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**NUCLEAR REGULATORY COMMISSION**

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Non-Power Production and Utilization Facilities

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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NON-POWER PRODUCTION AND UTILIZATION FACILITIES

SUBCOMMITTEE

+ + + + +

TUESDAY

JANUARY 12, 2021

+ + + + +

The Subcommittee met via Teleconference,  
at 2:00 p.m. EST, Ronald G. Ballinger, Chairman,  
presiding.

COMMITTEE MEMBERS:

RONALD G. BALLINGER, Chairman

DENNIS BLEY, Member

CHARLES H. BROWN, JR. Member

WALTER L. KIRCHNER, Member

JOSE MARCH-LEUBA, Chairman

DAVID A. PETTI, Member

JOY L. REMPE, Member

PETER RICCARDELLA, Member

MATTHEW W. SUNSERI, Member

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ACRS CONSULTANT:

STEPHEN SCHULTZ

DESIGNATED FEDERAL OFFICIAL:

CHRISTOPHER BROWN

DEREK WIDMAYER

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

2:00 p.m.

1  
2  
3 CHAIRMAN BALLINGER: The meeting will come  
4 to order, please. This is a meeting of the Advisory  
5 Committee on Reactor Safeguards SHINE NPUF  
6 Subcommittee. I'm Ron Ballinger, chairman of the  
7 SHINE NPUF Subcommittee. Members in attendance today  
8 are Matt Sunseri, Charles Brown, Dennis Bley, this  
9 thing keeps moving, Jose March-Leuba, Joy Rempe, Walt  
10 Kirchner, Dave Petti, Pete Riccardella, Steve Schultz,  
11 and I think I've got all the people.

12 Chris Brown and Derek Widmayer are the  
13 Designated Federal Officials for this meeting. Chris  
14 and Derek, okay, the court reporter is on. Don't need  
15 to read that.

16 The purpose of today's meeting is for the  
17 subcommittee to discuss the review approach for the  
18 operating license for SHINE. Members of the NRC staff  
19 and SHINE are participating as observers.

20 The ACRS was established by statute and is  
21 governed by the Federal Advisory Committee Act, FACA.  
22 The NRC implements FACA in accordance with its  
23 regulations found in Title 10 of the Code of Federal  
24 Regulations Part 7. The committee can only speak  
25 through its published letter reports. We hold

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1 meetings to gather information and perform preparatory  
2 work that will support our deliberations at a full  
3 committee meeting.

4 The rules for participation in all ACRS  
5 meetings were announced in the Federal Register on  
6 June 13, 2019. The ACRS section of the U.S. NRC  
7 public website provides our charter, bylaws, agendas,  
8 letter reports, and transcripts of all full and  
9 subcommittee meetings including slides presented  
10 there.

11 The meeting agenda for this meeting was  
12 posted there. Portions of this meeting may be closed  
13 to protect proprietary information pursuant to 5 USC  
14 552(b)(c)(4). I don't think that's going to happen  
15 here.

16 For the open portion of the meeting we  
17 have set five minutes aside for comments from members  
18 of the public attending or listening to this meeting.  
19 We so far have not heard -- had any request for making  
20 a statement from a member of the public.

21 The transcript of the meeting is being  
22 kept and will be made available on our website for the  
23 open portion of the meeting. We have a bridge line  
24 established, and it's operating for the public to  
25 listen to the meeting. To minimize disturbance, the

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1 public line will be kept in a listen-in only mode.  
2 The public line will be terminated during any closed  
3 portion.

4 To avoid disturbance, we request that  
5 attendants make sure they are muted, and I'm sure the  
6 public line is all set.

7 Note that we have scheduled the first  
8 subcommittee for SHINE on March the 17th, all day, and  
9 March 18th, morning only.

10 Also, as I think most of the members know,  
11 we have collected a large amount of information  
12 related to SHINE, more than we can probably read. And  
13 we have access to a SharePoint site which contains  
14 pretty much everything related to SHINE, but note that  
15 that SharePoint site is a snapshot. It's an evolving  
16 snapshot so that we anticipate that by the time a  
17 particular chapter gets reviewed, the material that's  
18 on that website or SharePoint site will be complete.

19 But we need to remember that that's  
20 probably not the case now because our first meeting is  
21 not until March, so we anticipate that the complete  
22 review material for chapters that will be looked at in  
23 the March subcommittee will be on the site and  
24 complete 30 days before March the 17th.

25 Okay, so that's my introduction. The

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1 slides are up and --

2 MEMBER BROWN: Question, Ron. You said  
3 something about the 17th? What were the times of  
4 that?

5 CHAIRMAN BALLINGER: All day on the 17th.

6 MEMBER BROWN: And half day on the 16th.

7 CHAIRMAN BALLINGER: Half day on the 18th.

8 MEMBER BROWN: Oh, it's been shifted from  
9 the last schedule we got?

10 MR. BROWN: Yes.

11 MEMBER BROWN: Okay. I just wanted to  
12 make sure because I've got to mark this on a separate  
13 calendar. Okay.

14 MR. BROWN: Yes, I think we will be  
15 sending out a revised rainbow chart soon.

16 MEMBER BROWN: Okay. I'll wait until I  
17 get that then. It's not a problem. I just wanted to  
18 make sure. Thank you.

19 CHAIRMAN BALLINGER: Note that the generic  
20 path will be for a subcommittee meeting in one month  
21 followed by time set aside for the following month's  
22 full committee meeting. So that's the normal, if you  
23 want to call it that, path that we'll provide. Of  
24 course, depends on how the review goes, but we needed  
25 to get things scheduled so that we had time slots

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1 available.

