16 DR. FLACK: Yes.

17 MR. COLLINS: -- the enforcement policy is
18 in a sense risk-informed. It's at a fairly high level.

19 DR. FLACK: Okay. So that's where it
20 claims to --

21 MR. COLLINS: It also enters there.

22 DR. FLACK: Okay.

23 MEMBER SIEBER: And also there's no PRA so
24 the numbers are not -- or they're risk-informing. The
25 implications are not exact.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 CHAIRMAN RYAN: If I'm recalling, correct
2 me if I'm wrong and I apologize, but the severity
3 levels have with them criteria of failure to control
4 materials, you know as one kind of criteria. And then
5 exposure to workers is another.

6 MEMBER SIEBER: Right.

7 CHAIRMAN RYAN: Releases from licensed
8 material controls. And each one has no release or
9 very low doses, or you know all those kind of scaled
10 criteria from four to one. That's I guess is close to
11 how the risk significance is being addressed. And I
12 can't recall all the exact criteria, but it's along
13 those lines, correct?

14 MR. COLLINS: Yes, sir. And for example
15 if a system has two licensed controls and you lose
16 one control, that would put you one place.

17 CHAIRMAN RYAN: Yes.

18 MR. COLLINS: Two controls would put it
19 another.

20 CHAIRMAN RYAN: Right.

21 MR. COLLINS: And no controls but no event
22 another.

23 CHAIRMAN RYAN: Yes.

24 MR. COLLINS: No controls, event another.

25 CHAIRMAN RYAN: And that's the other side

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 of it is this failure of controls and the consequence.
2 All that's built into those tables, if I recall right.

3 Thanks.

4 MEMBER SIEBER: But the initial licensing
5 you go over how many controls are required to
6 processes is part of the licensing basis for it?

7 MR. COLLINS: Yes, sir.

8 MEMBER SIEBER: Okay.

9 MR. DeJESUS: And then now although I'm
10 going to show how the enhancements to fuel cycle
11 oversight process are that we are proposing.

12 First, one of the differences is the
13 cornerstones, and that's how the Commission direction
14 we developed a set of cornerstones that could be
15 applied to the fuel cycle oversight process. And each
16 cornerstone has a task objective and where licensees
17 meet those objectives, it gives the staff a reasonable
18 assurance that the NRC's mission of protecting public
19 health and safety and the environment and promoting
20 the common defense of our security is met. And after
21 my presentation Doug Collins will go into a little bit
22 more detail on what are the cornerstones.

23 And then similarly to the current
24 inspection, the current FCOP inspection results --
25 okay.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 What this arrow that just got in means is
2 that the cornerstone objectives -- the reactive
3 inspection, one of the changes is to focus the
4 reactive inspections to the cornerstone objective to
5 ensure that the mission is met. And that is similar
6 with the generic safety issues.

7 And then with the inspection results from
8 the three elements there's a decision point now where
9 we ask: Okay, is there any criteria for traditional
10 enforcement that apply? And those criteria for
11 traditional enforcement are:

12 If there's an actual safety significance;

13 If there's a potential for impacting the
14 NRC regulatory process, or;

15 If there's any willfulness aspect of that
16 inspection result.

17 And if any those criteria apply, then it
18 goes to traditional enforcement. And then if those
19 elements from traditional enforcement, then we ask
20 another question: If it's performance deficiency?

21 If the inspection result is not a
22 performance deficiency, then similarly with a
23 noncompliance we take no action.

24 And then if it's a performance deficiency,
25 we ask the same question: If it's the performance

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 deficiency is greater than minor. If not, then again
2 it'll go to the license control and they must correct
3 that minor issue.

4 If it's a greater than minor deficiency
5 performance deficiency, it will turn the inspection
6 result, we name it now an inspection finding; that is
7 assessed in what we're proposing as a fuel cycle
8 significant determination process. And that fuel
9 cycle significant determination process assesses the
10 significance of:

11 Safety and security findings;

12 It has four levels of increasing
13 significance. At the lowest level we have very low
14 significance and then low to moderate significance and
15 then substantial significance and then high
16 significance.

17 And then those results from the SEP we're
18 proposing that they go into an action matrix that has
19 NRC predetermined actions on what to do given the
20 performance of the licensee. And those actions
21 include management conference, monitoring licensee
22 actions, additional regulatory actions. But the one
23 that we're going to focus on today is the NRC
24 inspections. That action matrix will determine what
25 kind of engagement we do after a finding is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 identified.

2 And then again, that's the feedback loop
3 to supplemental inspections that again goes through
4 the same process as the other three elements.

5 And in addition to the action matrix in
6 the performance assessment process, we're proposing to
7 have continuous and periodic reviews and also consider
8 the crosscutting areas in the performance assessment
9 process.

10 CHAIRMAN RYAN: How do you do a continuous
11 review, unless you have onsite inspection all the
12 time?

13 MR. COLLINS: Well, continuous based on
14 the information. As we get the information it would
15 be assessed. It may end up differing for major
16 issues--

17 CHAIRMAN RYAN: Jonathan, you might want
18 to move that stuff away from the microphone. It's
19 under the papers because that's quite loud in that
20 reporter's ear. You can actually push the microphone
21 away from it a little bit, it'll help.

22 Thank you. I'm sorry.

23 MR. COLLINS: Again, this is defined yet.
24 We haven't decided. For example, you could as a
25 finding comes in look at the action matrix and see if

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 it's going to change what we intend to do. There will
2 be a formal frequency quarterly, semi' I'm not sure
3 where you would assess everything in an integrated
4 manner.

5 CHAIRMAN RYAN: So it's really increased
6 frequency of review. Because I don't think there is
7 such a thing as continuous review unless you had an
8 onsite inspector there all the time you're operating.

9 MR. COLLINS: And let me clarify. By
10 continuous we mean as information comes in from
11 inspections. And it may come in monthly or --

12 CHAIRMAN RYAN: Oh, it's enhanced periodic
13 inspections?

14 MR. COLLINS: There you go. Yes, sir.

15 CHAIRMAN RYAN: Okay.

16 DR. FLACK: Yes, a question. On the
17 comparing the two diagrams, one being the proposed
18 versus the traditional, I guess the one that's
19 currently in place now, you mentioned like that first
20 box where it says "Criteria for Traditional
21 enforcement." And you mentioned three things, I
22 guess: Safety significance, the impact of the
23 regulatory process and willful negligence I guess on
24 the part of the licensee. How was that treated
25 before? It looked like the first question you asked

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 me for was whether it was a compliance issue.

2 Now, these may or may not be compliance
3 issues, right? I mean, it could be something in that
4 set that was not a compliance issue or are you
5 assuming they would all be compliance issues at that
6 point that you're looking for that traditional
7 enforcement box? Is that just compliance or is it
8 more than that, or is it -- you know --

9 MR. DeJESUS: I believe it's more than
10 that. If it has an actual safety consequence, the NRC
11 would engage the license.

12 DR. FLACK: Okay.

13 MR. DeJESUS: And if it effects our
14 ability to regulate the licensee, the same thing. If
15 there's any wilfulness, I think from my understanding
16 one of the big things that the NRC engages the
17 licensees if there's any willfulness aspect to the
18 action identified.

19 DR. FLACK: Yes. But is that being picked
20 up before in the previous diagram? Oh, it's also
21 involved in that first --

22 MR. DeJESUS: Yes. Yes. And the reason
23 that it's a traditional enforcement, it's at the
24 beginning as compared to now, is in the current
25 program, in the current FCOP there's the enforcement

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 process. And here we're proposing to modify that
2 determination with the fuel cycle oversight process.

3 DR. FLACK: Okay. So that's the major
4 change there, right there? Right. Yes.

5 MEMBER SIEBER: Will your enforcement in
6 most severe cases it's done through civil penalties,
7 suspension of license or revocation of license?

8 MS. KOTZALAS: If there's an actual safety
9 significance, then yes. Because then we would enter
10 it met the criteria for traditional enforcement which
11 could then lead you into civil penalties.

12 MEMBER SIEBER: And to get to those kinds
13 of penalties would it necessarily required to be
14 intentional?

15 MS. KOTZALAS: No, not if there was an
16 actual safety significance, like somebody was hurt.
17 There was an event and somebody got hurt.

18 MEMBER SIEBER: Yes. Because somebody
19 gagged a relief valve and they shouldn't have?

20 MS. KOTZALAS: Yes, it was an accident.

21 MEMBER SIEBER: It was a mistake?

22 MS. KOTZALAS: Right.

23 MEMBER SIEBER: And a pipe broke and
24 killed somebody?

25 MS. KOTZALAS: Yes, even though that was

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 not willful, it still resulted in an actual safety
2 significance, therefore the criteria traditional
3 enforcement with the civil penalties applies.

4 MEMBER SIEBER: Okay. Which could include
5 the items I mentioned?

6 MS. KOTZALAS: Yes.

7 MEMBER SIEBER: Thank you.

8 MR. DeJESUS: And with that, I'll pass it
9 on to Doug Collins.

10 DR. FLACK: Oh, one other question. About
11 the crosscutting areas, I know it's a box there but
12 has that been thought out how that integrates into the
13 action matrix. I mean, how would that be taken into
14 consideration?

15 Now I'm assuming in the same way is the
16 reactor oversight process; the crosscutting issues are
17 ones that go across cornerstones, right?

18 MR. DeJESUS: Yes.

19 DR. FLACK: And so that seems to be in a
20 separate box next to the action matrix.

21 MR. DeJESUS: Right.

22 DR. FLACK: But how does that effect
23 things at that point? Is that a separate initiative
24 to look at this and then come up with something that
25 would be in addition to what comes out of the action

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 matrix, or you haven't actually designed that yet,
2 that piece>

3 MR. DeJESUS: We haven't employed --

4 DR. FLACK: To that level?

5 MR. DeJESUS: -- to that level yet.

6 DR. FLACK: All right. But it's there and
7 you recognize it and it's going to be at some point
8 put into the picture?

9 MR. DeJESUS: Yes.

10 DR. FLACK: Okay. Good. Yes, thanks.

11 MR. DeJESUS: Then I'll move on to pass
12 you to Doug Collins who will present the cornerstones.

13 MR. COLLINS: Good morning. I'm Doug
14 Collins. I'm from the Office of Nuclear Materials
15 Safety and Safeguards. And today I'll update you on
16 our development of a set of cornerstones that will be
17 used to enhance the fuel cycle oversight process.

18 This morning I'll outline the goals for a
19 new set of cornerstones that take into account
20 internal stakeholder comments. I'll discuss two new
21 proposed cornerstones and their elements that we use
22 in this new set of cornerstones that we now call
23 hazards analysis-based cornerstones. I'll briefly
24 discuss the status of the cornerstones that we brought
25 up during the June meeting. These are cornerstones

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 that we now call operations-based cornerstones. And
2 I'll outline the pros and cons of the two sets of
3 cornerstones.

4 Am I doing something wrong?

5 CHAIRMAN RYAN: No. There's buzzes and
6 hisses all around electronics. Don't worry. It's not
7 you, Doug.

8 MR. COLLINS: Okay. Slide 8.

9 Okay. Briefly this slide outlines the key
10 goals and interests that led to the new hazards
11 analysis-based cornerstones. The key goals and
12 interest are:

13 That they meet the Commission's direction
14 that would lead us to a process that is risk-informed,
15 performance-based, et cetera, as Margie said earlier;

16 That they be based on the strategic plan;

17 That they result in a similar oversight
18 framework to that used in the ROP, the reactor
19 oversight process or ROP;

20 That they be responsive to internal
21 stakeholder comments, and;

22 They be specific to fuel cycle safety and
23 Safeguards requirements and the terminology to
24 facilitate communications.

25 The key basis for developing the hazards

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 analysis-based cornerstone was internal stakeholder
2 comment that the fuel cycle oversight process, or as
3 you indicated FCOP, enhancement should use
4 cornerstones that would result in an oversight
5 framework more similar to that used in the reactor
6 oversight process or ROP. This would contribute to
7 having more consistency in cornerstone framework
8 across the Agency's processes.

9 Next slide, please.

10 These are the set of hazards analysis-
11 based cornerstones. They are:

12 Accident sequence initiators;

13 Safety controls;

14 Emergency preparedness;

15 Public radiation safety;

16 Occupational radiation safety, and;

17 Security/material control and accounting.

18 This framework would generally use the
19 same inputs from the inspection results as the
20 operations-based cornerstones to determine whether a
21 licensee was meeting a cornerstone objective.

22 Here in the hazards analysis-based
23 cornerstones, though, the accident sequence initiator
24 and safety control cornerstones view licensee
25 performance more in terms of how a licensee analyzes

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 ISA related or accident hazards. Under the
2 operations-based cornerstones that we discussed in
3 June, the same key attributes and inspection
4 activities were repeated across the criticality safety
5 and chemical safety, and to a lesser degree radiation
6 safety cornerstones.

7 Under this new hazards analysis-based set
8 cornerstones the ISA related key attributes for
9 criticality safety and chemical safety and radiation
10 safety are integrated safety controls.

11 Next slide, please.

12 DR. FLACK: No, before we leave that, if
13 I can.

14 MR. COLLINS: Yes. Yes, sir.

15 DR. FLACK: Yes, I mean that's a big step
16 forward right there in that change as compared to
17 conforming process to another, reactor oversight
18 process. When you lay then down side-by-side the one
19 cornerstone that's missing there is obviously the
20 barrier cornerstone. And now you look at the barrier
21 cornerstone in the reactor side of it, and there's
22 like three pieces there. You have the containment,
23 you have the vessel, you have the fuel. And
24 recognizing that the containment and the vessel are
25 somewhat different here, but the fuel and its

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 performance as a barrier has attributes that are very
2 similar to what one would see in a chemical facility
3 given the performance, procedure quality, design
4 control. And my thinking is, is well if you really
5 want to articulate the cornerstones and how it
6 protects the public and workers and so on, why
7 wouldn't you want to include a barrier cornerstone in
8 a similar sense?

9 MR. COLLINS: Well, at this point, all of
10 the barriers, and the barriers in these plants are
11 significantly different than those of power reactors,
12 those in fact we have cast as the controls under the
13 safety control section or safety controls cornerstone.

14 So, for example, if material is being used
15 in a glove box, that glove box in a sense is a barrier
16 in a way that the containment might be a barrier.

17 DR. FLACK: Right.

18 MR. COLLINS: And that would be placed in
19 the safety controls cornerstone. So under safety
20 controls you might have physical systems and barriers.
21 You might have actions or activities by operators or
22 other members of the plant. You would have the
23 management measures as Part 70 uses the term that
24 would assure that the barriers and the safety controls
25 and the items relied on for safety or NCS controls

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 maintain in effect. So --

2 CHAIRMAN RYAN: Well, if you had a
3 ventilation system, for example, had an automatic
4 shutdown for various kinds of signals, that would be
5 a barrier type?

6 MR. COLLINS: That's a barrier, but we--

7 CHAIRMAN RYAN: But you would put that in
8 safety controls?

9 MR. COLLINS: Safety controls.

10 CHAIRMAN RYAN: Okay.

11 MR. COLLINS: If you have a UF6 bang and
12 there's a UF6 release, then you have to switch over to
13 the emergency ventilation system, that would be -- we
14 would put that under safety controls.

15 MEMBER BLEY: Doug, this is Dennis Bley.

16 Is it fair to say that regardless of the
17 names you're using for these now, that the new
18 approach is really anchored in accident sequence
19 considerations that would include things like barriers
20 rather than in a set of independent items.

21 MR. COLLINS: Yes, that's correct.

22 MEMBER BLEY: That's what it looked like.
23 Okay. Thanks.

24 DR. FLACK: So I guess there's no
25 advantage to taking it out as a separate cornerstone?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 I mean it's considered, I understand, within the
2 safety controls but trying to express the cornerstones
3 as each one having a certain feature, certain impact
4 on a particular sequence of events that could occur at
5 the plant and how one would look at each of those
6 separately in a sense and try to draw conclusions as
7 to whether they're being maintained. Wouldn't that
8 sort of give you another piece of information on which
9 to assess the facility? I'm still trying to
10 understand why it would be folded into the safety
11 controls? Is it too hard to separate out, is that --

12 MR. COLLINS: The way licensees did their
13 safety analyses they would not be separated out, I
14 don't believe. Some licensees may have some way of
15 doing it. But basically they established safety
16 controls to the point where the accidents were
17 mitigated in the way that Part 70 requires.

18 DR. FLACK: Yes.

19 MR. COLLINS: And their likelihood are the
20 way Part 70 required. And that may be a barrier in the
21 sense of a go box. It may be a barrier in the sense
22 of an alarm that a operator responds to. I mean, it
23 could be done, but right now you would look at the
24 safety of a system in an integrated way whether it's
25 containment or whether it's operator action.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 DR. FLACK: Okay.

2 MR. COLLINS: Because that was the way it
3 would have been analyzed.

4 DR. FLACK: Okay. All right.

5 MR. COLLINS: Slide 10.

6 This will show a diagram of the hazards
7 analysis-based cornerstone. The fuel cycle regulatory
8 framework starts at the highest level with the NRC
9 mission. The mission is to ensure, of course, that
10 licensees use licensed materials in a manner that
11 ensures adequate protection of public health and
12 safety, promote the common defense and security, and
13 protects the environments.