2           Okay, so really the most -- what I've done  
3 since the last time is to update and hopefully do a  
4 better job of review chapter assignments, and that  
5 material was sent out to the members earlier this  
6 week. And so if a member looks at that and says well,  
7 wait a minute, you haven't got it quite right, please  
8 let Chris and I know, and we'll put out a revised  
9 schedule, if you will. But the most important -- and  
10 the schedule from the staff, which is slide number 3,  
11 has not changed. We met with the staff. We met with  
12 the staff yesterday. I think yesterday --

13           MEMBER RICCARDELLA: Excuse me. This is  
14 Pete. Does everybody have the slides up? I've got a  
15 message on my screen says can't display content.  
16 There was a problem displaying the content.

17           CHAIRMAN BALLINGER: I'm looking at it.  
18 It looks okay to me.

19           MEMBER REMPE: I can see them.

20           MEMBER RICCARDELLA: Should I disconnect  
21 and reconnect?

22           CHAIRMAN BALLINGER: Do you have it by  
23 email?

24           MEMBER RICCARDELLA: I think I -- did it  
25 come through the personal email?

1                   MEMBER BROWN: I don't have it either. So  
2 I don't have any slides either. I've got my paper  
3 ones, but that's it, so I'm okay.

4                   MR. BROWN: I will forward them to you,  
5 Pete.

6                   MEMBER RICCARDELLA: Okay. Thank you.

7                   CHAIRMAN BALLINGER: In any case, there's  
8 no change from the last meeting, okay? So that  
9 shouldn't be a big issue with respect to the staff  
10 slides.

11                   The most important slide is slide number  
12 5 which if we can put that up there, at the last  
13 meeting there were a bunch -- there was some questions  
14 and concern about the details of the path that we're  
15 going to try to take. And so slide 5 is our  
16 interpretation of what we think should happen, and  
17 it's in accordance with the ACRS rules, if you will.  
18 And so this is the slide to look at.

19                   So 30 days before the subcommittee  
20 meeting, the chapter goes to a member. Then the  
21 member is asked to review the chapter by 15 days  
22 before the meeting and identify any substantive issues  
23 that may remain -- that would prevent the reviewer  
24 from saying things are okay, if you will. Those  
25 questions would then be forwarded to the staff 15 days

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1 before the subcommittee meeting, so that during the  
2 subcommittee meeting, the presentation by the staff  
3 and/or the applicant would be prepared to address the  
4 concerns that a member or members may have.

5 And then following that, assuming that  
6 things are ironed out, if you will, we'd have a full  
7 committee meeting following the subcommittee meeting  
8 where we would have a member evaluation or another  
9 staff or applicant presentation as needed.

10 So then -- hopefully, that is a path that  
11 gets us through individual chapters. But it also  
12 allows for iteration, if you will, if somehow for some  
13 reason or another an issue was not adequately  
14 addressed. So we've identified subsequent  
15 subcommittee and full committee meetings for that  
16 eventuality. Hopefully, it won't occur.

17 We'll have three interim letters which is  
18 why we have to have full committee meetings following  
19 the subcommittee meetings because we can't produce a  
20 letter unless we have a full committee.

21 So that's the scheme, and I think that  
22 reflects what members wanted to hear or see, so I  
23 would ask if there are questions associated with that.

24 MEMBER MARCH-LEUBA: Yes, this is Jose.  
25 For many chapters, this might work, but especially for

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1 Chapter 13, accident analysis, almost every member  
2 wants to be involved on it. I can do the review in 15  
3 days for sure. I'm not sure the whole committee can  
4 do the review in 15 days, the SC minus 30, SC minus  
5 15.

6 CHAIRMAN BALLINGER: Well, I don't know  
7 why that wouldn't be the case because if all the  
8 members know what the schedule needs to be or would  
9 like to be, it doesn't preclude a single member from  
10 saying on 15 days before the meeting, not necessarily  
11 the lead reviewer, that --

12 MEMBER MARCH-LEUBA: So you are expecting  
13 individual reviews by whoever member wants to review  
14 each chapter?

15 CHAIRMAN BALLINGER: Sure. Yeah, I mean  
16 that's --

17 MEMBER MARCH-LEUBA: Not a consensus?

18 CHAIRMAN BALLINGER: Well, the consensus  
19 would occur as part of the subcommittee presentations,  
20 I would guess. You know, it's always been the case  
21 that, you know, when we have an application to review,  
22 not every member reads every chapter, I don't think,  
23 at least not in detail. So I don't know. I think  
24 this is probably -- will probably work. I mean we're  
25 -- I guess I'm assuming that we'll get a member that

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1 wakes up in the morning on 12 days before the  
2 subcommittee meeting and decides to read the chapter  
3 and then insists that they meant to say something 15  
4 days before, but who knows?

5 MEMBER PETTI: So, Ron, in the case of  
6 chapters where there's more than one member, are you  
7 going to go with a lead that would collect all the  
8 comments?

9 CHAIRMAN BALLINGER: I would hope that  
10 that would be the case. I would hope -- that would be  
11 the most smoothly running thing, especially where  
12 there's an issue because, you know, individual members  
13 think things a little bit differently, so I would  
14 expect that for members that have an avid interest, if  
15 you will, but that's the best way to do it. Because  
16 it just -- we just end up with lots of confusion if we  
17 don't do it that way.

18 MEMBER PETTI: I think it will work for  
19 most of the chapters. My biggest concern, which I  
20 sent in the email, is that everybody probably needs to  
21 look at four.

22 CHAIRMAN BALLINGER: Yeah, no, I mean  
23 that's --

24 MEMBER PETTI: The transient -- the  
25 accident analysis chapter, you're going to be back

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1 and forth because three quarters of the stuff you need  
2 is there, so --

3 CHAIRMAN BALLINGER: Yeah.

4 MEMBER PETTI: -- it's the heart and so  
5 for some things that's going to be the case.

6 CHAIRMAN BALLINGER: Yeah, what I would --  
7 one thing that I would propose that we do is that  
8 Chris and I will accumulate -- I don't know what --  
9 they used to call it some kind of website or  
10 something, comments from members that can go and read  
11 this document where, something like what you said, we  
12 think you should look at Chapter 4 because it's a good  
13 thing to do first. We would put those notes up, and  
14 so members could go and see it. It would be kind of  
15 an evolving document which might be helpful. What do  
16 you think?