14 The staff used the Agency's strategic
15 goals of safety and security as the second level in
16 the fuel cycle regulatory framework. The safety and
17 strategic goal is to ensure adequate protection of
18 public health and safety in the environment and the
19 security strategic goal is to ensure adequate
20 protection in the secure use and management of
21 radioactive materials.

22 The Commission established strategic
23 outcomes for each of these strategic goals. And
24 briefly, the strategic outcomes are:

25 Prevent the occurrence of an inadvertent

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 criticality;

2 Prevent any acute radiation exposure that
3 results in death;

4 Any releases of radioactive material that
5 results in significant radiation exposures, or;

6 Cause a significant adverse environmental
7 impact.

8 As we discussed last time, in addition to
9 these radiation related strategic outcomes for
10 facilities in the fuel cycle area the NRC regulations
11 require the licensees to control the potential impacts
12 on workers and the public from certain hazardous
13 chemicals used at the facilities that are associated
14 with processing material. And a Memoranda of
15 Understanding with the U.S. Occupational Safety and
16 Health Administration will clarify this understanding.

17 The strategic outcome from the strategic
18 plan for the security strategic goal is prevent any
19 instances in which licensed radioactive materials are
20 used domestically in a manner hostile to the United
21 States.

22 This next level down, the strategic
23 performance area level, are those areas that are
24 similar to those in the ROP. And here they are fuel
25 facility safety, in the ROP it's reactor safety,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 radiation safety and Safeguards.

2 Next, please.

3 This level shows the current actual
4 hazards analysis-based cornerstones. These
5 cornerstones are, as I said before, more aligned in
6 the way the safety analysis is done. This
7 organization meets, we believe, to an oversight
8 program that is more similar in framework to the ROP
9 than the one we discussed previously.

10 Next slide, please.

11 And now we'll go through the two, as we
12 call them, new cornerstones. And you'll find in one
13 sense they're not necessarily that new.

14 We now will discuss in more detail the two
15 new cornerstones.

16 The accident sequence initiators
17 cornerstone is similar to but not the same as the
18 initiating events cornerstone in the ROP. 10 CFR Part
19 70 requires the licensee to develop an ISA for the
20 processes in the plant. The ISA must include
21 potential accident sequences caused by process
22 deviations, other events internal to the facility and
23 credible external events including natural phenomena.

24 As discussed in two NUREG reports that
25 were companions to Revised Part 70, those being NUREG

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 15.30 on how to do ISAs and NUREG 15.20 which is the
2 standard review plan for Part 70 licensing accident
3 sequence initiators include: Initiating events,
4 enablers and controls. Not all licensees use these
5 terms in developing their ISAs, but they did use the
6 concepts.

7 So initiating events could be, as we
8 discussed: Deviations from normal operational
9 processes for credible abnormal events or events
10 external to the process being analyzed but within the
11 facility in the external events.

12 Enabling conditions or enablers are
13 conditions or assumptions whose increase or change is
14 credible and if changed, could cause an increase in
15 the accident frequency or consequences.

16 Controls can be items relied for safety,
17 or IROFS, it could be nuclear safety controls or other
18 controls that are needed to ensure safety of a
19 facility.

20 The objectives of the accident sequence
21 initiators are to verify that a licensee limits the
22 frequency of accident sequence initiators that lead to
23 the need for IROFS, NCS controls or other safety
24 controls.

25 The ISA assumed frequency for accident

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 sequence initiators in establishing IROFS and NCS
2 controls lead to the conclusions in the ISA. These
3 IROFS or NCS controls would be required by Part 70 as
4 a result of the ISA or NCS analysis showing that they
5 are required to limit the likelihood or consequences,
6 or prevent the nuclear accident.

7 The next slide, please.

8 The second objective is to assure that the
9 licensee evaluates and limits as appropriate the
10 accident sequence initiators that are not required to
11 be limited or controlled by higher Ops, NCS controls
12 or other safety controls. These are accident sequence
13 initiators that the licensee has determined do not
14 need to be prevented or have their likelihoods limited
15 based on the ISA. This could occur because the ISA
16 shows that they may be allowed to occur without
17 causing likelihoods or consequences defined in Part
18 70.

19 CHAIRMAN RYAN: Doug, could you maybe give
20 us a practical examples of what would be in this
21 category?

22 MR. COLLINS: Right now the licensee may
23 have controls on a process. Because they believe from
24 their safety philosophy point of view they need five
25 controls. It could be -- let me do a simple example.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Five inline monitors with activation and
2 actions off of each inline monitor based on what's in
3 the pipe. But when they do their analysis, they may
4 only need two.

5 CHAIRMAN RYAN: Yes.

6 MR. COLLINS: So two of those inline
7 monitors might be identified as IROFS and the other
8 three as other safety controls.

9 CHAIRMAN RYAN: I see. So I understand
10 the example. If you have one inline monitor and it
11 fails, you still have the second one.

12 MR. COLLINS: Yes.

13 CHAIRMAN RYAN: And the other three may be
14 different locations, further down the pipe or whatever
15 it is, and it might be a process control information
16 piece that's helpful, but it's not relied on for
17 safety; those kinds of things?

18 MR. COLLINS: Right.

19 CHAIRMAN RYAN: Okay. And you kind of
20 understand the way they're using those terms.

21 MR. COLLINS: Yes.

22 DR. FLACK: There is a couple of things,
23 though, involved there. One is, of course, this may
24 act as a means of a defense-in-depth, the ones that
25 you're not taking credit for.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. COLLINS: Yes.

2 DR. FLACK: But are they maybe also
3 dependent on the other controls which means if one of
4 the other controls failed, they also fail in a common
5 cause kind of way.

6 MR. COLLINS: That's correct.

7 DR. FLACK: So unless one looks at that,
8 you don't know how much credit to give them, but
9 they're not taking credit for it is what you're
10 saying.

11 MR. COLLINS: Yes.

12 DR. FLACK: Right.

13 MR. COLLINS: And that's a bad example.
14 It may well be that you have an inline monitor and a
15 conductivity monitor; two different kinds of monitors.

16 DR. FLACK: Different, yes.

17 MR. COLLINS: And they'll follow the same
18 thing.

19 DR. FLACK: Okay.

20 MR. COLLINS: And then the final objection
21 is to verify that the licensee has identified in the
22 ISA all accident sequence initiators associated with
23 the use of Part 70 materials and has appropriate
24 assessed the accident sequence to identify those that
25 require IROFS and/or NCS controls that are there to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 prevent or mitigate intermediate or high consequence
2 events or prevent nuclear criticalities.

3 DR. FLACK: I'm sorry if we can go back to
4 the discussion we just had.

5 MR. COLLINS: Sure.

6 DR. FLACK: And now if these other ones
7 that have not been credited in the ISA were to become
8 unavailable, would that effect the cornerstone?

9 MR. COLLINS: If they maintain the two or
10 three, or whatever needed to meet the Part 70
11 criteria, it would not cause an enforcement issue on
12 the cornerstone. But it could be something that we as
13 an Agency are interested in because it may be telling
14 us a lot of different things about the licensee. But
15 we may well not come to enforcement as a result of
16 that.

17 DR. FLACK: So previously it was not a
18 compliance issue, you would sort of drop it. But now
19 in this new framework you would keep that as
20 additional information and have that move forward
21 through the process, I guess is what you're saying.

22 MR. COLLINS: It would depend on what was
23 found, we might engage the licensee under this. Now,
24 I wouldn't say currently we would drop it. But in fact
25 right now the inspections, as I understand them, do

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 focus on items relied on for safety and the management
2 measure to ensure this.

3 DR. FLACK: Right.

4 CHAIRMAN RYAN: I understand and
5 appreciate it, but I'm thinking about the licensee
6 that has a complicated system; a new plant, a MOX
7 plant at Savannah River site. They have a number of
8 IROFS. It's breathtaking. Fifteen thousand, is that
9 right?

10 DR. FLACK: Twelve thousand if you're
11 talking about MOX facility.

12 CHAIRMAN RYAN: Twelve thousand? How are
13 you going to get all those sequences straight right
14 off the bat? I mean, they're going to evolve over
15 time and there's going to be, I think, updates and
16 improvements. How do you deal with a new facility that
17 has an awful lot of IROFS that's going to need to
18 evolve a little? Although, I guess, how do you deal
19 with that in the context of the system you're
20 envisioning?

21 MR. COLLINS: Well, they all have accident
22 sequences --

23 CHAIRMAN RYAN: Yes.

24 MR. COLLINS: -- that have established the
25 IROFS. Now how an inspector or inspection team

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 intelligently selects which sequences to review is
2 some guidance that has not been developed for a big
3 facility. There is guidance in today's current
4 procedures --

5 CHAIRMAN RYAN: Yes.

6 MR. COLLINS: -- as how to do that. But
7 it's for facilities that don't have 12,000 IROFS. So
8 that's to be determined, to be honest with you.

9 CHAIRMAN RYAN: Fair enough. Yes.

10 And simple facilities, you know I guess it
11 really comes down to a discussion between they may be
12 thinking about a particular sequence one way and then
13 by inspection the inspectors may have a different view
14 of how that sequence should be treated, or you know
15 how it should be characterized in terms of its risk
16 significance. And then, you know it's kind of a
17 negotiation between the licensee and the regulator to
18 decide how its going to be collectively treated.

19 MR. COLLINS: Or recent license it also
20 could lead to enforcement.

21 CHAIRMAN RYAN: It could?

22 MR. COLLINS: Yes. If the accident
23 sequence is for example, misses a pathway that could
24 lead to a intermediate or high consequence event and
25 that's one of the purposes of this inspection is to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 take a good hard look at the sequences and the reality
2 and see that -- that's a very difficult thing to do,
3 of course.

4 CHAIRMAN RYAN: Yes.

5 MR. COLLINS: Yes, sir?

6 MEMBER SIEBER: I take it one of the
7 supplies to process controls where you don't have
8 safety significance or criticality, but in this
9 performance or the process you generate properties
10 that make somebody else's process fail. For example,
11 grain size in mixed oxide fuel as a big impact on the
12 safety as a fuel when its used in somebody else's
13 reactor pond. I take it none of this applies to
14 process controls to prevent malfunctions or accidents,
15 or what have you that might occur in somebody else's
16 facility, is that correct?

17 MR. COLLINS: This process would not do
18 that. Now we do have a vendor inspection group that
19 go into these facilities. I'm not terribly familiar.
20 Maybe the industry can give you the information. At
21 some frequency and they do look at those kinds of
22 things.

23 MEMBER SIEBER: Yes. But they do that on
24 the end user's license. The end user buys something
25 from Facility A who is a supplier. When it does that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 vendor surveillance takes over. But it's not
2 particularly clear to me whether a facility will
3 produce something specifically for another licensee to
4 use where vendor surveillance would come in, or if
5 they're just stockpiling it. For example, there's a
6 lot of stockpiled stuff around the country that, you
7 know could be used for fuels or isotopes, or what have
8 you. I take it there's no controls on that except for
9 the safety controls?

10 MR. COLLINS: Under this process we're
11 going to -- we intend to look at the safety controls,
12 not the quality of product controls.

13 Next slide, please.

14 So the key attributes under this
15 cornerstone are:

16 Protection against external events;

17 Design to identify the accident sequence
18 initiators;

19 The accident sequence initiator frequency,
20 and;

21 Corrective action program.

22 Next slide, please.

23 This slide shows, and it's very busy, but
24 you have to --

25 CHAIRMAN RYAN: I'm sorry, Doug. Would

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 you just back up to that other one? Where does a
2 licensee's inspection program come in? I guess that's
3 a different chorus, though.

4 MR. COLLINS: The licensee's --

5 CHAIRMAN RYAN: You have protection
6 against external events, design to identify accident
7 sequence initiators, accident sequence initiator
8 frequency and corrective program action.

9 MR. COLLINS: Yes.

10 CHAIRMAN RYAN: Okay. That's just at the
11 key attribute stage, the implementation comes --

12 MR. COLLINS: Yes, sir.

13 CHAIRMAN RYAN: Okay. I got it. Thanks.

14 MR. COLLINS: Here is the current status
15 of accident sequence initiators including down to
16 potential inspection activities to verify that a key
17 attribute is acceptable. Some of these inspection
18 activities we have not had the opportunity to vet them
19 well with external stakeholders at this point, because
20 this is a relatively new concept.

21 Next slide, please.

22 DR. FLACK: Oh, before you leave that one.

23 MR. COLLINS: Yes.

24 DR. FLACK: Sorry. Looking at the
25 corrective action program, I guess, on that last slide

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 and it talks about findings. I mean, as far as
2 events, I mean are you looking into that for sort of
3 repeat failures, they're not getting it fixed? Is
4 that where it comes into play in increasing the
5 accident initiator in some way?

6 MR. COLLINS: Yes.

7 DR. FLACK: I'm trying to get --

8 MR. COLLINS: To see whether or not
9 they're having events that are caused by accident
10 sequence initiators in a way that they didn't
11 understand or they are not taking action appropriate.
12 It's basically to do a slice of accident sequence
13 initiator factings in their corrective active program.

14 DR. FLACK: Okay. And that itself is a
15 crosscutting issue, right? Because it could effect
16 not only action sequences, but it could effect other
17 controls and so on. So that's going to be this new
18 piece that's coming up, I guess, that you'll be
19 talking about.

20 MR. COLLINS: As contemplated now this,
21 the oversight would involve, which is by the way the
22 reactor program. During a technical inspection area
23 you would look at the corrective action program, take
24 a slice of the corrective action program findings for
25 that technical area.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 DR. FLACK: Yes.

2 MR. COLLINS: In addition, the intent is
3 that we would have an overall programmatic look that
4 these findings that would feed into. And I don't know
5 what the periodicity of that would be; two years,
6 three years, to be determined. But there would be an
7 overall programmatic look and these findings from the
8 individual technical areas that's intended would feed
9 into that overall look, too.

10 DR. FLACK: All right. And that's where
11 you would basically identify if there is a
12 crosscutting issue, I guess at that point, when it all
13 feeds together like that?

14 MR. COLLINS: That's one place. Now if
15 during a year a half a dozen inspections of the
16 individual technical areas in the corrective action
17 area find problems, you know it may cause us to say
18 "Gee, let's see if they have a crosscutting issue
19 here" even before we did the programmatic look. But
20 we're not sure how we're going to do that. We're not
21 sure how we're going to accumulate and assess that;
22 that's to be determined.

23 DR. FLACK: Yes. I'm trying to understand
24 the technical area versus cornerstone.

25 MR. COLLINS: Ah, cornerstone.

1 DR. FLACK: You should be cornerstone.
2 Okay. Okay. Yes, that makes more sense.

3 MEMBER BLEY: Dennis Bley. I suppose if
4 we implement the changes, then charts like this one
5 will provide first level guidance on how one might
6 revamp the inspection guidelines that go along with
7 this, is that right, or is that in the process?

8 MR. COLLINS: That's the intent. The
9 intent is once we've come to a decision on the
10 inspection activities, the people who would look at
11 this to revise the individual inspection programs
12 would start with this as the -- I mean, you might even
13 say these would be maybe the objectives in the
14 procedure or something, or you know the key areas in
15 a procedure.

16 MEMBER BLEY: Okay. And that occurs out
17 in the region then, right?

18 MR. COLLINS: Well, NMSS has the
19 responsibility to develop the inspection procedures.
20 I'm assuming, though, that you guys get involved, the
21 inspection staff.

22 MEMBER BLEY: Oh, okay.

23 MS. SIMON: Yes, that's correct.

24 CHAIRMAN RYAN: And, Doug, on this point
25 and for Dennis' benefit I think you said that this is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 kind of your first approach here and that you're going
2 to stakeholder input and licensing input on this
3 process and then maybe fine tune it based on that
4 input?

5 MR. COLLINS: Yes. This is recently
6 developed and we really have not given industry much
7 opportunity to give us feed back on this because it
8 was done after the -- we've had one meeting I think
9 with the stakeholders --

10 MS. SIMON: One meeting on this.

11 MR. COLLINS: -- since -- since --

12 CHAIRMAN RYAN: Okay. That's fine. But
13 that's a work in progress? We understand.

14 MEMBER BLEY: Yes, thanks. I guess I
15 understood that part, but I didn't understand
16 completely how this would all weave together
17 eventually. So this is helping a lot.

18 MR. COLLINS: Let's see, slide 17. Let's
19 see what 16 is. Okay. Safety Controls. I moved
20 ahead. The safety controls cornerstone. I don't
21 think I'll talk about this yet. I don't know.

22 This is a new cornerstone. I use the term
23 "new cornerstone" but in fact when you look at the
24 details it's very similar to some of the cornerstones
25 we discussed in the June meeting. The objective of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 this cornerstone is to ensure the availability,
2 reliability and capability of IROFS, NCS controls and
3 other safety controls. These IROFS, NCS controls and
4 other safety controls prevent or limit the frequency
5 of, or mitigate the consequences of accident sequences
6 that could lead to intermediate or high consequence
7 events.

8 Next slide, please.

9 Safety controls for this cornerstone are:

10 Staff performance;

11 Procedure quality;

12 Facility and equipment performance;

13 Design;

14 Configuration control;

15 Corrective action program.

16 And these were the key attributes that we
17 discussed during the June meeting, but there we
18 applied these key attributes to the criticality safety
19 cornerstone, the chemical safety cornerstone and to
20 some degree to the radiation safety cornerstone for
21 the ISA related aspects of that.

22 Next slide, please.

23 DR. FLACK: Just before you leave that
24 one.

25 MR. COLLINS: Yes?

1 DR. FLACK: Which slide are we on? Okay.

2 MR. COLLINS: I was on 17.

3 DR. FLACK: Yes. The design one, I guess
4 I was looking at. I'm looking at the other ones as
5 things that you can really get feedback on from
6 observing the plant's observation. But the design one
7 is sort of built in there, isn't it? I mean, how is
8 that piece fit in?

9 MR. COLLINS: If you'll wait just a
10 second, when we get to the big diagram used for this
11 cornerstone you will see the kinds of things.

12 DR. FLACK: Okay.

13 MR. COLLINS: We're looking at design
14 changes.

15 DR. FLACK: Okay.

16 MR. COLLINS: As we discussed last time,
17 though, when we license these plants we don't do a 100
18 percent review of the design either in licensing or in
19 inspection. And so we may end up with people taking
20 smart samples of things that are fairly close to
21 original design. Well, not at these plants. Maybe
22 fairly close to the current ISA, but not the ISA that
23 we looked at when we approved the ISA originally.

24 DR. FLACK: Okay. So there's really two
25 pieces there I think you're talking about. One is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 changing the design as it operates. But the other is
2 that the design as you know it is not exactly what is
3 there the way it was built. And so you find things
4 that may have been different from square one, often
5 times or you know from the beginning, is that right?

6 MR. COLLINS: It could be, yes.

7 DR. FLACK: Which may not be in the ISA at
8 that point because it didn't pick it up, right?

9 MR. COLLINS: Well, for example annually
10 I think you have to submit a revised ISA summary. And
11 NMSS will look at that ISA summary, the changed
12 summary and they'll make some decisions as to what --
13 this is the current process, what happens in the
14 future I'm not sure. What ought to be looked at by
15 the regions.

16 DR. FLACK: Okay.

17 MR. COLLINS: These are the high risk
18 issues. And they'll send them over to the region and
19 say "When you do your" -- it's not called design
20 control, but whatever the procedure is, "focus on
21 these areas." So that could be some of what this
22 would --

23 DR. FLACK: That would be like a change
24 that they've found.

25 MR. COLLINS: Yes.

1 DR. FLACK: Well, I'm thinking of the ones
2 that there was no change but you discovered something
3 or suddenly recognized something there that you didn't
4 know before existed, let's see.

5 MR. COLLINS: Yes.

6 DR. FLACK: And maybe that needs an IROF
7 now because there's a sequence there that suddenly you
8 find exceeds the performance criteria --

9 MR. COLLINS: Yes.

10 DR. FLACK: -- unless they make an IROF
11 out of it within that sequence.

12 MR. COLLINS: Yes.

13 DR. FLACK: That would be a different part
14 of the design piece that you're looking at, right? I
15 mean there's two different things there going on.

16 MR. COLLINS: Yes.

17 DR. FLACK: I see. Okay. I was just
18 trying to understand that.

19 MR. COLLINS: But again, how this is going
20 to be done exactly is to be determined.

21 Where are we? Slide 17. How about slide
22 18?

23 This slide here. This slide shows the
24 safety controls cornerstone including the proposed key
25 attributes and inspection areas.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 And just like accident sequence initiators
2 we've not had the opportunity to have much interaction
3 with the stakeholders other than the top level of this
4 slide.

5 Next slide, please.

6 The remaining hazards analysis-based
7 cornerstones, basically they're not a lot different
8 then in the operations-based. They're emergency
9 preparedness, public radiation safety, occupational
10 radiation safety and security/material control and
11 accounting. They are essentially the same as we
12 talked about before, except here we did make a minor
13 change from "worker" to "occupational" to be
14 consistent with the ROP.

15 CHAIRMAN RYAN: Can I go back to the
16 previous diagram?

17 MR. COLLINS: Yes, sir.

18 CHAIRMAN RYAN: I was trying to get my
19 head around the top numbered criteria. And I guess
20 they're in no particular order. I mean, I always
21 think about the fact that you start out with facility
22 equipment. I mean you're going to start with the
23 design, you have facility equipment, you have
24 configuration control and then, you know governing
25 both of those is staff performance and product quality

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 and then corrective action program. There's no
2 particular meaning for this sequence across the top?

3 MR. COLLINS: No, there is not.

4 CHAIRMAN RYAN: Okay. All right. Then I
5 think about that in any order I want?

6 MR. COLLINS: Except that I hope that
7 they're close to the way ROP did it, in the same
8 order. But there's no priority.

9 CHAIRMAN RYAN: Okay. Great. Thanks.

10 MR. COLLINS: Now this slide. I think we
11 talked about -- I think we talked about that. Slide
12 20.

13 I want to talk just a little bit about
14 now, a very little bit about the operations-based
15 cornerstones that we've talked about in June.

16 The notable changes are -- well, here they
17 are, of course: Criticality safety, chem safety,
18 radiation safety, emergency preparedness,
19 security/material control and accounting. The notable
20 changes, none of them are very significant. Is that
21 we remove "systems" from the safety cornerstone, the
22 word "systems." We consolidated public and worker
23 radiation safety. And we decided that we would at
24 this point have security/material control and
25 accounting under the same cornerstone.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Next slide, please.

2 And rather than walk you through it in
3 detail because we did that in the last meeting, this
4 is basically the operations-based cornerstone with
5 those modifications that I talked about just a second
6 ago.

7 Next slide, please.

8 We then looked to do pros and cons and
9 how these two sets of cornerstones might meet the
10 goals and interests that I discussed earlier. And we
11 concluded that both sets of cornerstones meet two key
12 controls.

13 1: They meet the Commission direction,
14 and we believe both would result in a process that
15 could lead us to reasonable assurance that the
16 strategic plan mission goals and outcomes will be met.

17 Next slide, please.

18 So doing pros and cons, these are the pros
19 and cons for the hazards analysis-based cornerstones.
20 And the pros:

21 They result in an oversight framework
22 across NRC program areas that are very similar and
23 that result in a simpler and more effective
24 communication and understanding among people who are
25 already familiar with the ROP;

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 They are organized in a way that licensees
2 did the hazard analysis and controls development as
3 they did their ISA;

4 The key attributes for the ISA-related
5 activities are integrated into one cornerstone and
6 that reflect the way the ISAs were developed rather
7 then dispersed in one cornerstones and the other
8 option;

9 And the cornerstones will be consistent
10 across types of licensees, that is we would not for
11 example have to delete criticality safety from certain
12 licensees who don't deal with enriched uranium.

13 The cons:

14 Because of the complexity of the accident
15 sequence initiator cornerstone, stakeholder
16 communications regarding this cornerstone could be
17 difficult;

18 The other is the accident sequence
19 initiators cornerstone is not the same as initiating
20 events; initiating events are only part of it in the
21 ROP and might be assumed to be the same by some
22 external and external stakeholders as a matter of
23 communication.

24 DR. FLACK: I just really don't see much
25 difference between the two in some way. I mean, in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 either case something has to set the sequence off.

2 MR. COLLINS: Yes.

3 DR. FLACK: That's what you're looking
4 for. And then you have some conditional probability
5 that could change depending on the controls that could
6 influence the likelihood of the sequence as well as it
7 appears as a sequence. But still, you know I don't
8 really see much difference. You know, it's just a
9 matter of the way you're looking at it I think. But,
10 anyway, that's just my opinion.

11 MEMBER SIEBER: Maybe that's why they're
12 worried about.

13 DR. FLACK: What's that?

14 MEMBER SIEBER: Maybe that's why they're
15 worried about it because people don't see much
16 difference.

17 DR. FLACK: Yes.

18 MR. COLLINS: Next slide, please.

19 We reviewed the pros and cons of the
20 operations-based cornerstone.

21 Pros:

22 They are organized along safety program
23 lines similar to Part 70 and how licensees implement
24 their safety programs;

25 They are easy to communicate with

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 stakeholders because they use day-to-day operations
2 structured particularly in-plant stakeholders,
3 operators and so forth.

4 The cons:

5 Key attributes for ISA-related inspections
6 are similar across cornerstones, thus separating what
7 might be come inspection into separate areas. For
8 example, a failure in a design of a system could
9 impact several cornerstones and thus could move a
10 licensee across an action matrix for a single kind of
11 a problem;

12 Another con is that we would result in two
13 very different regulatory frameworks for oversight
14 across the Agency, that is we would have one framework
15 for FCOP and another for the ROP, when in fact having
16 different frameworks is not necessary;

17 And cornerstones would not be the same
18 across licensees, that is under the example
19 criticality safety would be applicable to some and not
20 to others.

21 MEMBER SIEBER: Would that change the
22 severity of an event and a violation just because of
23 the way we define it or it involves multiple
24 cornerstones?

25 MR. COLLINS: I don't --

1 MEMBER SIEBER: Would that be an artifact
2 of the structure or is that a result of the incident?

3 MR. COLLINS: The things that come to mind
4 have me coming to the conclusion it would be an
5 artifact of the structure. Because if you have --

6 MEMBER SIEBER: Which is what I was
7 thinking, too, which isn't good, right?

8 MR. COLLINS: That's not good.

9 MEMBER SIEBER: Okay.

10 MR. COLLINS: That's the point, it's not
11 good.

12 MEMBER SIEBER: So how would you deal with
13 that? Does it just promote that?

14 MR. COLLINS: The operations-based
15 cornerstone, and we've talked about that, we would
16 have to consider that somehow in coming up with safety
17 significance and in an action matrix. I mean, if you
18 have a yellow in criticality safety and a yellow in
19 chemical safety for the same failure, that may not be
20 the right thing to do to give somebody two yellows and
21 them move them, if we were to go that way.

22 MEMBER SIEBER: Yes. On the other hand
23 since you brought those two up, I think I would get
24 excited and upset if somebody had two yellow
25 violations in that area. So, I'm not sure that's all

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 that bad but if I had a comment on the whole
2 structure, it would be in this area.

3 CHAIRMAN RYAN: You know, the last one I
4 guess I understand it, but I guess what are you going
5 to do about it? Nothing is the answer. Different
6 licensees are different, but a lot more than reactors.
7 And, you know criticality safety really doesn't apply
8 to natural uranium. So I don't know why that's a con.

9 MR. COLLINS: Well, it could be a con
10 because people who deal with enriched uranium might
11 have another cornerstone that could go bad and cause
12 them to move across; maybe that's right, by the way.

13 MEMBER SIEBER: Yes.

14 MR. COLLINS: Maybe move across the action
15 matrix in a way different than others.

16 CHAIRMAN RYAN: Well, it's different but
17 it's appropriate for that licensee. So the
18 appropriateness for the licensee is what I would focus
19 on rather than the fact that, you know a depleted
20 uranium licensee and an enriched uranium licensee are
21 going to have differences in their cornerstone. You
22 know, the common thread here is that they each have
23 one that's appropriate for the risk associated with
24 their materials and their system and the functions
25 they are conducting with it, right?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. COLLINS: Yes, sir.

2 CHAIRMAN RYAN: Okay.

3 DR. FLACK: You know, when I look at the
4 two, when I compare the two I really see that you can
5 see things like the point that Jack brought up
6 actually could play out differently, it could in some
7 cases increase, some cases decrease. Because you're
8 really looking at these things from two different
9 perspectives.

10 I mean with this one you're really looking
11 at the program and how it's safe and it divides safety
12 criticality chemical as programs in and of themselves.
13 Whereas, the one that you're proposing now looks at
14 accidents. And accidents can happen in any different
15 way, shape or form. And what you're interested in is
16 preventing accidents and keeping equipment in place
17 that in case you do have one, it's going to respond
18 and it's going to be available to respond.

19 And it's more that kind of thinking on
20 accidents, on how they can occur and how they can be
21 mitigated versus what can I do to maintain a program,
22 which is more like the way of the first set. Am I
23 missing something? Is that pretty much the difference
24 between these two; it's actually the way you actually
25 see them through the cornerstones as being

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 fundamentally in a way different from one another?

2 MR. COLLINS: I would agree, yes. And
3 we've tried to accommodate in the names, although we
4 may not have picked the right names.

5 DR. FLACK: Yes. Yes. That's why I think
6 this is a much better approach than the one you're
7 proposing anyway.

8 MR. COLLINS: Next slide.

9 In summary, based on the internal
10 stakeholder comment, we developed a hazards analysis-
11 based set of cornerstones.

12 And we recognize that licensees would
13 prefer the operations-based cornerstones because they
14 believe that this set could result in better
15 communication with workers and members of the public
16 surrounding the facilities.

17 Any questions, any further questions or
18 comments, insights?

19 CHAIRMAN RYAN: I assume that dialogue
20 continues?

21 MR. COLLINS: Yes, it does.

22 CHAIRMAN RYAN: You know, on working
23 through how that hazards analysis-based versus
24 operations-based and maybe there's some continued work
25 in that area.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 DR. FLACK: Yes, I do have a question. It
2 maybe comes out later on in the next one in
3 significance determination process. But, you know
4 when you did the comparison study between the ISA and
5 PRA and I guess part of the SRM said well do the
6 study, give it to the ACRS for review, which was done,
7 there was a report written and so on. And that would
8 help you enhance the process. Did that help enhance
9 in anyway this process or the process you've talked
10 about up to now? Not looking at the significant
11 determination process because I think that probably
12 had some bearing there, the pros and cons, but did it
13 have any effect on your decision on the cornerstones
14 that comparison study?

15 MR. COLLINS: It had an effect on how we
16 developed the cornerstones and the thought process in
17 coming up with key attributes.

18 DR. FLACK: Okay.

19 MR. COLLINS: And, unfortunately Dennis
20 Damon is not here, but Dennis and I had a lot of
21 communication, a lot of which you see here comes from
22 the knowledge that he developed in putting that paper
23 together. So he had significant input into what the
24 cornerstones are and what's in a cornerstone.

25 DR. FLACK: Okay. So it fed back into

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 your development of the four cornerstones?

2 MR. COLLINS: And particularly in the
3 hazards analysis approach to cornerstone.

4 DR. FLACK: Okay.

5 MEMBER BLEY: Mike, this is Dennis.

6 CHAIRMAN RYAN: Yes, Dennis.

7 MEMBER BLEY: Yes. I just wanted to add,
8 I've appreciated the discussion and presentation. And
9 I kind of like what you've done with the hazards
10 analysis-based cornerstones, at least for me they hang
11 together as a unit a little better than the
12 operations-based cornerstones do when I look at them.
13 And they're anchored to the thing we really are
14 concerned about, which is the risk.

15 This issue Jack brought up about the
16 possibility of getting multiple hits is interesting.
17 I'm not sure at all how it shapes out. It's got some
18 baffles. Either way it's an artifice of the way the
19 things are organized. So that's worth some further
20 thought and maybe some examples would be really
21 helpful to understand the implications of it. But
22 there doesn't seem to be really clear to me right now
23 about that other than, yes, it is a possibility.
24 That's it, Mike.

25 CHAIRMAN RYAN: Okay. Thanks, Dennis.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Jack?

2 MEMBER SIEBER: As I think about that too
3 and what suggestion that a change is necessary, but I
4 think it's a very -- or a clarification. Some more
5 thought needs to be placed there and perhaps more
6 clarification so there's no doubt in anybody's mind
7 what it is you're doing.

8 MR. COLLINS: Thank you.

9 MEMBER SIEBER: But I haven't determined
10 in my own mind exactly which is the best approach yet.

11 CHAIRMAN RYAN: And I think we've talked
12 about a little bit, and correct me if I'm remembering
13 this wrong, but you are planning a pilot activity you
14 know once this gets a little bit more firm, is that
15 correct?

16 MS. BAILEY: Well, I think that's
17 something that the implementation is still something
18 we need to work out.

19 CHAIRMAN RYAN: To work out.

20 MS. BAILEY: This is a high level concept
21 that we're going to present to the Commission.

22 CHAIRMAN RYAN: Yes.

23 MS. BAILEY: And then if the Commission
24 approves, we're going to have to have a lot of work to
25 do with both our external and internal stakeholders to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 develop the details. And part of that is the
2 implementation.

3 CHAIRMAN RYAN: Okay. So that's on the
4 agenda for down the line.

5 MS. BAILEY: Down the line.

6 CHAIRMAN RYAN: No, I understand.

7 MS. BAILEY: But that's on the direction
8 we get from the Commission.

9 CHAIRMAN RYAN: Absolutely. Okay. Great.
10 That's fine.

11 MS. BAILEY: And by the way, this is
12 Marissa Bailey.

13 CHAIRMAN RYAN: Thank you.

14 MR. COLLINS: And with that --

15 MEMBER SIEBER: You want to take a break?

16 CHAIRMAN RYAN: If you like.

17 MEMBER SIEBER: If you want to.

18 DR. FLACK: Well, we're probably ahead of
19 schedule.

20 CHAIRMAN RYAN: I think we're pretty way
21 ahead of schedule. It's for a break at 10:30, which
22 is 40 minutes from now.

23 So, okay, go ahead.

24 MS. KOTZALAS: Okay. Unfortunately, Dr.
25 Damon is recovering from an injury and is not able to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 be with us here today. So I will present the
2 conceptual types of a fuel cycle significance
3 determination process that we're considering.