17 (Simultaneous speaking.)

18 MEMBER REMPE: I guess I'd like to discuss  
19 Chapter 4 a bit more, and I don't know whether to do  
20 it if we go back to look at the schedule or if we look  
21 at the assignments. But I -- if we look at the  
22 assignments, we've got a consultant who's supposed to  
23 be helping us, and I'm just wondering about timing.  
24 And I agree with Dave that we do want to have --  
25 encourage everyone to look at Chapter 4 because it

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1 does go into more depth about how the facility  
2 operates or how they envision the facility would  
3 operate.

4 So I would, even now, encourage -- I wish  
5 you could add all members should participant (audio  
6 interference) this one as well as Chapter 13. But I'm  
7 wondering about four consultants and what they'll be  
8 able to see and how well they'll be able to contribute  
9 because your schedule has that subcommittee meeting  
10 occurring in March. Are we confident they'll had the  
11 time to --

12 CHAIRMAN BALLINGER: Yes, note by the way  
13 that consultant is really a place holder. We don't --  
14 we'd like to be able to use a consultant if we need  
15 to, so that doesn't mean we have one for any chapters.  
16 And I'm guessing we may get some word from Chris.  
17 Chris was going to check on the status of the  
18 consultant.

19 MR. BROWN: Ron, we will not discuss that  
20 at this time.

21 CHAIRMAN BALLINGER: Okay, all right.

22 MR. MOORE: This is Scott. I sent out an  
23 email just in advance of this to the members about the  
24 consultant. So you can talk about what a consultant  
25 may or may not do, but please don't talk about the

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1 status of the consultant.

2 CHAIRMAN BALLINGER: Okay. All right.  
3 Okay. Okay.

4 MEMBER REMPE: Sorry, I missed that email.

5 CHAIRMAN BALLINGER: Well, I got it 15  
6 minutes ago. I'm not at my NRC computer.

7 Also, I mean I would chime in with Dave on  
8 Chapter 4. If you go back and look at the  
9 construction permit application, there was a bunch of  
10 extensive presentations on Chapter 4. But since that  
11 time the process has changed so that my guess is if  
12 there's a fair difference between the Chapter 4 or the  
13 equivalent in the construction permit, and the Chapter  
14 4 related to the operating permit, so.

15 Okay? Did I get disconnected?

16 MEMBER PETTI: No, I hear you.

17 CHAIRMAN BALLINGER: Oh, okay. All right,  
18 so that's my story, and I'm sticking to it. You know,  
19 I think if this runs the way we hope it will, it will  
20 be fairly smooth, and I expect that -- you know, we've  
21 been meeting with the staff every other week, and so  
22 we're very much connected there. And so everybody  
23 knows what their expectations are. But we won't know  
24 until March, I guess.

25 MEMBER MARCH-LEUBA: And just to be sure,

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1 you expect an email to Chris with any questions of a  
2 Chapter X, not a letter.

3 CHAIRMAN BALLINGER: I don't care what the  
4 format is, and I'm not sure that Chris does. But I  
5 imagine an email, if you will, would work fine. In  
6 other words you say issues that you want discussed?

7 MEMBER MARCH-LEUBA: Yes, because back in  
8 -- was it December or November when we talked about  
9 this, we were talking about the responsible member  
10 writing a letter to file on the chapter and not having  
11 a subcommittee meeting.

12 CHAIRMAN BALLINGER: No, I think because  
13 -- I think because we have to produce an interim  
14 letter for each of those areas, that the eventual  
15 letter, if you want to call it, or note memo, from the  
16 lead member has to come. So I'm guessing that after  
17 the -- not guessing, I think that what has to happen  
18 is that after the subcommittee meeting at the latest,  
19 the lead member would produce a memo, if you will,  
20 that is in effect a review.

21 Now if there are no substantive issues, in  
22 other words no issues at all that crop up, then at the  
23 subcommittee meeting that note could be just presented  
24 there or provided there. If there are substantive  
25 issues that have to be discussed at the subcommittee

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1 meeting, then, you know, you can't produce a memo  
2 instantly, so that would have to happen a little bit  
3 later. That's why the full committee meeting is  
4 important following the subcommittee meeting.

5 MEMBER KIRCHNER: Ron, this is Walt. Just  
6 so I understand your intentions though, in this chart  
7 that's in front of us right now we have three color  
8 coded groups.

9 MEMBER BROWN: Which chart --  
10 (Simultaneous speaking.)

11 MEMBER KIRCHNER: Current staff schedule.  
12 And so is the intent that you would have an interim  
13 letter for each of the color groups and then a final  
14 final letter?

15 CHAIRMAN BALLINGER: Yes.

16 MEMBER KIRCHNER: Okay. In that case then  
17 perhaps we don't need the kind of memos to file that  
18 we did with NuScale on the second pass.

19 CHAIRMAN BALLINGER: We have to --

20 MEMBER KIRCHNER: You said use NRC email.  
21 I would think that the NRC email would be adequate for  
22 identifying issues.

23 CHAIRMAN BALLINGER: Okay, yeah.

24 MEMBER KIRCHNER: But if you intend to  
25 write an interim letter that addresses the first group

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1 being Chapters 1, 4, 5, 6, 15, 12, then I'm just  
2 suggesting that we probably don't need additional  
3 memos to file because it looks like you're going to  
4 cover all the material.