4 We'll attempt to answer your questions,
5 but it is likely we will need to take an action to
6 take the questions back and provide you a response.

7 CHAIRMAN RYAN: Fine.

8 MS. KOTZALAS: Next slide.

9 One thing to remember is that the
10 Commission has not approved for us to develop an SDP.
11 However, we have integrated the knowledge that we
12 gained from the ISA/PRA comparison paper and the
13 cornerstones to identify three conceptual SDP types,
14 and we will propose further development of one of
15 those types as next steps in enhancements to the FCOP.

16 The SDP types are applicable to the ISA-
17 related cornerstones and would be apply to either set
18 of cornerstones that Doug just described.

19 For the non-ISA-related cornerstones the
20 SDP will be a deterministic process similar to the
21 deterministic evaluation within the ROP's SDP.

22 Next slide.

23 Okay. We began thinking about SDPs by
24 identifying what the desired characteristics of it
25 should be. And we determined that any SDP must be:

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Realistic and accurate; practical and consistent. It
2 must also be cost effective.

3 And with this in mind we considered three
4 conceptual types which we refer to as: Deterministic,
5 case-by-case and PRA-based.

6 In the next few slides I'll go over a
7 general description of each type and give you the pros
8 and cons.

9 First we'll talk about the deterministic
10 type. This type of evaluation is a deterministic
11 evaluation of the safety significance based on
12 qualitative criteria, not actual numerical risk
13 quantification. This process will be based on an
14 evaluation of the reduced number and quality of
15 controls and on the duration of the deficient
16 condition. The revisions that are refined risk-index
17 methods such as described in the standard review plan
18 would be a part of the approach.

19 Apro of this type is that it is simpler
20 and less resource intensive than the other two types
21 and it recognizes the limitations of quantitative data
22 and tools available and applicable to the fuel cycle
23 industry.

24 The assignment of controls to general
25 categories would be more objective than justifying

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 assignment of generic failure data to plant-specific
2 controls.

3 And the last pro is that this type will be
4 standardized, and therefore the significance
5 evaluation will be more predictable and consist across
6 licensees and the types of deficiencies.

7 Now a con to this approach is that it is
8 least informed by best analysis and data available,
9 therefore it is the least realistic and precise of the
10 three approaches.

11 Next.

12 DR. FLACK: I'm sorry. Before you leave
13 this, anyway I'm trying to understand a little bit
14 further. The second bullet says "But would have
15 similar risk and safety significance objectives to
16 other types." To other types being the other types
17 being using PRA in ISA and understanding the
18 significance?

19 MS. KOTZALAS: The other types are, yes,
20 the PRA-based and --

21 DR. FLACK: Right. So I kind of see --
22 you know how does one compare a deterministic process
23 where you're going to be in many ways subjective on
24 the way you pick things to a process that's
25 quantitative and then end up with the same result?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Without doing the risk assessment you wouldn't know.
2 But I just see a difference there.

3 Maybe Dennis -- I know probably Dennis and
4 I would talk about this for a while at this point.

5 MEMBER BLEY: Dennis is here. Meaning
6 Dennis Damon.

7 DR. FLACK: Yes. And also to both
8 Dennises.

9 CHAIRMAN RYAN: And Dennis Bley, sure, why
10 not?

11 MEMBER BLEY: Yes. Well, you know I think
12 this kind of discussion probably is better after being
13 built.

14 MS. KOTZALAS: Yes.

15 MEMBER BLEY: Because there are issues in
16 the pros and cons that are worthy of discussion. And
17 I think they're highly stylized and over simplified in
18 that.

19 DR. FLACK: Right. Okay.

20 MEMBER BLEY: And we can talk about a
21 little more if you'd like.

22 DR. FLACK: Okay. And with respect to
23 cons, I would also add that this would be a more
24 conservative approach because you would have to be, in
25 a sense. And also completeness could be questioned.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 I mean, there's other cons that I could come up with
2 as to this -- and the margins. How does one know
3 margins and so on, and how it degraded and going and
4 finding it, and things like that. I just find there
5 would be a number of cons. But that's --

6 CHAIRMAN RYAN: It seems to me that, you
7 know these three slides of deterministic and case-by-
8 case and the PRA are something we'll be thinking
9 about. And I'm thinking we'll have you at our next
10 meeting and, you know maybe when Dennis is back with
11 us we can be prepared for a more detailed discussion
12 and that kind of thing.

13 MS. KOTZALAS: Yes.

14 CHAIRMAN RYAN: Because I think, you know
15 there's going to be a range of views on the strengths
16 and weaknesses of each one. And, you know we'll have
17 to be thinking about what we would want to advise
18 about that and we want to be thinking about how that
19 works. And of course, you've got stakeholder input
20 from licensees and others.

21 So, I think we've recognized that it's a
22 ongoing and somewhat complicated thought process to
23 get through. So we appreciate that to have this
24 opening discussion.

25 MEMBER BLEY: This is Dennis again.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 I might not comment and just say from what
2 John says to get a hint at where the problems are if
3 we say the first one is more conservative but it also
4 has some completeness issues. Well, if you have
5 completeness issues, you might not be conservative.
6 So there's a whole range of --

7 CHAIRMAN RYAN: Yes, that's right.

8 MEMBER BLEY: -- issues that really ought
9 to be worked out in more detail. And I think that's
10 almost worthy of a meeting itself.

11 CHAIRMAN RYAN: Yes. No, I think we may
12 end up with that. But I think that's probably one of
13 the core areas where we want to really understand your
14 thought process in a lot detail so when we do offer
15 advise in a letter we want to be fully informed.

16 MS. KOTZALAS: I agree. And I actually
17 would appreciate further in more detailed discussions
18 with the Committee on the types of SDPs. For it to be
19 a beneficial discussion we do need to have our risk
20 expert.

21 CHAIRMAN RYAN: Well, maybe we'll just
22 take an action to have some more planning discussions
23 after this meeting to think about how we would
24 structure that, what we would want to talk about--

25 MS. KOTZALAS: Okay.

1 CHAIRMAN RYAN: -- and include and, you
2 know what materials you have available to us and all
3 that so we can plan a good meeting and get around
4 that.

5 MS. KOTZALAS: Okay.

6 CHAIRMAN RYAN: Fair enough?

7 MS. KOTZALAS: Fair enough.

8 CHAIRMAN RYAN: Okay. Dennis, does that
9 cover your thoughts as well, Dennis Bley?

10 MEMBER BLEY: I liked that a lot. I liked
11 that.

12 CHAIRMAN RYAN: Okay. Thank you.

13 MS. BAILEY: So I think Margie will be
14 reading slides from this point on.

15 MS. KOTZALAS: Okay. The next is the
16 case-by-case type. And this type of evaluation is
17 performed on a case-by-case basis and is informed by
18 the ISA. The evaluations would be performed by the
19 staff with information from licensees and will
20 evaluate the significance of inspection findings when
21 they occur.

22 The conservatisms in the ISA results would
23 be adjusted using standardized guidance and data and
24 needed. The staff considers this type to be a
25 simplified quantitative method.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Some of the pros of this type are:

2 The significance would not be as accurate
3 as a PRA-based, but would provide order of magnitude
4 results and this order of magnitude is really what is
5 needed for an SDP to determine the four categories,
6 the very low, the low to moderate and onward;

7 This type would be standardized and
8 therefore the significance evaluation would be
9 consistent across the licensees;

10 It will be less resource intensive than
11 PRA-based type since we would be doing this on a case-
12 by-case basis as the inspection findings were made;

13 And this type would be more generic and
14 simpler than plant-specific.

15 Now con is that:

16 The quantitative risk-technology for fuel
17 cycle is not sufficiently developed and significant
18 resources would be needed to evaluate the significance
19 of inspection findings.

20 And another significant con is that once
21 we have an inspection there is a limited amount of
22 time that we have to make a determination of the
23 significance. So any technical difficulties that we
24 would run into in evaluating, you know finding the
25 data and determining the process might preclude this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 type of evaluation providing timely support of an
2 ongoing oversight process.

3 Next --

4 MEMBER BLEY: Dennis Bley.

5 I agree with having a bigger discussion
6 later, but there's a number of myths that are imbedded
7 in these things that are a little troublesome. And,
8 you know the truth is if you really do a good
9 qualitative job, that's a great deal of what you need
10 to do on a PRA-based approach. The PRA is absolutely
11 developed. Well, there's been a lot of PRA process
12 facilities around the globe It's not that it's a
13 bugaboo.

14 And I like their case-by-case because
15 that's really what PRA is. You do it to the depth
16 that you need for the situation and for the possible
17 consequences.

18 DR. FLACK: Well, I was just going to add
19 that all these cons, you know you look at them and at
20 one point reactors were in the same stage of
21 development. I mean, they didn't have the PRAs. They
22 would use the same sort of items and say it's going to
23 be too expensive, it's going to cost us. And now I
24 mean we're in a whole different paradigm with PRAs and
25 reactors. And it's just a matter of growing through

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 it. But, you know keeping it as probably the best way
2 of going, I would think. But that was just a comment.

3 CHAIRMAN RYAN: Well, I'm thinking to add
4 to the more detailed meeting later, you know one of
5 our members, Dr. BANerjee, has done an awful lot of
6 work in this kind of hazards analysis in the chemical
7 industry.

8 DR. FLACK: Yes.

9 CHAIRMAN RYAN: So maybe his insights
10 would be helpful and we could shape some more
11 additional discussions on this topic with that added
12 input.

13 MEMBER SIEBER: Yes. I do think there is
14 sort of a difference between reactor-type PRAs and
15 chem plant-type PRAs because reactor you only have
16 what's the accident. You melt the core and you
17 release it. In a chemical plant you don't have that
18 kind of very severe accident and you have lot of
19 little smaller accidents which would be chemical
20 safety, radiation safety and so forth. It really
21 doesn't in my mind lend itself to a single PRA, but a
22 bunch of little PRAs that have a lot of elements to
23 them with very little standardization across the
24 industry. So it's not clear to me that PRA may have
25 some precision to it provided you have the database to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 support it to know what the risk really is. But it's
2 not clear to me that it's worth the effort.

3 DR. FLACK: Well, I think you'd need small
4 PRA in any case. One of the questions, of course,
5 would be with all these processes which are the most
6 risky processes.

7 MEMBER SIEBER: Then you got to decide
8 what thing you don't want the most. You know, do you
9 want some guy hurt or do you want him overexposed?

10 CHAIRMAN RYAN: Well your key point, Jack,
11 which I think to me is at the root of it having worked
12 in facilities that were both radiological and
13 chemical, you know in terms of mixed waste treatment,
14 it's a very different animal than a reactor where the
15 big accident sequence is the same and the reactor
16 melts, for whatever reason. There's lots of ways it
17 could melt.

18 So, I think that trying infuse some of the
19 smart ideas that we're hearing a little bit about
20 today and we'll hear more about is really the right
21 track. Now whether we're going to be a 100 percent
22 happy all around and we're going to be in a learning
23 environment, I guess is the best way to say it as it
24 gets developed and implemented. And I think if it's
25 approached in that way, it could be done. And I think

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 that's where you end up getting to the point that John
2 made, is that you end up with a smart approach to PRA
3 in this area.

4 MEMBER SIEBER: And I plan to keep an open
5 mind with regard to whatever the staff decides.

6 CHAIRMAN RYAN: Yes. Me, too at a future
7 meeting. We probably ought to think about perhaps
8 getting some licensee stakeholder views on how they're
9 thinking about it because they're the owners and
10 operators of these facilities. So if you had dialogue
11 with them or we could be engaged with them a little
12 bit on their views, that would be helpful to us.

13 DESIGNATED FEDERAL OFFICIAL WIDMAYER: You
14 either lost Dennis or you've got somebody new.

15 CHAIRMAN RYAN: Did we have somebody else
16 join the phone call besides Dr. Bley?

17 MEMBER BLEY: No. Dennis just clicked in
18 and maybe that's what you heard.

19 CHAIRMAN RYAN: Okay. No problem.

20 MEMBER BLEY: But I got a thought on this
21 last discussion.

22 One, the advantage of PRA isn't precision.
23 The advantage is considering a broad, integrated look
24 that incorporates and encompasses uncertainty.

25 Two, there's a lot of small accidents that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 you could model it around the reactor but need to
2 limit it in low-consequences. It's chosen not to
3 model those in detail because they don't effect the
4 overall risk. That's one of the things that are
5 getting in our way here is we think we have to model
6 both consequence events at the same level that you
7 model others. It's not true.

8 CHAIRMAN RYAN: Okay.

9 MS. KOTZALAS: Okay. Now I'll discuss a
10 PRA-based type of SDP. And this type of evaluation is
11 based on a fully quantitative PRAs that would be
12 performed before the SDP process is applied. It's
13 analogous to the SDP and the ROP. It would require a
14 full PRA for all processes at all facilities.

15 This type would also require inspection
16 notebooks or similar guidance. And these PRAs would
17 be performed by licensees due to the great variety of
18 processes and designs and their unique in proprietary
19 nature.

20 A pro of this approach is that it would be
21 based on each licensee's PRA. Therefore, it would use
22 the licensee's best information and analysis. It
23 would be performed ahead of time and therefore the
24 results would be readily available to the staff when
25 the inspection finding occurs. Thus, the significance

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 evaluation would be based on a higher quality of risk
2 information than the other types, and so the results
3 would be more realistic.

4 A con is that this type would likely
5 require prohibitively large resource expenditures for
6 both NRC and licensees to develop and implement. This
7 is partly because the tools and data for fuel cycle
8 PRAs would have to be developed, but also because
9 large resources would be needed to the relatively
10 large number and variety of processes to be evaluated.

11 Another con is that the PRAs would not be
12 standardized because each licensee would carry out its
13 PRA differently. Therefore, the SDP may not be
14 consistent across licensees. And NRC development of
15 standards, tools and data would help, but it would
16 require extensive resources in time.

17 And the final con is that the quantitative
18 risk technology for fuel cycle is not sufficiently
19 developed to support this type of analysis. To
20 support it failure data would need to be developed,
21 computer analysis capabilities for a wide variety of
22 fuel cycle risk phenomena would need to be developed
23 and probabilistic variation of magnitude of
24 criticality events, chemical releases and weather
25 would also have to be developed for fuel cycle

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 situations.

2 The next slide.

3 So based on a careful analysis of the pros
4 and cons and the realization that resource expenditure
5 in the future are going to be very difficult based on
6 a flat or declining budget, the staff is going to
7 recommend developing a deterministic SDP. The
8 industry generally supports this recommendation,
9 however both the staff and the industry understand
10 that further discussion of the development of this
11 method is needed.

12 CHAIRMAN RYAN: Thanks very much.

13 Well, we're at a point where we're going
14 to have Jonathan with some additional materials and
15 conclusions and recommendations, and then stakeholder
16 comments. But just to recognize the time, why don't we
17 take a 15/20 minute break here and we'll come back at,
18 say, 10:20 and then finish up with those two
19 presentations. Is that suitable to everybody?

20 All right. With that we'll stay adjourned
21 until 10:20.

22 (Whereupon, at 9:57 a.m. off the record
23 until 10:23 a.m.)

24 CHAIRMAN RYAN: All right. Could we come
25 back to order, please?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 And with that, Margie, I turn it back to
2 you I think.

3 MS. KOTZALAS: Okay. I would like to now
4 turn it over to Jonathan --

5 CHAIRMAN RYAN: Okay. I'm sorry. To
6 Jonathan. Yes, that's right. Very good.

7 MR. DeJESUS: In the next couple of slides
8 what I'm going to do is present the staff's conclusion
9 and recommendation. And I first would like to start
10 with and restate the direction that we got from the
11 Commission. The concise paper comparing ISAs and
12 PRAs, that would be the ISA/PRA comparison paper.

13 It made the modest adjustments to the
14 existing oversight process to enhance its
15 effectiveness and efficiency. That's the corrective
16 action program method.

17 Develop a set of cornerstones that could
18 be applied to the FCOP.

19 And the Commission said that once the
20 cornerstones are developed and the ISA/PRA paper is
21 complete, that the staff should provide the Commission
22 an assessment of the work accomplished and the
23 recommendations for next steps. And that's basically
24 our direction for the SECY paper that's due in early
25 October.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 And with that, we're proposing this set of
2 elements as the recommendations for next steps. At
3 first this addresses the cornerstones placed to
4 further develop all cornerstones in the hazards
5 analysis-based option.

6 And then we're proposing to begin use the
7 concept of performance deficiency and then develop the
8 deterministic type of SDP. And also develop a
9 performance assessment process based on the more
10 objective and predictable SDP, and that includes the
11 action matrix and considers the crosscutting areas.

12 And develop of a supplemental inspection
13 program based on licensee performance, and further
14 revise the enforcement policy to address that change
15 from severity levels to the significance levels of
16 very low, low to medium, substantial and high
17 significance.

18 That's basically the staff's presentation
19 and recommendation to the Commission.

20 CHAIRMAN RYAN: Any questions? Dennis, do
21 you have any other comments or questions at this
22 point?

23 MEMBER BLEY: No, no additional comments.

24 CHAIRMAN RYAN: Anything else?

25 DR. FLACK: Well, I'm just looking at the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 conclusions and recommendations. I don't see the word
2 "risk" at all in any of them. And, in fact, I see PB
3 and deterministic, and then the performance assessment
4 is going to be based on that, which that means that
5 it's based on deterministic-type of analysis. And
6 then everything flows from there.

7 Well, I guess that raises the question
8 what, if anything, had the comparison ISA/PRA paper
9 brought to the table on these conclusions and
10 recommendations and all the discussions that took
11 place there? And I understand that there were some
12 good insights in developing the cornerstones. But in
13 coming to these conclusions and recommendation did it
14 play any role at all in making them?

15 CHAIRMAN RYAN: I guess I would simplify
16 your question from my point view, too. Is this going
17 to be applied in a deterministic way to the licensees?
18 It sounds like the answer is yes.

19 MR. DeJESUS: In a qualitative way of
20 doing things. And the ISA/PRA paper came into place
21 in one of the types that we considered for the
22 significant determination process, and that's the
23 case-by-case basis. And when Dennis Damon developed
24 that paper, that's the basis for that case-by-case
25 type SDP. And that's his example in section 5 of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 paper, it's basically how the case-by-case SDP would
2 work.

3 CHAIRMAN RYAN: I mean, I understand that
4 part. But in terms of implementation there's going to
5 be no further treatment of risk significance or risk
6 information and how it's applied by staff.

7 MR. DeJESUS: And will the cornerstone as
8 we revise the --

9 CHAIRMAN RYAN: That's not my question.
10 We have a basis in risk for some of the things you've
11 picked, but the way you're going to use them is
12 completely deterministic. Is that fair or not?

13 MR. COLLINS: Let me put that off for
14 Dennis. But when Dennis uses the term "deterministic"
15 and what margin he talked is it has inputs and some of
16 the thoughts that come from the ISA/PRA paper. Part
17 of that developing, what we might call deterministic,
18 seeks and intended to use some of that information.
19 But it's not well flushed out. And, you know when Dr.
20 Damon talks about it, you can tell that it's not just
21 "if then," "if green go this way." I mean, there is
22 some of that in what he considers and what he's
23 briefed management on to be deterministic. So it's
24 not totally --

25 CHAIRMAN RYAN: Yes. And I think that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 detail of how risk is considered and used is really
2 what the Committee is probably most focused on at this
3 point. Because it's not -- and we understand that
4 this is developing process, but that particular point
5 is going to really shape I think how the Committee
6 views the overall process. Because until there's some
7 common understanding of how its used. I mean, not
8 used as a basis for a deterministic process, but
9 integrated into the process that's used that will
10 shape the Committee's views, I think. At least that's
11 my opinion of how the Committee with react, and it's
12 certainly my own reaction.

13 I'm broad and open-minded to thinking
14 about it, but if we end up with a deterministic
15 process, how are things change very much. And the
16 answer is not probably a whole lot. Because as
17 facilities get designed, developed and built the
18 things you based your initial thinking on will
19 probably evolve over time. I haven't seen one that
20 didn't.

21 MS. BAILEY: Yes. I think that what we're
22 proposing is not a deterministic process. That it is
23 a risk-informed process. It allows for a systematic
24 way of improving and right-sizing an inspection
25 program for that facility based under their

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 performance. And it is going to be using risk
2 insights as part of that continuous improvement loop
3 that I think Jonathan showed in the conception --

4 CHAIRMAN RYAN: Yes. At the beginning of
5 the presentation, that was very clear. But here at
6 the end I think the point that there really isn't any
7 recognition of kind of risk concepts in the
8 conclusions and recommendations, it sort of stopped
9 flowing through the whole discussion, it sort of ended
10 just before this. So maybe it's a matter of
11 terminology.

12 MS. BAILEY: I think it's a matter of
13 terminology. I think now that probably the use of the
14 word "deterministic-type SDP" might be a misnomer.
15 Because it's not devoid of risk information. It is
16 based on risk information and maybe it's at a
17 qualitative level, but we are using this --

18 CHAIRMAN RYAN: Well, I think it's very
19 helpful, it will be for the Committee to hear how the
20 risk significant information is carried through the
21 entire process.

22 MS. BAILEY: Okay.

23 CHAIRMAN RYAN: And how licensees will use
24 that kind of information as well as the other to come
25 to decision making and compliance programs and all the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 rest.

2 DR. FLACK: Yes. And if I could just
3 follow-up on that a little bit.

4 When I think of deterministic I think of
5 it as either it's black or black, it's yes or no.
6 It's very specific. It's either you meet it or you
7 don't meet it. And so that's fine I think if you have
8 all the answer. It's fine if you're not concerned
9 about too much of the consequences if you're wrong.
10 Or, you know when you do the PRA you're also dealing
11 with the fact that you don't know everything. And
12 there's a certain amount of unknowns that you
13 understand are there but you can't treat it in a
14 model. It's there and you have to deal with that
15 separately. But it gives you a field of framework in
16 which to understand what you do know and then what you
17 don't know.

18 And so with deterministic it's like trying
19 to define everything and then saying whether you meet
20 or not. And it kind of makes it very narrow in a
21 sense is because people then look at it as okay, this
22 is all I need to do. I just need to meet these things.
23 And then if I meet them, I'm okay. And that's why in
24 reactor space we moved away from all that.

25 You know, you had design-basis accidents.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 You met your GDCs. You met your -- and that's it,
2 you're there, you're good to go. Then we're finding
3 out that that wasn't all there is to the story. There
4 were a lot of things there that were driving the risk
5 that were not being captured.

6 CHAIRMAN RYAN: I think --

7 DR. FLACK: Well, I can go on with this.

8 CHAIRMAN RYAN: I gave you time to talk a
9 lot about this.

10 DR. FLACK: But anyway, I guess that's my
11 feelings on it.

12 CHAIRMAN RYAN: Okay. Appreciate that.
13 You know, it's useful to go back and think about the
14 history of it, but we want understand how they're
15 looking at it, too.

16 DR. FLACK: Sure.

17 CHAIRMAN RYAN: Jack, do you have any
18 thoughts or comments?

19 MEMBER SIEBER: Actually, none beyond what
20 I've already said. And I would caution about the
21 terminology a little bit because you don't want to use
22 words that would imply that you're risk-based when it
23 isn't, if you know what I mean.

24 You know there are advantages to
25 deterministic determinations. For example the setting

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 of the relief valves and so forth are all
2 deterministic and they're relatively simple. And it
3 is black or white and from the standpoint of
4 regulating a facility where the hazards are confined
5 to the facility in all the cases there is
6 deterministic kinds things are appropriate.

7 On the other hand, I think that what the
8 staff has done is looked at all these options and try
9 to define how they would set up a fuel cycle
10 regulatory system where you would define these things.
11 And I think they've gone pretty much to the right
12 degree in this presentation as to how they would
13 modify the process to make it similar to the processes
14 in which they were used for reactor plants and so
15 forth. So you don't end up with a lot of turfology
16 issues that sort of obstruct the understanding by
17 people with familiarity of one section but not so much
18 with another section.

19 So, I think that all of this is going to
20 take some compromises to develop a system that's
21 consistent with the Commission's direction and
22 provides the goals that we want to see.

23 So my overall feeling so far is that the
24 staff has done a pretty job of naming these issues and
25 pretty much headed in the right direction. But I'm

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 sure by the time that the full Committee hears this,
2 there will be some details that we want to discuss
3 further.

4 CHAIRMAN RYAN: Okay. Well, great. Thank
5 you very much.

6 With that we have a briefing --

7 MEMBER BLEY: Can I --

8 CHAIRMAN RYAN: I'm sorry, Dennis. Yes,
9 please.

10 MEMBER BLEY: This last discussion makes
11 me want to say just a couple of things.

12 I think you did miss an opportunity in the
13 conclusions and recommendations, and one that you
14 shouldn't miss that will be helpful to you, to point
15 out the somewhat -- of revised -- I think you missed
16 an opportunity --

17 CHAIRMAN RYAN: Dennis, are you on a
18 speaker phone?

19 DESIGNATED FEDERAL OFFICIAL WIDMAYER:
20 He's on Skype.

21 CHAIRMAN RYAN: Are you on a speaker
22 phone?

23 MEMBER BLEY: I can make it better in just
24 a second.

25 CHAIRMAN RYAN: Okay.

1 MEMBER BLEY: Usually this works out
2 great.

3 CHAIRMAN RYAN: Well, it's breaking up
4 quite a bit.

5 MEMBER BLEY: Let's see if this will fix
6 it. Just a second.

7 Okay. Is that any better?

8 CHAIRMAN RYAN: That's fabulously better.

9 MEMBER BLEY: Okay. I'll stay with it.
10 I don't know if you heard anything I already said.

11 CHAIRMAN RYAN: Start over.

12 MEMBER BLEY: My basic comment was that I
13 think you've missed opportunities. You missed
14 opportunities in the conclusions and recommendations
15 to point out that the hazard analysis-based option
16 takes you more on a parallel with the -- that it has
17 some risk-informed features that are attractive to
18 people that are interested in that factor.

19 And three -- the deterministic-type SDP,
20 you even said some words about how you're including
21 some risk information there. And I'm saying -- and
22 Dennis has offered --in his previous example.

23 The real places from risk information are
24 important that are on the kinds of events that an lead
25 to offsite health effects. There are very few of them

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 for most of these facilities. So if it's a dose kind
2 of things, it's not necessary.

3 That's a quick summary.

4 CHAIRMAN RYAN: Well, thank you, Dennis.
5 We still had a little bit of trouble, but a little bit
6 less with your new audio hookup. So we're better
7 informed about your thoughts.

8 With that, I think that finishes the
9 staff's presentation. We do have a scheduled
10 presentation from Mr. Gerard Couture from
11 Westinghouse. Are you with us? Please come out front
12 and we're happy to listen.

13 CHAIRMAN RYAN: And we got to do something
14 with the phone. It's buzzing and cracking. It sounds
15 like lightening going off. We need to do something
16 about it.

17 Okay. That's sounds a little bit quieter.

18 MR. GERARD: Okay. We ready?

19 CHAIRMAN RYAN: Yes.

20 MR. GERARD: All right. Well, thank you.

21 My name is Gerard Couture. I'm the Manager
22 of the Licensing and Regulatory Programs Group at the
23 Westinghouse Columbia Fuels Facility. And I'm here
24 today to offer some stakeholder input from the NEI
25 perspective on the fuel cycle oversight process that's

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 under discussion.

2 The next slide.

3 CHAIRMAN RYAN: We have the next one, so--

4 MR. GERARD: Okay. Thank you.

5 Again, from the licensee's perspective,
6 and we believe the staff also recognized this, that
7 there was really no safety deficiency with our current
8 oversight process. Our facilities have been operating
9 safely for a long period of time, and continue to do
10 so. I always like to inform my friends in the reactor
11 community that we had manufactured a fuel before they
12 could ever take their reactor operational, so we were
13 there first, if you will.

14 NEI, and we are a little bit concerned
15 about the revolutionary approach and want to make sure
16 that the resource intensiveness and overly complex
17 approach that's being looked at for this hazards
18 analysis-based/accident initiator-based approach, we
19 want to make sure that we use a smart application of
20 both the Nuclear Regulatory Commission's and the
21 licensee resources.

22 We believe that the Commission's Directive
23 can be best approached through an evolutionary and
24 structured minimal increase in both NRC and licensee
25 resources.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 And I notice we did base our slides off
2 our August meeting and we did have some concerns with
3 the definition of performance deficiency. But we see
4 the staff choose not to repose that today, so we'll
5 just let that go. And obviously that's something that
6 needs to be worked out as well as the significant
7 determination process. Both of those have to be
8 clearly articulated and understood by both parties.

9 We believe that NRC and industry are
10 essentially aligned on the importance and use of
11 effective corrective action process.

12 Industry is willing to generate a guidance
13 document for NRC endorsement, similar to what was done
14 on the reactor side of the house. Once if the
15 Commission provides direction and NRC resources are
16 made available to support that effort. So that I
17 think is something that I believe was essentially
18 agreed to at our last meeting with NMSS.

19 Pertaining to the cornerstones, we are
20 concerned with the complexity and the public's ability
21 to understand that process, especially the accident
22 initiator process, the hazards analysis-based. And
23 I'm glad to see that our previous input was addressed
24 and that they're not proposing the use of the color
25 code system. So that's good, because obviously the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 risk profiles in the reactor and fuel cycle facilities
2 are not even close to comparable. And so we support
3 relying solely on the descriptive terms, very low,
4 safety significance; very similar to what was proposed
5 today.

6 We do believe that it is important to
7 better integrate the ISA knowledge and understand the
8 risk significance of the plants' conditions. I would
9 say that our ISAs are very much risk-informed. We
10 have a much better comprehensive understanding of the
11 overall risk for a given process or a given operation
12 today than we did prior to pursuing the development of
13 the ISAs. So I think that there's a certain risk
14 element that's been recognized by both the NRC and the
15 licensees.

16 CHAIRMAN RYAN: Just a question on that if
17 you don't mind. And does that come from sort of, you
18 know a component unit operations integrated system
19 operations perspective, you can kind of carry it
20 through those well as complexity or --

21 MR. GERARD: Well, most of the ISAs are
22 based on a pretty thorough process hazards analysis
23 which includes all of the various safety disciplines
24 as well as the operational staff, you know where
25 appropriate.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Now you got to understand, and I'll just
2 speak from our facility, we have a pretty intensive
3 chemical operation.

4 CHAIRMAN RYAN: Yes.

5 MR. GERARD: We also have a pretty
6 expansive mechanical operation. So the tools, the
7 process hazards analysis tools that lend themselves
8 well for our conversion process which were the
9 standard chemical industry process, PSM-type process,
10 you know where the correct tool to choose for that
11 type of operation.

12 For the mechanical operations, you know we
13 come to found that the "what-if" type scenarios, and
14 that more basic "what-if" type analysis from the
15 hazard analysis perspective worked itself much better
16 to look at the various accident initiators, what could
17 occur and what types of controls we could put in
18 place. And, of course, a lot of that integration. You
19 know, because there may have been controls that as a
20 safety analyst I would want to have in place, but my
21 chemical safety analyst is saying well that may help
22 you but it's going to hurt me. So you got to look at
23 the trade-off and you got to make sure that you pick
24 the best control that provides the most protection
25 for, in our case, most of our facility workers.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Because we don't really have any accidents, bar a
2 couple, that would have any potential for an offsite
3 impact. So I think --

4 CHAIRMAN RYAN: I think that's one example
5 of where the integration is really the key to
6 balancing all the components with regard to the risk
7 and the safety that you end up finding the appropriate
8 level. Is that a fair conclusion on my part?

9 MR. GERARD: That is very much a fair
10 conclusion. And that's one of the reasons that we
11 like the operations-based approach because that's --
12 if you will, I'm looking at the other one and I don't
13 really have a good slide for it. But, you know I kind
14 of viewed swapping over to that accident initiator-
15 based one that that's like a human error precursor for
16 all of my knowledge workers in the plant, who I rely
17 upon day in and day out to perform the 70/72 change
18 reviews, who would do the updates to the hazards
19 analysis, who understand the control schemes and what
20 they're there for. I'm introducing a whole new
21 concept after having training them for about ten years
22 on here's how we're going to proceed with business.
23 And here's how we're going to integrate this.

24 So, if you did a thorough enough hazards
25 analysis, you will identify all those defense-in-depth

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 things, you will learn your process, you will make
2 changes to your process. And I would say that we, and
3 most of the other licensees, did the same thing. So
4 there's not a knowledge gained in the development of
5 the ISA, probably comparable to the knowledge gained
6 by the reactors when they did the PRA-type analysis.

7 CHAIRMAN RYAN: Thank you.

8 MR. GERARD: Again, we think that there's
9 an opportunity to gain some efficiencies in the
10 baseline inspection program based on whichever
11 cornerstone you go with.

12 Some other recommendations. We'd like to
13 see a more timely review of our ISA updates. I know
14 Doug mentioned that when he was giving his
15 presentation. You know, annually we submit these are
16 the process changes that we've made to our facility,
17 these are the changes to the ISA summaries. And we
18 submit those to the NRC. Pretty much everybody does
19 it in January. We think they could do something there
20 to change that timing, focus on timely reviews versus
21 everybody submitting all their documentation in the
22 same month.

23 CHAIRMAN RYAN: So what's the typical time
24 for you to get feedback on those submittals?

25 MR. GERARD: It can run from three months

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 if they were minor to eight months if they were not
2 minor. Now I can only speak for myself. We turned in
3 -- I think our average number of changes which are
4 evaluated range around 800 a year that add potential
5 to impact the ISA. And then of that, you know some --
6 probably half of those may make some changes to the
7 ISA summary. So it's a very robust process that we
8 perform as part of our change management review. And
9 that can include we've got to go redo that what-if
10 analysis that was performed initially. So, you know
11 the what-if analysis or the hazards analysis that was
12 performed when the initial baseline ISAs were done
13 back in the 2000/2004 time frame may look nothing like
14 what it looks today because we made substantial
15 changes.

16 CHAIRMAN RYAN: And I guess there's got to
17 be some safety significance or risk significance to
18 some of those 800 versus all the 800. A fraction of
19 kind of major really significant ones out of the 800
20 per year, would you say?