5 CHAIRMAN BALLINGER: Hopefully. That's --  
6 hopefully.

7 MEMBER PETTI: So, Ron, I'm struggling  
8 with what schedule relative to our cross cut.

9 CHAIRMAN BALLINGER: Say again?

10 MEMBER PETTI: Where are the cross cuts in  
11 this schedule?

12 CHAIRMAN BALLINGER: Yes, that's a good --  
13 I'm glad somebody is actually reading it. We will --  
14 as we get into this review, we will identify, I'm  
15 sure, substantive issues that required additional  
16 discussion in the subcommittee. And I'm hoping that  
17 as a result of that process, that early on we will get  
18 an idea of where the cross-cutting issues might --  
19 focus areas might be. And then we have to come up  
20 with some kind of schedule for that. But we don't  
21 know what they are. So until we have a good reading  
22 on what members think they are, we can't really do  
23 much.

24 We've got -- if you look at the schedule,  
25 we've got -- it's the yellow column which identifies

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1 time during which we do the focus areas if needed.  
2 The focus areas identified on slide number 8 are  
3 really -- I don't know what the right word is.

4 MEMBER KIRCHNER: Placeholders.

5 CHAIRMAN BALLINGER: Placeholders. You're  
6 right. Placeholders. We don't -- you know, based on  
7 discussions with the members and the staff, that's an  
8 idea.

9 Now I should make Charlie happy, is that  
10 --

11 MEMBER BROWN: I can't see what you're  
12 doing right now. I don't even know where you are. I  
13 don't have any shared screen up again. Did anybody  
14 solve that problem yet? Does everybody else see the  
15 shared slide?

16 MEMBER MARCH-LEUBA: Yes.

17 CHAIRMAN BALLINGER: I can.

18 MEMBER BROWN: I can see nothing, so I  
19 have no idea where -- I mean you've been bouncing  
20 around, so I've kind of lost track of what you're  
21 talking about.

22 CHAIRMAN BALLINGER: Okay, well, you don't  
23 need this for what I'm about to say. It turns out  
24 that in discussion with the staff, the most -- what do  
25 you want to call it -- intensive review and back and

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1       forth with RAIs and stuff is occurring related to  
2       Digital I&C. And so we have been in contact with  
3       Charlie and told him about that, and the SharePoint  
4       site that we have access to has a folder in it called  
5       Digital I&C, and so the staff is going to -- is on  
6       notice that they will keep Charlie up to date as often  
7       as possible on the Digital I&C issue.

8               Notice that Digital I&C doesn't appear as  
9       a focus area, but it's just an individual area. But  
10      it's a different platform than we're used to dealing  
11      with, and so that's why --

12             MEMBER BROWN:     What do you mean by  
13      platform?

14             CHAIRMAN BALLINGER:   Well, now you're  
15      exceeding my pay grade.

16             MEMBER BROWN:     What -- you mean the  
17      instrumentation platform or --

18             CHAIRMAN BALLINGER:   Yeah, yeah. And I  
19      think, let's see -- I'm hopeful that Steve Lynch is on  
20      board here. I don't see him.

21             MR. LYNCH:     Yes, I'm here. I just had to  
22      unmute myself.

23             CHAIRMAN BALLINGER:   Okay, so, Steve, can  
24      you give us a better description than I'm able to?

25             MR. LYNCH:     So for the HIPS platform and

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1 I think SHINE is also on as well, but the HIPS -- or  
2 SHINE is using the HIPS platform.

3 MEMBER BROWN: That's what we did for  
4 NuScale.

5 MR. LYNCH: Yes, it has been customized,  
6 but yes, yes. They are using the HIPS platform from  
7 Rock Creek Innovations as the basis for their I&C  
8 systems.

9 MEMBER BROWN: Okay, is there going to be  
10 some comparison between the HIPS -- I mean the NuScale  
11 implementation? You say it's been -- what has it  
12 been? Modified?

13 MR. LYNCH: It has been customized for  
14 their facility, and one of the things SHINE has done  
15 is out of the NuScale review there were those 65  
16 application-specific items that came out of the safety  
17 evaluation for that. SHINE has, in response to RAIs,  
18 addressed those 65 application-specific items to  
19 further specify how they have implemented or not as  
20 appropriate for their facility. So there are details  
21 included in information that SHINE has provided to do  
22 that cross walk from what had been looked at in the  
23 past and what is specific for their facility.

24 MEMBER BROWN: Well, I just found the  
25 September 2020 FSAR version yesterday. And are they

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1 going to have an architecture diagram that shows how  
2 it's being implemented regardless of the application  
3 specific things?

4 I mean we agreed with the NuScale approach  
5 regardless of the application because the architecture  
6 met all of our metrics of the fundamentals, the  
7 fundamental design principles. We didn't see what was  
8 in the application-specific stuff. So are we going to  
9 get an equivalent set of information relative to the  
10 architecture, how it's done, and what are the  
11 input/outputs, and how it gets sent out to business  
12 units as opposed to in place operating type equipment?

13 MR. LYNCH: Sure, so with respect to  
14 architecture and diagrams and understanding, those are  
15 specific technical areas that our staff is currently  
16 engaging with SHINE on. We are working on refining an  
17 additional list of request for additional information  
18 that do address in part some of the architecture of  
19 the system, and we intend to engage with SHINE as  
20 appropriate to get further details as needed to make  
21 our safety conclusions, and that is one of the topics  
22 we will be discussing with SHINE further. So as that  
23 information is available, that is something that we  
24 can share with members.

25 MEMBER BROWN: Okay, you recognize that

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1 that's the committee's fundamental approach is looking  
2 at it from an architectural standpoint as well as the  
3 input/output of the plant communications or whatever  
4 you want to call it, control of access, one-way  
5 communications, so people can't get in with the  
6 internet into these systems that are inside the plant  
7 actually doing the processes.

8 CHAIRMAN BALLINGER: Folks, we're starting  
9 to get into a technical discussion.

10 MEMBER BROWN: I'll stop, Ron. I just  
11 want to make sure he understands what we're going to  
12 be looking for. I'll be trying to review 77 RAIs on  
13 application-specific stuff that's going to be very  
14 difficult, if not unintelligible.

15 So I mean there's a specific amount of  
16 time, and our focus is going to be on what we focused  
17 on for NuScale. As long as we know what the critical  
18 attributes are that we have to protect against, what  
19 are they trying to trip on or turn itself off or  
20 access or apply something else. So I'm just trying to  
21 let you know that I'm not going to be able to sit  
22 around and look at software preparation or stuff like  
23 that or line by line code or whatever it is that the  
24 people might be thinking. But the architecture is  
25 still the fundamental issue for these types of

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1 processes as well.

2 MR. LYNCH: I understand and appreciate  
3 that feedback.

4 CHAIRMAN BLEY: Ron?

5 CHAIRMAN BALLINGER: Yes, sir.

6 CHAIRMAN BLEY: I guess really Chris. I  
7 have searched my personal email and my NRC email, and  
8 I don't find any delivery of the new slide show. So  
9 please send it to me as well. Maybe send it to  
10 everybody.

11 CHAIRMAN BALLINGER: The new what?

12 MEMBER MARCH-LEUBA: The slides, I didn't  
13 get the slides either.

14 CHAIRMAN BLEY: The slides you have on the  
15 screen now.

16 MR. BROWN: Well, the -- our guidelines  
17 are to put everything in the SharePoint, but I will  
18 forward them to you.

19 CHAIRMAN BLEY: Okay, I looked in  
20 SharePoint and didn't find it either.

21 MR. BROWN: They're there, but I will  
22 forward them.

23 MEMBER BROWN: Dennis, go to the  
24 SharePoint reference material and then you can find  
25 SHINE and then DI&C folder, and under SHINE, you'll

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1 see the slides.

2 CHAIRMAN BLEY: Charlie, I'm looking for  
3 these slides.

4 MEMBER BROWN: Yeah, that's where I found  
5 them.

6 CHAIRMAN BALLINGER: Gosh, I thought we  
7 sent them out.

8 MR. BROWN: They're in the --  
9 (Simultaneous speaking.)

10 MR. BROWN: Please listen. They're in the  
11 January subcommittee folder, but I will send them to  
12 you.

13 MEMBER PETTI: Ron, I had a question to  
14 get back to your slide 8 and these cross cuts.

15 CHAIRMAN BALLINGER: Yeah.

16 MEMBER PETTI: I assume that at some point  
17 the lead member needs to lay out for the staff and the  
18 applicant what are the issues, how they'd like to see  
19 the information presented so that it makes for the  
20 most efficient review that we can have of the cross  
21 cut. Is that --

22 CHAIRMAN BALLINGER: Yeah, I would assume,  
23 but remember we don't even know that, for example,  
24 chemical processing or source -- we don't know what  
25 the actual cross-cutting areas or focus areas will be.

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1 Maybe they'll be these. And therefore, we don't even  
2 know who the lead person would be because if we come  
3 up with a different focus area that's not on this  
4 list, then there may be a different lead person.

5 MEMBER PETTI: Yeah, that's fine, it's  
6 just when we get to these -- as I recall, when we did  
7 it from NuScale, you know, we told them exactly what  
8 we were looking for to help expedite it.

9 CHAIRMAN BALLINGER: Yeah.

10 MEMBER PETTI: Because I read the FSAR  
11 before Christmas, the version that was available, and  
12 the source term stuff is in bits and pieces, and so if  
13 that survives, you know, there's a certain way I'd  
14 like to see it presented so that it's logical and we  
15 can dispense with it in a reasonable amount of time.

16 CHAIRMAN BALLINGER: Yeah, well that's --  
17 this is a very good example. Here, we have source  
18 term identified, and you as a lead, you may decide  
19 that it doesn't need to be a focus area and end of  
20 story. But you may decide well, you know, that was a  
21 pretty good idea. Let's put that on there and then go  
22 from there.

23 MEMBER PETTI: Yeah.

24 CHAIRMAN BALLINGER: Same goes for the  
25 others. I mean these are just, you know, I assume

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1 educated guesses, but I'm guessing that we will -- if  
2 you look at the blue area, you find that final SER to  
3 ACRS is July, okay?

4 My hope would be that in the June -- by  
5 the June area, roughly, we will have identified, maybe  
6 earlier, focus areas as a result of members doing  
7 reviews. And that would fit well with arranging  
8 discussions of these in the August -- July, August,  
9 you know, that area so that we can deal with it before  
10 having to do a final letter in October.

11 Hopefully, the scheme of identifying  
12 issues in individual chapters and having them  
13 discussed in subcommittee meetings would kind of pave  
14 the way for that.

15 CHAIRMAN BLEY: This is Dennis. Chris,  
16 I'm sorry, they're there. I found them. Up until  
17 today, everything I've been looking for I found in the  
18 reference material. I didn't realize you'd started  
19 posting in the subcommittee folder. Got them.

20 MR. BROWN: Thank you.

21 MEMBER REMPE: So just to make sure, I was  
22 looking for the email that Scott sent, but when Walt  
23 brought up the question maybe going to Slide 4, Walt  
24 brought up the question about if you really need the  
25 chapter letter -- or member the letter, report. We do

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1 want that even if we do an interim full committee  
2 letter because one might say well, the full committee  
3 letter might start out -- the interim letter might say  
4 we looked at Chapters A through X, A through E. There  
5 were no problems with C and D, but we are interested  
6 in learning more about the other ones. And so do we  
7 need this member letter report for sure, or what was  
8 the resolution of what Walt brought up because I had  
9 the same question?