21 MR. GERARD: Yes. Well, I guess it
22 depends on your term of "significance." To me
23 anything that's impacting my criticality safety
24 program, which is my highest risk for my own facility
25 workers is very much a safety significance. So we

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 have several, probably a quarter of those that could
2 impact that.

3 CHAIRMAN RYAN: So about 200 might be in
4 the criticality safety area?

5 MR. GERARD: Right. And if we're doing a
6 major process change for a new product line or for a
7 new customer, okay, then that can change even more.
8 So it runs year-to-year. You know, we have to do
9 especially on our manufacturing side because there's
10 a lot of changes that can get made over there based on
11 our products.

12 CHAIRMAN RYAN: Thank you.

13 DR. FLACK: And these changes you're
14 describing are really changes that affect the?

15 MR. GERARD: The IROFS. These are changes
16 that potentially can affect the IROFS or they can
17 affect the accident initiators, accident sequences.
18 You know anything. They could impact the hazard
19 analysis itself.

20 You know, we'll do targeted revisions to
21 hazards analyses based on some modification because
22 you're changing some enabling condition or some
23 initial condition, or something else that may impact
24 the baseline assumption you made in that hazard
25 analysis.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 DR. FLACK: Which means that you would
2 have to either add an IROF then at that point maybe?

3 MR. GERARD: The template if you end up
4 exceeding performance requirements.

5 DR. FLACK: Right. I mean, it could go
6 either way, right? I mean, you could have things
7 where you could take them away. But in any case it
8 seems like it would all lead back to adjusting the
9 IROFS somewhere along the line, right? I mean, either
10 adding or taking away?

11 MR. GERARD: If the IROFS need to be
12 adjusted, yes. In some cases they may not. In some
13 case that IROF may provide production or in some cases
14 you may analyze it and determine that you're never the
15 intermediate or high consequence events, therefore you
16 won't apply IROFS, but you'll certainly apply
17 controls.

18 DR. FLACK: And do you continuously look
19 at your plant in coming up with, say, a sequence that
20 you didn't recognize before and now you believe you
21 would need to add an IROF because when you did your
22 ISA, I mean there's always a question of completeness
23 in these ISAs, right? So you're going to look at this
24 and say "Gee, nobody thought of that one before.
25 Maybe now let me go calculate it. I find out I'm not

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 meeting the performance criteria. I need to add an
2 IROF." Does that happen.

3 MR. GERARD: I guess I could make the same
4 arguments for PRAs.

5 DR. FLACK: Oh, yes. Absolutely.

6 MR. GERARD: And as we do our change
7 review process we're looking at that baseline
8 analysis, that hazards analysis, that safety
9 evaluation as it goes through its review and approval
10 process, there's always that opportunity.

11 DR. FLACK: But there's the difference
12 between PRA. Because, I mean you have a set a safety-
13 related equipment that doesn't change. You could
14 enhance safety by adding things in. But here it's
15 required to meet certain performance criteria.
16 There's no requirement in reactor space that says you
17 have to meet this performance criteria with respect to
18 consequences and likelihoods. I mean we have the
19 safety goals, which is a goal, it's a policy. It's
20 not an explicit regulation. Here it is, right.

21 So you really need to identify --

22 CHAIRMAN RYAN: Is that correct?

23 DR. FLACK: That's the way I read it. I
24 mean, tell me if I'm wrong.

25 MR. GERARD: Yes. We have to identify any

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 accident scenario that could result in an intermediate
2 or high consequence event to the various --

3 CHAIRMAN RYAN: Right. Okay.

4 MR. GERARD: I mean, we have license
5 commitment to do that.

6 CHAIRMAN RYAN: Right.

7 MR. GERARD: It's in the regulatory
8 framework.

9 DR. FLACK: Right.

10 MR. GERARD: So that's the minimum that we
11 do.

12 DR. FLACK: For reactors we have, of
13 course, benefit analysis and backfit that we would
14 have to do. But here you don't I think, right? You
15 still have to come up with that?

16 MR. GERARD: We have to demonstrate --

17 DR. FLACK: Right. It's a lot different.

18 MR. GERARD: That's correct.

19 Another suggestion that we made, and again
20 you'll see a footnote here in March of this past year,
21 we did provide some input to the staff on what we
22 thought would be some recommendations to enhance the
23 oversight process.

24 CHAIRMAN RYAN: Right.

25 MR. GERARD: And one of those being an

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 annual licensing performance review. It should be
2 easily understandable for all of our stakeholders.
3 There's nothing that's more painful then to having
4 gone through an LPR for the current process and then
5 have people ask me what exactly does that mean? We
6 shouldn't have to explain what that means is the point
7 of that particular role.

8 If you look on this slide here, these are
9 several of the initiatives that several of which were
10 underway probably before the fuel cycle oversight
11 process got underway that either we had contacted NRC
12 or from the course of different activities and
13 conferences, et cetera, are different things that
14 we've identified, regulatory initiatives, rulemakings.
15 Several of these regulatory initiatives we think may
16 actually help us enhance some safety. So we'd like to
17 see some stuff, you know the industry would like to
18 see some work there more than we would really like to
19 see it in the oversight process. There are other
20 initiatives out there that we feel if you want to make
21 a benefit argument, there'd be more benefit to the
22 cost of pursuing some of these other regulatory
23 initiatives.

24 And then on top of that you've got you've
25 got a large suite of rulemaking also underway.

1 CHAIRMAN RYAN: Just out of my own areas
2 of interest, I'm curious what your thoughts are on the
3 61 rulemaking to risk-inform low level waste
4 regulations. What would your views be there?

5 MR. GERARD: For that one I would pass it
6 to my friend Janet because I'm a fuel cycle. I
7 manufacture fuel. That's outside my realm of -- Janet,
8 you want to answer that one? No?

9 CHAIRMAN RYAN: You want to save it for
10 another day, that's fine, too.

11 MS. SCHLUETER: Yes. Exactly.

12 CHAIRMAN RYAN: All right.

13 MR. GERARD: All right. Okay.

14 CHAIRMAN RYAN: But it's on your list?

15 MS. SCHLUETER: Oh, yes. It's on the
16 page.

17 MR. GERARD: And then as part of my
18 industry summary, I'd just like to flip back. So I
19 was trying to take some notes because unfortunately I
20 was on travel and I did not get a chance to see the
21 presentation that Doug provided here. If you go back
22 to the slides where he talked about the pros and cons
23 for the hazards analysis-based cornerstone, and then
24 the slide was the pros and cons for the operations-
25 based cornerstones. From a licensee perspective, and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 I agree with you there's probably a lot of pros and
2 cons on there that probably weren't listed. But I
3 would say that the second bullet under pros for the
4 hazard analysis-based organize in a way licensees did
5 hazard analysis and their controls development would
6 be just as applicable for the operations-based
7 cornerstone. I don't really see any difference. In
8 fact, I would say it's more aligned with that one than
9 it is with the hazards analysis-based cornerstone.
10 Equally applicable.

11 CHAIRMAN RYAN: To the point where it
12 might be terminology more than anything else.

13 MR. GERARD: Yes, that may very well be.
14 Yes.

15 CHAIRMAN RYAN: Okay.

16 MR. GERARD: So I just wanted to point
17 that out.

18 And then on their summary I thank the
19 staff for recognizing that licensees would prefer the
20 operations-based cornerstone which we're going to talk
21 -- if the Commission provides that direction.

22 I think I would have to add two points.
23 I think I already mentioned the knowledge work for
24 issues that we'd have to deal with. And then there's
25 also not only our workers and our members of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 public, but another key stakeholder for us, of course,
2 is our corporate partners, our management structure.
3 And again, the international facilities that we're on
4 a competition with on a day-to-day basis, okay? And
5 to use one of our partners, Westinghouse Fuels
6 Facility Vasteras, okay, their environmental health
7 and safety department which is equivalent to me, deals
8 with an entirely different framework of regulations
9 then we do here in the United States. But we can get
10 through that and we can work together on continuously
11 improving our environmental health and safety program
12 because we all understand the operational safety
13 cornerstones.

14 So, you know when I'm working a corporate
15 level and with my partners and my partners overseas,
16 the fuel fabric facility that we deal with, like NFI,
17 we all understand those core basic safety program
18 elements. If I start to deviate from that, it's going
19 to add another level of confusion, especially for
20 international companies such as ourselves and I'm sure
21 AREVA has the same issue. I didn't get a chance to
22 talk to Bob about that, but I'm sure they'd have the
23 same issue because you know everyone is working off
24 the same page. And you go introduce another level of
25 complexity for my management structure and how to deal

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 with my peers, you know that's just one more thing I
2 got to worry about, one more place I can make a
3 mistake, which I don't like making mistakes.

4 So I would add that as another piece of
5 that why we would prefer the operations-based
6 cornerstone.

7 DR. FLACK: Having said that, do they also
8 do ISAs at all?

9 MR. GERARD: They do some hazards
10 analysis. We've had our friends from Japan have been
11 to look at CR ISA, and they're looking at doing some
12 of that. And everyone -- you got to remember that I
13 have, just to give you a rough ballpark number, I've
14 got 1100 IROFS. A 1,000 of those are safety IROFS.
15 So I've got a small percentage there that are not for
16 safety. So that both of my IROFS are for safety-
17 related.

18 Off of us do very similar, the same style
19 safety evaluations. So we have a very consistent --
20 you know so if I have to provide resources to support
21 a safety function at one of our other facilities, we
22 can do so. And the same thing even in chemical safety
23 here in the States. You know our Ogden, Utah facility
24 is probably one of the biggest users of HF in the
25 United States. So we can share chemical safety

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 information. There under PSM we have similar type
2 process set up to accommodate our chemical hazards.
3 So we can cross-calculate, we can utilize their
4 expertise and vice versa. So again, the safety
5 cornerstones is something that we as a none -- you
6 know we are primarily a chemical and a manufacturing
7 operation which a happens to be nuclear, so we have
8 that extra added emphasis on criticality safety in our
9 particular situation. Of course now the enrichers and
10 everybody else, they got different. But the key thing
11 is is that's a set of cornerstones that all of us can
12 comprehend, all of us can work to. So that also I
13 think comes into play. Because you don't want to get
14 your safety professionals off target.

15 DR. FLACK: But I mean, and having said
16 that, you'd still be double contingencies.

17 MR. GERARD: Absolutely. And they
18 understand double contingencies.

19 DR. FLACK: Yes. So right there, that's
20 criticality in any case. They're going to have to meet
21 that. Now this is laying on top of that. Okay. Now
22 that you have that in place, what else could go wrong?

23 MR. GERARD: That's parallel double
24 contingencies making sure that you've already
25 identified --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 DR. FLACK: Exactly. But that's knowing
2 all the answers and having all the solutions. If you
3 can speed that complete, then I mean everybody could
4 go home almost. We could say it was safe enough,
5 right?

6 MR. GERARD: We do --

7 DR. FLACK: I mean that's what PRAs in the
8 past have said we're not. We don't know everything.
9 And I'm back on the soapbox again, right?

10 MR. GERARD: Understand.

11 So again, overall industry believes that
12 incremental changes to the oversight process are
13 probably the most appropriate and likely achievable
14 within the existing resources or with a minimal
15 increase in resource in the absence of any real true
16 identified safety concerns. That's a key. You know,
17 we're not dealing with some safety concern that we got
18 to go fix.

19 NRC and industry need to prioritize this
20 NRC lead effort in view of the numerous ongoing
21 regulatory initiatives, some of which again I
22 mentioned starting before the oversight process. And
23 we consider them a little bit high priority. That
24 said, if the Commission decides to go forward, you
25 know industry will do what we can to make sure

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 everyone's successful. We obviously want to be
2 successful.

3 CHAIRMAN RYAN: I guess, at least at this
4 point in my mind I think these are two very important
5 observations that the rollout or implementation,
6 however you want to look at it, of a newer program
7 like this that adds features and maybe supplements
8 other features is really going to take some, I guess,
9 cultural adjustments is the best way to think about.
10 It's not something you just get a manual and have a
11 training session, it's all done. It's going to be I
12 would guess years to get comfortable. Okay, we now
13 understood what was asked and we've now developed and
14 learned and adjusted and modified and readjusted. And
15 we feel like we're not at the place where we need to
16 be. And that's where I would be if I was in your
17 shoes. Is that a fair way to summarize it do you
18 think?

19 MR. GERARD: I would say so, yes sir.
20 Definitely.

21 CHAIRMAN RYAN: All right. Well thank you
22 very much. Your comments are welcome and we
23 appreciate you being here today.

24 MR. GERARD: Well, thank you for allowing
25 me to speak. Thank you.

1 CHAIRMAN RYAN: Let's see, with that we're
2 kind of in a wrap up stage. Are there any other
3 comments from the staff? Jack, any further comments?

4 MEMBER SIEBER: None for me.

5 CHAIRMAN RYAN: Dennis?

6 MEMBER BLEY: Yes, just one and it's come
7 back, something we wrote in our letter back.

8 For most of these facilities, and
9 certainly for most of that -- these kind of
10 facilities, you know to have the potential offsite
11 consequences -- I'm sorry. I got this microphone and
12 I forgot to use it.

13 CHAIRMAN RYAN: That was a bummer there.

14 MEMBER BLEY: Anyway, backing up. For
15 most of these facilities we have little or not
16 potential for offsite consequences. And for those
17 kinds of events PRA is really not the right tool. For
18 the ones that do have it or for those few events that
19 do have the potential for offsite consequences, I
20 think we mix up those two things too often in these
21 discussions.

22 So, I think for -- you know, the gentleman
23 that was just on, I think probably for his facility
24 I'd probably agree with everything he said. I think
25 for some others, I think there's a need for a little

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 more thorough kind of look along the lines that John
2 Flack was talking about. But I think we need to make
3 that kind of distinction. That's it.

4 CHAIRMAN RYAN: All right. Thanks very
5 much.

6 With that, hearing no other comments or
7 input, we'll adjourn the meeting. And we thank
8 everybody for their participation.

9 Thank you.

10 We're off the record.

11 (Whereupon, the Subcommittee was adjourned
12 at 11:03 a.m.)

13

14

15

16

17

18

19

20

21

22

23

24

25



ENHANCEMENTS TO THE FUEL CYCLE OVERSIGHT PROCESS - STATUS

Presentation to the ACRS Subcommittee on Radiation
Protection and Nuclear Materials

September 23, 2011

Margie Kotzalas

Acting Chief, NMSS/FCSS/TSB



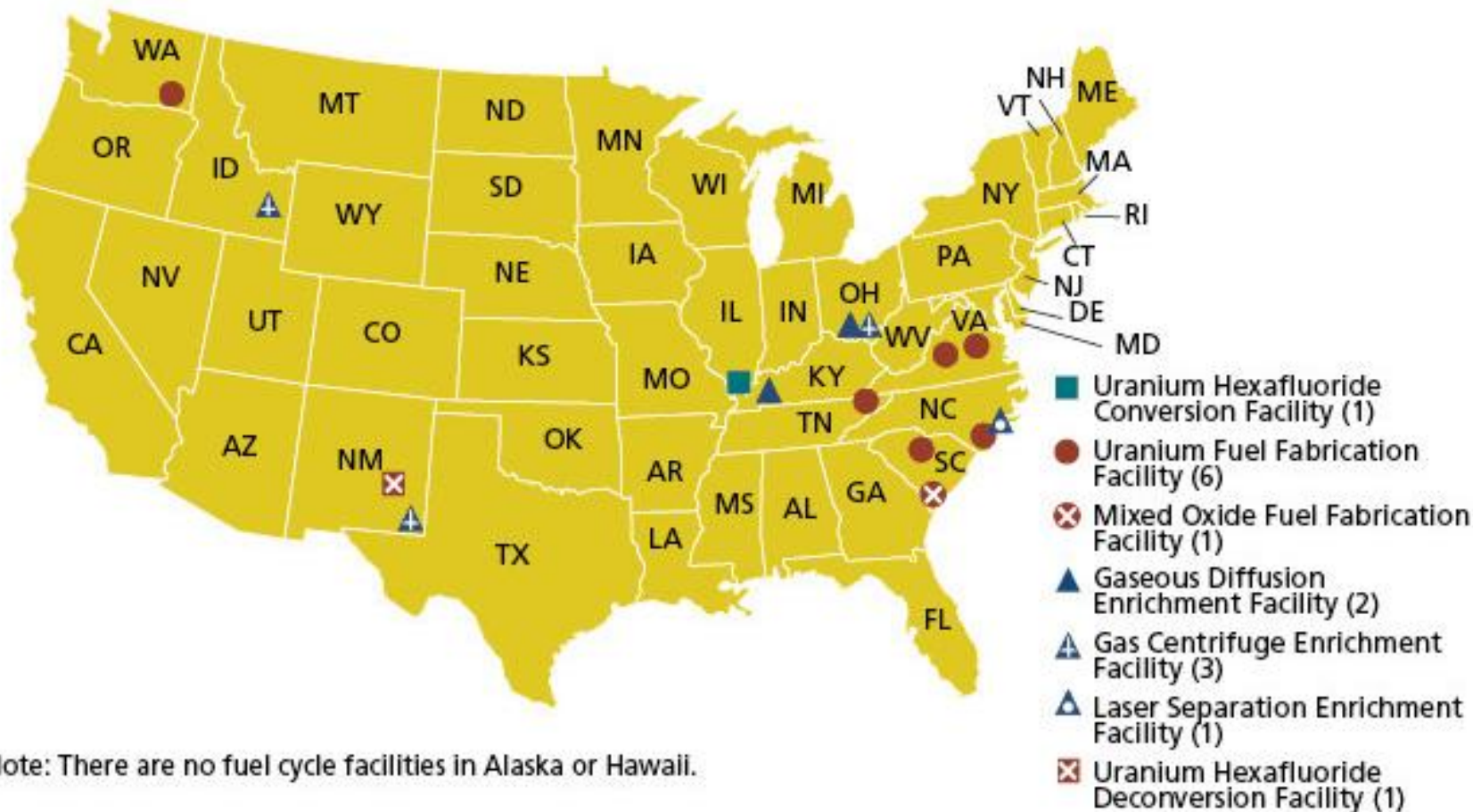
Commission Direction

2

- Concise paper comparing Integrated Safety Analyses (ISAs) for fuel facilities and Probabilistic Risk Assessments (PRAs) for reactors
- Make modest adjustments to the existing oversight program to enhance its effectiveness and efficiency.
- Develop a set of cornerstones that could be applied to the fuel cycle oversight process (FCOP).
- Provide an assessment of the work accomplished and recommendations for next steps.