10 CHAIRMAN BALLINGER: Somehow, we need to  
11 have material to be used for the interim letters. Now  
12 it may be -- let's just say for going in, that the  
13 chapters in the blue group or whatever it is, the  
14 first group, there are no issues that even need to be  
15 discussed at the subcommittee meeting. In that case,  
16 then the material that we would use for the interim  
17 letter would be very minimal, in other words, a note  
18 from the reviewer or as part of a discussion that  
19 there are no issues. Then the interim letter would  
20 become a couple of paragraphs long.

21 On the other hand, if there are  
22 substantive issues in one of those chapters that  
23 require a discussion in the presentation in the  
24 subcommittee from the staff or the applicant, then we  
25 need a little bit more material to document that so

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1 that we can produce the interim letter.

2 Now how -- what form that comes in I guess  
3 as point of discussion I would say that if there are  
4 no issues, then it can be a pretty -- an email. If  
5 there are issues, then I would think that the members  
6 out of that subcommittee would come something a little  
7 bit more than an email. Now what form it takes, that  
8 I'm not sure of. And I'm sure I would appreciate some  
9 input on what that should be. But we would have to  
10 document that because we would put it in an interim  
11 letter and that it eventually -- it would find its way  
12 into the final -- into the final letter.

13 MEMBER REMPE: So I guess I think we're  
14 adding too much formality to this because what would  
15 have normally been done in the past would have been  
16 that the lead member for each of these chapters would  
17 generate a couple of paragraphs sent to you and Chris  
18 saying this is what I think we decide on it. We can  
19 be a little bit more inclusive and include the other  
20 folks that have identified (audio interference) send  
21 that to you, but I'm not quite sure we need this  
22 member letter to file which gets posted on the website  
23 and this stuff (audio interference) understanding what  
24 it is you're proposing to do. It seems a little bit  
25 too much to have this kind of (audio interference).

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1 CHAIRMAN BALLINGER: With respect to  
2 posting things on the website, I mean we do have to  
3 somehow document what we've done. So one way or the  
4 other we have to do that. Now whether that comes, I  
5 guess in the interim letter that we produce, that's an  
6 official document from the committee, so I would guess  
7 that that's the point at which something gets  
8 published officially, right?

9 MEMBER REMPE: Yes, so I think definitely  
10 you want an interim letter for the chapters. I  
11 definitely think we should be providing a paragraph  
12 saying these things we want to explore further or --  
13 and will include in the focus areas or we're done with  
14 this chapter (audio interference) to do.

15 CHAIRMAN BALLINGER: Whatever the members  
16 and others would like to say, sure. Hopefully, as a  
17 result of the subcommittee discussion, there are no  
18 continuing issues other than maybe confirmatory-type  
19 stuff, but who knows.

20 MEMBER REMPE: Yeah, I think that I would  
21 modify that a little bit because we will send you  
22 something, if I go to page five in advance about these  
23 are the things we'd like to be discussed at the  
24 subcommittee meeting, and so that's a point, an action  
25 item for the leads on each chapter, and then following

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1 it we send you a paragraph saying our (audio  
2 interference) make sure we agree with the other leads  
3 or if it's the whole group, and -- say does anybody  
4 have any other comments, these are my issues. And we  
5 can go around at the end of each discussion and ask  
6 members did they (audio interference) review this  
7 thoroughly, but I don't feel that (audio interference)  
8 like we did for NuScale (audio interference).

9 CHAIRMAN BALLINGER: Yeah, no. What  
10 you're saying is I'm sure fine, but the thing that  
11 will throw this into a cocked hat is if we get input  
12 from a member at a very late date that is out of  
13 sequence. We'll just have to deal with that if that  
14 occurs.

15 MEMBER REMPE: And it definitely could  
16 occur. So when I looked at Chapter 4, where it (audio  
17 interference) provides input to the criticality and a  
18 bunch of other things, it could happen. And so you  
19 may have -- if I were to (audio interference) I'd have  
20 to say if you see anything that's X, Y, and Z, but A  
21 through K we're going to be talking about a division,  
22 that we talked about, of chapters, whether it's  
23 Chapter 13 or --

24 (Simultaneous speaking.)

25 MEMBER REMPE: -- it'll be with the folks

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1 here. And that might be something (audio  
2 interference).

3 CHAIRMAN BALLINGER: That's important  
4 because, by the time we write the final letter,  
5 everything should -- well, obviously, will have to be  
6 ironed out. So the interim letters are just that.  
7 They're interim and so in the case of Chapter 4, it  
8 may be like you say that there's -- we need to look at  
9 Chapter X, Y, and Z that has its tentacles in there,  
10 either that or the focus area and so, by the time we  
11 get through reviewing most of the chapters -- and I  
12 keep saying the middle group -- we will have a good  
13 idea of the focus areas. And that hopefully that will  
14 be all feed into the final letter which will get --  
15 which at that point all of the issues have to be --  
16 have to be resolved. Either that or we have to say we  
17 don't.

18 MEMBER PETTI: So it's fair to say then,  
19 Ron, that the interim letters have to address all of  
20 the chapters that were reviewed. Some may be a simple  
21 paragraph, right? We reviewed it. There was no  
22 issue. That's the input from the member to you.  
23 Others could be more involved.

24 CHAIRMAN BALLINGER: Sure, and the more  
25 involved ones would be the focus of the subcommittee

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1 presentation.

2 MEMBER PETTI: Right, right.

3 CHAIRMAN BALLINGER: Okay. Unless there  
4 are other questions, I think we've pretty much  
5 exhausted the questions. I think unless there are  
6 other questions, we probably need to now open the  
7 public line.

8 MEMBER BROWN: Nope. I've got a question.

9 CHAIRMAN BALLINGER: Okay.

10 MEMBER BROWN: All right, I couldn't find  
11 my mic. I finally got the slidethings going somehow.  
12 I don't know why.

13 I've looked at the rainbow chart and I've  
14 looked at the current staff schedule and the  
15 subcommittee dates, some various chapters don't line  
16 up with what's in the rainbow schedule. It's not  
17 clear to me that we've got it clear. For instance,  
18 for Chapter 7 it says there's going to be a  
19 subcommittee meeting in July. And the SE will be  
20 ready by April 21st. Let me see. Is that Chapter 7?  
21 Yes. May 21st.

22 So are there going to be meetings  
23 scheduled? The quick look I took at the SR Chapter 7  
24 almost indicated that we were probably going to need  
25 a subcommittee meeting on that chapter alone. Now I

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1 might change my mind once I look at it in more detail.

2 CHAIRMAN BALLINGER: Well, first, Chris  
3 has been working through the schedule, so I don't  
4 think we need to worry about what may or may not be  
5 out of sequence right now because we'll fix that. And  
6 the second, as we go along, we will --

7 MEMBER BROWN: Well, March 21st isn't even  
8 scheduled, for instance.

9 CHAIRMAN BALLINGER: March 21st?

10 MEMBER BROWN: Yes, the current staff  
11 schedule, it's dated 12/1/20 that you sent out in your  
12 seven or eight slides, so it's March 21st as being a  
13 schedule for human factors, Chapter 7.

14 CHAIRMAN BALLINGER: Boy, I must be  
15 looking at the wrong --

16 MEMBER BROWN: For the SE, you'll see May  
17 21st was the subcommittee meeting.

18 MR. BROWN: I'm not sure what you're  
19 looking at.

20 CHAIRMAN BALLINGER: I'm not sure either.

21 MEMBER BROWN: Slide 3.

22 MEMBER KIRCHNER: Charlie, this is Walt.  
23 It's May of 2021. It's not the actual dates that  
24 they're showing. (Audio interference) as well, a  
25 while back, but they're just saying it's somewhere --

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1 subcommittee date somewhere in May '21. What they  
2 mean is May 2021.

3 MEMBER BROWN: Well, I didn't get that.  
4 All right.

5 CHAIRMAN BALLINGER: We won't make that  
6 kind of mistake, I hope.

7 MEMBER BROWN: All right. If they  
8 customize the HIPS system, I remember the HIPS system  
9 and I remember the architecture and I have diagrams  
10 for that, so it's easy for me to compare and see they  
11 haven't deviated from the fundamentals. I presume  
12 they're sticking with the microprocessor -- excuse me,  
13 the field programmable gate arrays, that they haven't  
14 reconfigured that into some microprocessors as opposed  
15 to FPGAs.

16 That's why I'm looking for an architecture  
17 and what are they using and how is it customized, so  
18 we can see that we haven't lost anything. Somehow  
19 that's got to come through and if I can get it out of  
20 reading, that's fine, but I'm just making the point we  
21 may need an independent meeting on that.

22 CHAIRMAN BALLINGER: Okay, well, if that  
23 happens, then we'll figure out a way to do it, but  
24 believe me, since we've identified digital I&C as a  
25 significant area and the staff knows this, they're not

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1 going to be waiting until the last minute to get you  
2 engaged.

3 MEMBER BROWN: I hope not. I do have a  
4 few other things to review also, so. All right, I  
5 just wanted to make sure. Let me see if there was  
6 something else here in the files. Too many files  
7 open.

8 There was a SHINE open items table that  
9 you sent out, somebody sent out. It was about six  
10 pages. I presume those are the staff open items.  
11 They're going to be filling in the summary of  
12 resolution.

13 MR. BROWN: Absolutely.

14 MEMBER BROWN: That's correct. Okay. But  
15 they're all blank, the resolutions are all blank right  
16 now, and there's about six pages of them.

17 CHAIRMAN BALLINGER: That's because what  
18 you're seeing is a snapshot.

19 MEMBER BROWN: That's fine. I just wanted  
20 to make sure I knew where we were going and at what  
21 level of information I had. There was no date on the  
22 table, so I couldn't tell whether that was current or  
23 whether that was just their initial stabs at it.  
24 Okay, thank you.

25 MR. BROWN: Jose, did we answer your

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1 question? You asked a question, I'm not sure I was  
2 clear on the answer also about the 15 days and what's  
3 submitted to me. Can you restate your question?

4 MEMBER MARCH-LEUBA: My question is what  
5 do you expect me to provide you 15 days before the  
6 subcommittee meeting?

7 CHAIRMAN BALLINGER: Okay, so 30 days  
8 before the subcommittee, the clock starts and the SE  
9 comes to you and you start reviewing it. Fifteen days  
10 after that, which would be 15 days before the  
11 subcommittee meeting, by that time you will have been  
12 able to identify whether or not there are no issues or  
13 whether or not there are substantive issues that you  
14 need to see discussed so that you can resolve things  
15 in your review, and that has to go to Chris 15 days  
16 before so Chris can be the gatekeeper and transmit  
17 that to the staff.

18 MEMBER MARCH-LEUBA: So it seems to be a  
19 two-step. I will send Chris an email with a number of  
20 bullets that says I have concerns about Sections 13.2,  
21 13.7, 13.8.

22 CHAIRMAN BALLINGER: Yes.

23 MEMBER MARCH-LEUBA: And these are the  
24 specific questions I would like addressed during the  
25 presentation.

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1 CHAIRMAN BALLINGER: Bingo.

2 MEMBER MARCH-LEUBA: After the  
3 presentation, I will have to write you a report that  
4 you can use in the interim letter?

5 CHAIRMAN BALLINGER: Some kind of  
6 documentation I would appreciate. I'll be at all  
7 these meetings anyway. I'll be taking notes. But  
8 hopefully there will be enough detail supplied by you,  
9 such that the staff can present enough detail to  
10 satisfy you on the issue. If there still is an  
11 outstanding issue, then we start iterating and then  
12 the schedule gets a little complicated because we  
13 can't -- we just basically shift another -- shift that  
14 particular chapter review out to another month.