Fuel Cycle Facilities

Locations of Fuel Cycle Facilities



Note: There are no fuel cycle facilities in Alaska or Hawaii.



FUEL CYCLE OVERSIGHT PROCESS ENHANCEMENTS

Presentation to the ACRS Subcommittee on Radiation
Protection and Nuclear Materials

September 23, 2011

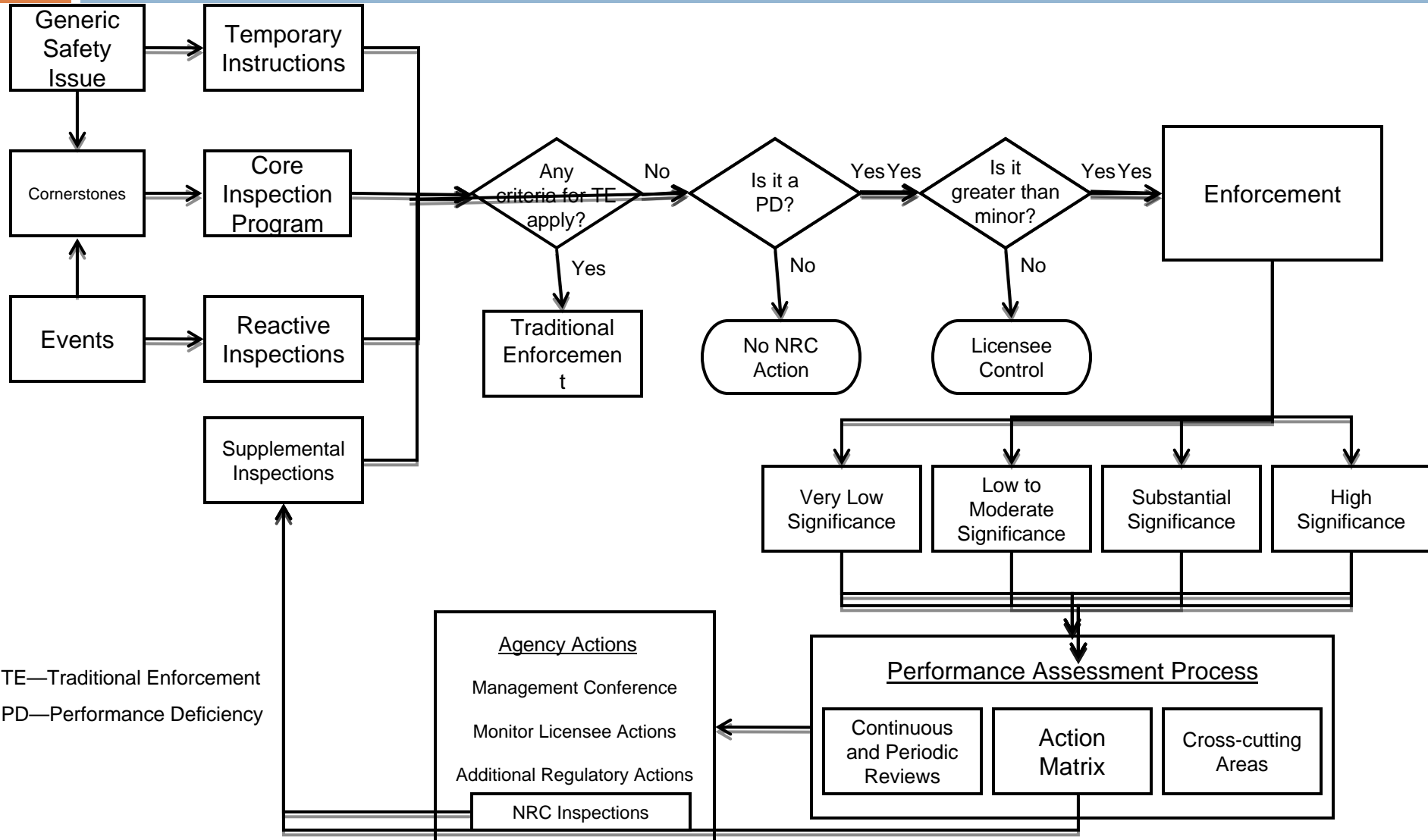
Jonathan DeJesus

NMSS/FCSS



Conceptual Diagram of Enhanced Diagram of Current FCOP FCOP

5



TE—Traditional Enforcement
PD—Performance Deficiency



United States Nuclear Regulatory Commission

Protecting People and the Environment

CORNERSTONE OPTIONS FOR ENHANCING THE FUEL CYCLE OVERSIGHT PROCESS

Presentation to the ACRS Subcommittee on Radiation
Protection and Nuclear Materials

September 23, 2011

Doug Collins

NMSS/FCSS

Further Cornerstone Development



7

- Outline Goals and Interests for a Set of Cornerstones Organized according to how Licensees did their Hazards Analysis for the Integrated Safety Analyses (ISAs)
- Discuss this Hazards Analysis-Based Set of Cornerstones
- Review Operations-Based Cornerstones Discussed in June Meeting
- Outline Pros and Cons of Hazards Analysis-Based and Operations-Based Cornerstones
- Answer Questions

Cornerstone Goals and Interests



8

- Meet the Commission's Direction
- Based on the Strategic Plan
- Result in Similar Oversight Frameworks across NRC Offices
- Responsive to Internal Stakeholder Comments
- Specific to Fuel Cycle Safety and Security
- Risk-Informed, Performance-Based, Objective, Predictable, Repeatable, and Transparent

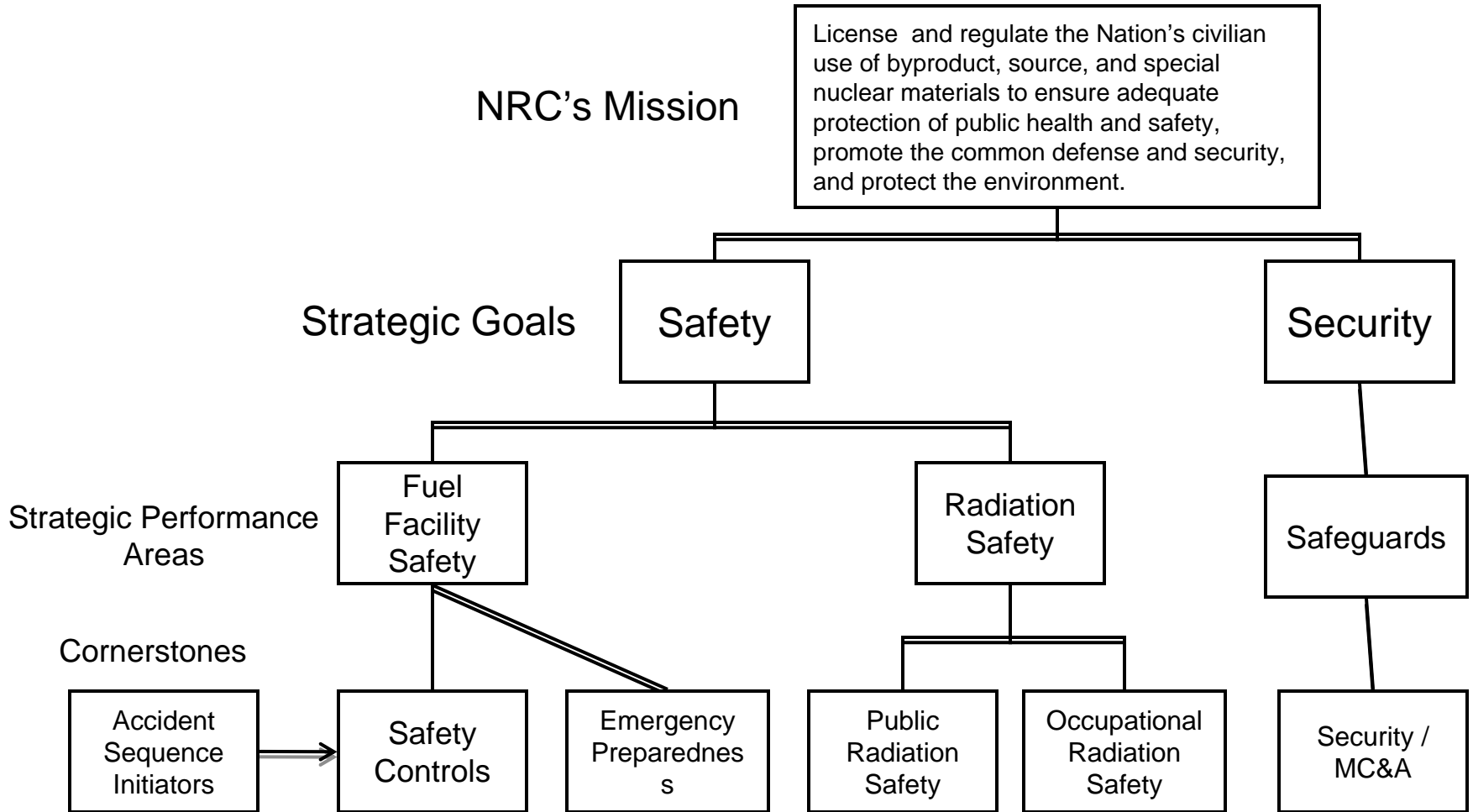
Hazards Analysis-Based Cornerstones



9

- Accident Sequence Initiators
- Safety Controls
- Emergency Preparedness
- Public Radiation Safety
- Occupational Radiation Safety
- Security/Material Control and Accounting

Cornerstones – Hazards Analysis Based



===== Cross-cutting areas =====

Accident Sequence Initiators Cornerstone



11

- Accident Sequence
 - Process deviations
 - Other events internal to the facility
 - Credible external events
- Accident Sequence Initiators
 - Sequence of specific real events
 - Initiating event
 - Enablers (propagating events)
 - Controls (risk reduction factors)

Accident Sequence Initiators Cornerstone Objectives



12

- The objectives of this cornerstone are to ensure that a licensee:
 - limits the frequency of accident sequence initiators that lead to the need for IROFS, nuclear criticality safety (NCS) controls, or other safety controls. The ISA or safety analysis assumed a frequency for accident sequence initiators in establishing IROFS, NCS controls, and other safety controls. These IROFS, NCS controls, and other safety controls would be required by the license or 10 CFR Part 70 as a result of the safety analysis, ISA or NCS analysis showing that they are needed to limit the likelihood of intermediate or high consequence accidents or prevent a nuclear criticality accident.

Accident Sequence Initiators Cornerstone Objectives (continued)



13

- evaluates and limits, as appropriate, accident sequence initiators that are not required to be limited or controlled by IROFS, NCS controls, or other safety controls (non-IROFS). These are accident sequence initiators that the licensee has determined do not need to be prevented or have their likelihood limited based on the ISA. This could be because the ISA shows that they may be allowed to occur without causing likelihoods or consequences defined in Part 70.
- has identified in the ISA or safety analysis all accident sequence initiators associated with uses of licensed materials and has appropriately assessed the accident sequences to identify those which require IROFS, NCS controls, or other safety controls to prevent or mitigate intermediate or high consequence events and prevent nuclear criticalities.

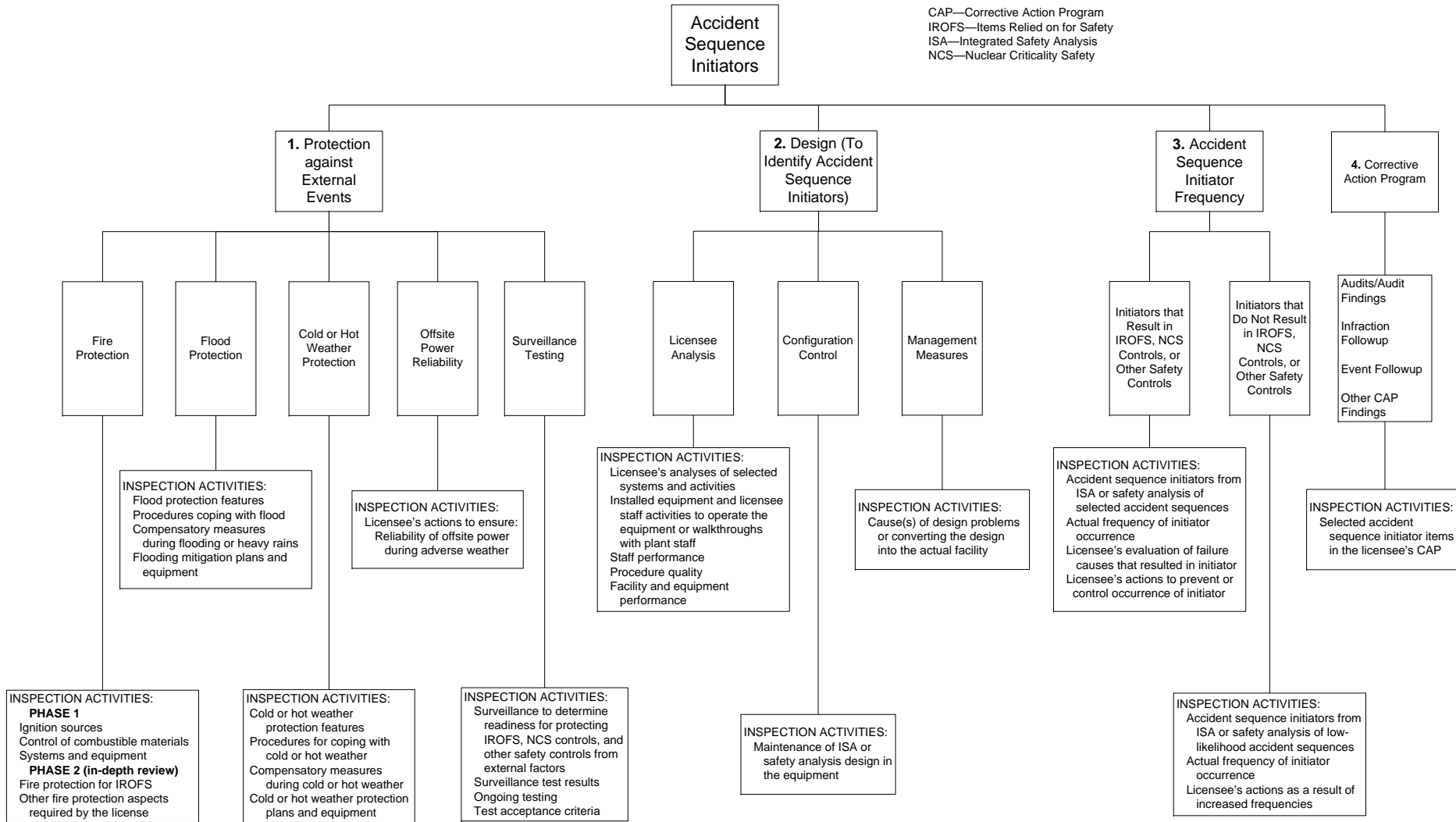
Accident Sequence Initiators Cornerstone Key Attributes



14

- Protection Against External Events
- Design (to Identify Accident Sequence Initiators)
- Accident Sequence Initiator Frequency
- Corrective Action Program

Accident Sequence Initiators Diagram



Safety Controls Cornerstone Objective



16

- The objective of this cornerstone is to ensure the availability, reliability, and capability of items relied on for safety (IROFS), nuclear criticality safety (NCS) controls, or other safety controls. These IROFS, NCS controls, and other safety controls prevent, limit the frequency of, or mitigate accident sequences that could lead to intermediate or high consequence events or a nuclear criticality.

Safety Controls Cornerstone Key Attributes



17

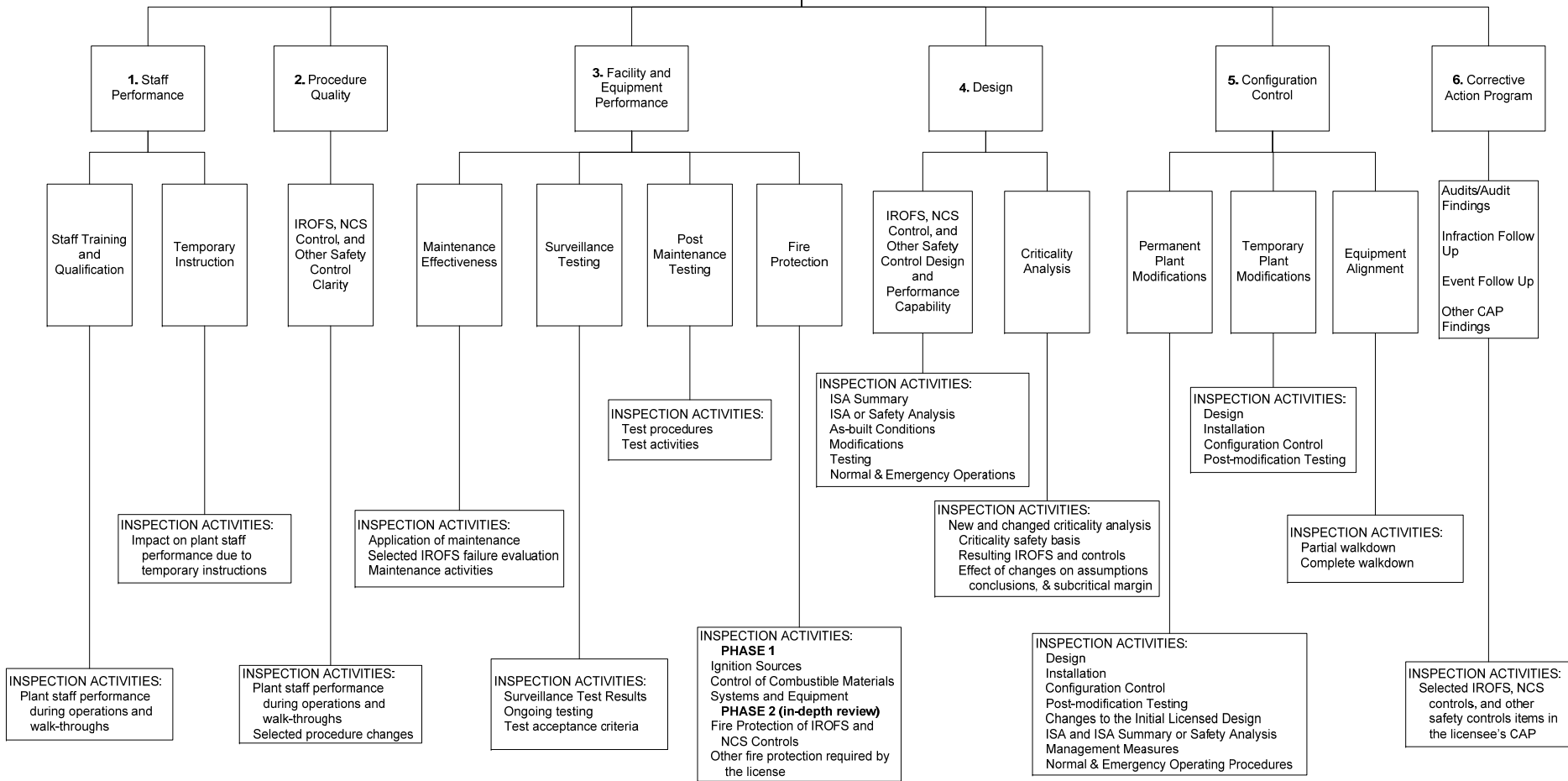
- Staff Performance
- Procedure Quality
- Facility and Equipment Performance
- Design
- Configuration Control
- Corrective Action Program



Safety Controls Diagram

Safety Controls

CAP – Corrective Action Program
 IROFS – Items Relied on for Safety
 ISA – Integrated Safety Analysis
 NCS – Nuclear Criticality Safety



Remaining Hazards Analysis-Based Cornerstones



19

- Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security/Material Control and Accounting (MC&A)
- Remain essentially the same as they were in the materials we provided at and after the last meeting
- Changed “Worker” to “Occupational” to be consistent with ROP terminology
- Propose one cornerstone for physical and information security and MC&A

Current Version of June Cornerstones (Operations-Based)



20

- Criticality Safety
- Chemical Safety
- Radiation Safety
- Emergency Preparedness
- Security/Material Control and Accounting (MC&A)

Goals or Interests Both Options Meet



22

- Both options meet the Commission direction.
- Both options would result in a process that gives reasonable assurance that the Strategic Plan mission, goals, and strategic outcomes would be met.



Pros and Cons for Hazards Analysis-Based Cornerstones

23

Pros:

- Results in oversight frameworks across NRC program areas that are very similar which should result in simpler and more effective communication and understanding.
- Organized in the way licensees did the hazard analysis and controls development in the ISA.
- Key attributes for ISA-related activities are integrated into cornerstones that reflect the way licensees' ISAs were developed and are maintained.
- Cornerstones will be consistent across types of licensees (not have to delete Criticality Safety cornerstone for some licensees).

Cons:

- Because of the complexity of the Accident Sequence Initiator cornerstone, stakeholder communications regarding this cornerstone could be difficult.
- "Accident Sequence Initiators" is not the same as "Initiating Events" and might be assumed to be by some internal and external stakeholders.

Pros and Cons for Operations-Based Cornerstones



24

Pros:

- ❑ Organized along safety program lines similar to the safety areas in 10 CFR Part 70 and how licensees implement safety at plants.
- ❑ Easier to communicate with stakeholders because it uses day-to-day operations structure.

Cons:

- ❑ Key attributes for ISA-related inspections are similar across cornerstones, thus separating what might be common inspection into separate areas. A failure in design would impact several cornerstones and thus could move the licensee across an action matrix for a problem in one area of performance.
- ❑ This would result in two very different regulatory frameworks for oversight in the agency (FCOP and ROP) when having the different frameworks is not necessary.
- ❑ Cornerstones will not be the same across licensees (Criticality Safety cornerstone not applicable to processors of natural uranium).

Summary



25

- Based on internal stakeholder comment, staff developed a hazards analysis-based set of cornerstones.
- Staff recognizes licensees would prefer the operations-based cornerstones because they believe this set would result in better communication with workers and members of the public surrounding their facilities.



United States Nuclear Regulatory Commission

Protecting People and the Environment

FUEL CYCLE SIGNIFICANCE DETERMINATION PROCESS (FCSDP)

Presentation to the ACRS Subcommittee on
Radiation Protection and Nuclear Materials

September 23, 2011

Dennis Damon

NMSS/FCSS



SDP Types

27

- SDP types applicable to ISA-related cornerstones
 - ▣ Criticality, Chemical, and Radiation Safety (10 CFR 70.61)
 - ▣ Accident Sequence Initiators, Safety Controls

- SDP types would apply to both cornerstone options

- Deterministic
 - ▣ Emergency Preparedness
 - ▣ Radiation Protection (10 CFR Part 20)
 - ▣ Security
 - ▣ Material Control and Accounting



SDP Types

28

- Desired characteristics of an SDP
 - ▣ Realistic/accurate
 - ▣ Practicable
 - ▣ Consistent
- Discussion of three conceptual types of SDPs
 - ▣ Deterministic Type
 - ▣ Case-by-case Type
 - ▣ PRA-based Type



Deterministic Type

29

- Based on qualitative criteria, not numbers
- But would have similar risk and safety significance objectives to other types
- Perhaps based on a refined risk-index defense-in-depth method
- Pros:
 - Simpler and less resource intensive than case-by-case and PRA-based types
 - Assignment of controls to general categories more objective than justifying generic failure data to plant-specific controls
 - Standardized, hence consistent across licensees
- Cons:
 - Less informed by analysis and data, hence less precise



Case-by-Case Type

30

- Evaluate risk and safety significance of each finding when it occurs
- Adjust ISA results using standardized NRC guidance and data
- Could be simplified quantitative method
- Pros:
 - ▣ Reasonably accurate
 - ▣ Standardized, hence consistent across licensees
 - ▣ Less resource intensive than PRA-based type
 - ▣ Could be more generic and simplified than plant-specific PRA
- Cons:
 - ▣ Quantitative risk technology for fuel cycle is underdeveloped
 - ▣ Hence, requires some quantitative development resources
 - ▣ Limited time to do risk assessment on which evaluation is based



PRA-Based Type

31

- Requires full PRA for all processes at all facilities
- Requires inspector notebooks for performing significance evaluation

- Pros:
 - ▣ Based on licensee PRA, thus most informed and precise basis

- Cons:
 - ▣ Requires orders of magnitude more resources
 - ▣ PRAs would not be standardized, hence significance might not be consistent
 - ▣ Quantitative risk technology for fuel cycle is underdeveloped



Initial Suggestion

32

- Preferred alternative
 - ▣ Deterministic Type SDP



CONCLUSION AND RECOMMENDATION

Presentation to the ACRS Subcommittee on Radiation
Protection and Nuclear Materials

September 23, 2011

Jonathan DeJesus

FCOP Enhancement Project Manager



Commission Direction

34

- Concise paper comparing ISAs for fuel facilities and PRAs for reactors
- Make modest adjustments to the existing oversight program to enhance its effectiveness and efficiency.
- Develop a set of cornerstones that could be applied to the FCOP.
- Provide an assessment of the work accomplished and recommendations for next steps.

Conclusion and Recommendation



35

- Further development of all cornerstones in the hazards analysis-based option
- Begin use of the performance deficiency concept
- Develop the deterministic type SDP
- Develop a performance assessment process based on SDP that includes an action matrix and considers cross-cutting areas
- Develop a supplemental inspection program based on licensee performance
- Further revise the Enforcement Policy

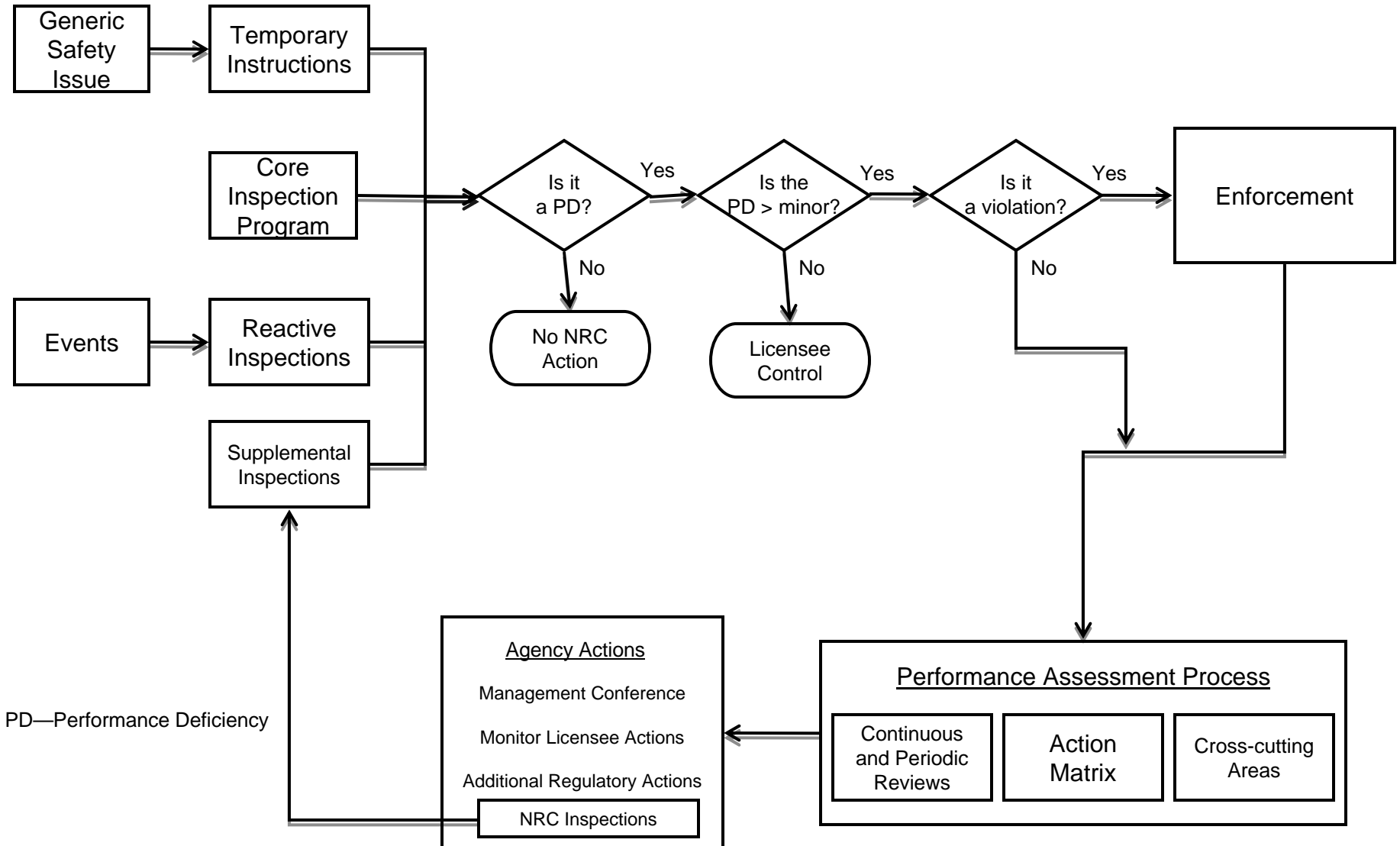
36

BACKUP SLIDES

Conceptual Diagram for Alternative



37



PD—Performance Deficiency

FUEL FACILITY VIEWS ON THE FUEL CYCLE OVERSIGHT PROCESS

Presented by Gerard Couture, Westinghouse

ACRS Subcommittee on Radiation Protection and Nuclear
Materials

September 23, 2011

Fuel Cycle Oversight Process (FCOP) Framework

- No “safety deficiency” with current oversight process – facilities operating safely
- Concerned with revolutionary approach - resource intensive and overly complex – Smart application of resources?
- Best approach is evolutionary and structured to consume minimal increase in NRC and licensee resources
- Concerned with proposed definition of performance deficiency

Corrective Action Program (CAP)

- NRC and industry essentially aligned on importance and use of effective CAP
- Industry willing to generate a CAP guidance document for NRC endorsement, once the Commission provides direction and NRC resources are available

Cornerstones

- Concerned with complexity and public's ability to understand process
- Concerned with use of color coding system and false parallel to reactors - risk profile of reactor and fuel facility not comparable
- Should rely solely on descriptive terms (e.g., very low, low safety significance)

Industry Recommendations* to Enhance the FCOP

- Better integrate ISA knowledge – risk significance of plant conditions
- Gain efficiencies in baseline inspection program
- Conduct timely reviews of ISA updates
- Annual Licensee Performance Reviews should be easily understandable for all stakeholders

Regulatory Initiatives Requiring NRC and Stakeholder Support

FUEL CYCLE OVERSIGHT PROCESS

Enhance NRC's Fuel Cycle Oversight Process (FCOP)
 Safety Culture Implementation
 Revise Enforcement Policy to Reflect CAP

REGULATORY INITIATIVES

Temporary Instruction (TI) for beyond design basis events under development
 Part 70 Appendix A Petition for Rulemaking
 Part 70.72 DG-3037–Facility Change Process
 Soluble Uranium Intake Draft Guidance
 Chemical Dermal Exposure Standards
 Design features in ISA (versus IROFS)
 Unplanned contamination events
 Onsite medical treatment of contaminated workers
 Changes during Construction (CdC)
 DG-8040 HP Surveys at Enrichment & Fuel Fabrication facilities
 DG-4018 on Airborne Releases
 DG-7007, Administrative Procedures for RAM shipment/receipt
 DG-7008, Leakage tests of packages for shipments of RAM

RULEMAKINGS

Proposed Part 40 Rulemaking
 Part 61 Preliminary Rule
 Part 61 Rulemaking to risk inform NRC's LLW regulations
 Potential Rulemaking on Prompt Remediation
 Part 21- Reporting of Fraudulent Parts
 Decommissioning Planning Rule
 Part 20 Radiation Protection Regulations
 EPA 40 CFR Part 190 & 192
 DOT Rulemaking to harmonize with TS-R-1
 Part 110 Final rule on import/export

SECURITY INITIATIVES/RULEMAKINGS

Cyber security assessments
 Part 73 Rulemaking for Enhanced Weapons and Security Event notifications
 Part 74 Preliminary Rule language for Material Control & Accounting
 Part 73 Rulemaking for Fuel Cycle Security
 Potential Rulemaking on Chemical Security
 Update Counterintelligence aspects of NEI 08-11
 Part 37 Rulemaking on Physical Protection of Category 1 and 2 sources
 PRM on Part 70 by American Physical Society on non-proliferation assessments
 Fall 2011 Information Security Workshop
 Potential Part 95 Rulemaking on Classified Information

Industry Summary

- Incremental changes to FCOP are most appropriate and likely achievable within existing resources or with a minimal increase, in the absence of an identified safety concern
- NRC and industry need to prioritize this NRC-led effort in view of numerous ongoing regulatory initiatives, some of which began before FCOP and industry consider to be a higher priority than FCOP

Backup Slide

Industry Proposed Definition of Performance Deficiency

- “An occurrence at or the state of a licensed facility that is the result of a licensee not meeting a regulatory requirement or license commitment. If the occurrence or state is of low to no safety significance and the licensee identified (including events) the occurrence or state and is managing them in accordance with their Corrective Action Program this would not constitute a Performance Deficiency.”