15 MEMBER MARCH-LEUBA: Let me be more  
16 specific. In NuScale, every responsible member wrote  
17 a memo to file for each and every one of the chapters.

18 CHAIRMAN BALLINGER: Yes.

19 MEMBER MARCH-LEUBA: You don't want us to  
20 do that?

21 CHAIRMAN BALLINGER: That's perfectly  
22 acceptable.

23 MEMBER MARCH-LEUBA: No, I mean -- sure.  
24 But what is it that we're supposed to do?

25 CHAIRMAN BALLINGER: Well, my personal

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1 preference would be a memo to file for every chapter  
2 which says either no issues or after review with the  
3 subcommittee, whatever words you want to use, there  
4 are no issues. Or we need to be --

5 MEMBER MARCH-LEUBA: I think it makes  
6 sense to write a memo to file for each and every one  
7 of the chapters.

8 CHAIRMAN BALLINGER: Yes.

9 MEMBER MARCH-LEUBA: That's what we did  
10 for NuScale and it worked very well.

11 CHAIRMAN BALLINGER: That's fine.

12 MEMBER MARCH-LEUBA: It's takes a little  
13 work.

14 CHAIRMAN BALLINGER: People sometimes want  
15 to use an email and stuff like that. A memo to file  
16 which amounts to an email that we put in the file is  
17 probably fine, too.

18 MEMBER MARCH-LEUBA: Okay. The concern I  
19 have -- go ahead.

20 MEMBER REMPE: Well, I think it's a little  
21 different this time. There's this initial  
22 interaction, but then after the subcommittee meeting,  
23 yeah, you can provide a memo to file, but Ron is going  
24 to take whatever you put and put it in his interim  
25 letter and I don't see any reason to have the memo to

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1 file also, some formality with this. Why not just  
2 (audio interference).

3 MR. BROWN: I agree with Member Rempe.

4 CHAIRMAN BALLINGER: Yeah, I mean, and as  
5 long as there's something with words on it, that I can  
6 print or say or convert to a PDF file or read, we'll  
7 be fine.

8 MEMBER REMPE: So I see (audio  
9 interference)

10 CHAIRMAN BALLINGER: Now I'm getting only  
11 every other word. I'm sorry.

12 MEMBER REMPE: You're only hearing every  
13 other word.

14 CHAIRMAN BALLINGER: Yeah, it's pretty  
15 garbled.

16 MEMBER REMPE: Could you hear what I was  
17 (audio interference)

18 MEMBER MARCH-LEUBA: You are very garbled,  
19 Joy. You're breaking up.

20 MEMBER REMPE: All right, okay --

21 MEMBER KIRCHNER: Let me step in and see  
22 if I can address Joy's concern.

23 Joy, let me take a try at it. This is  
24 Walt. I think, if we remember the process, Jose is  
25 correct, we had a memo to file for each chapter. But

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1 remember, we actually sat together as a committee, had  
2 a presentation by the member, and then we voted to  
3 approve it before it was put in the Scott-grams to be  
4 transmitted over to the staff. So that was an  
5 additional level of formality because we intentionally  
6 said in the NuScale review that the bulk of our  
7 attention and effort was going to be on the cross-  
8 cuts, not on the chapters. But we did introduce the  
9 formality of a presentation by the member, his memo on  
10 the chapter, and a vote by the committee to approve  
11 the memo.

12 I don't know that we need that this time  
13 because we're going to go through all the chapters.  
14 We're going to have an interim letter or three interim  
15 letters and then a final letter. So it's a little bit  
16 different than NuScale. So I think Joy's concern and  
17 I think my concern was are we putting too much -- are  
18 we creating something for ourselves that is more than  
19 we need to do this review?

20 Do you see what I'm saying, Ron?

21 CHAIRMAN BALLINGER: Yeah, I mean that --  
22 point well taken. I think we just don't know. I  
23 think the first set of meetings that we have of  
24 whenever it is, the subcommittee date in March, we'll  
25 have a really good idea of whether this works well or

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1 whether we need to make modifications as a result of  
2 those meetings.

3 I mean, again, you know, we can adjust on  
4 the fly and we'll just have to see how it goes. I  
5 mean, if all of a sudden, every one of those chapters  
6 gets reviewed and there are no issues, then we don't  
7 have to do anything. The interim letter is very  
8 simple. But let's say Chapter 6, engineered safety  
9 features becomes a monstrous problem and that results  
10 in extensive presentations and going back and forth.  
11 That's a different scenario which would then require  
12 a more extensive set of documentation. But we don't  
13 know that that's going to happen.

14 MEMBER KIRCHNER: Well, I've been trying  
15 to play that out. Again, addressing Jose's comments,  
16 you've got me, for example, leading on Chapter 6.  
17 Let's pick on Chapter 6. So that's going to come  
18 before we get the actual detailed safety review of  
19 Chapter 13.

20 Jose may find problems in the course of  
21 reviewing the accident analyses and that may force us  
22 to loop back to the ESF and say that -- let me make up  
23 a rhetorical example -- that improvements in the ESF  
24 features are required to address our concern with this  
25 particular class of accident analyses.

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1 Do you see what I'm saying, Ron?

2 CHAIRMAN BALLINGER: Yeah, no, that's  
3 fine.

4 MEMBER KIRCHNER: So I may come out of it  
5 initially saying, oh, the engineered safety features  
6 look adequate for the task.

7 CHAIRMAN BALLINGER: Yeah.

8 MEMBER KIRCHNER: But in the next triage,  
9 Jose will do a detailed accident analysis review and  
10 say, whoops, we have perhaps an issue here and that  
11 suggests that a modification to the engineering safety  
12 features is required.

13 So there may be some iteration coming.  
14 Whether that then results in us creating a cross-cut  
15 focus area, I don't know. It may be, you know, after  
16 two passes at the same topic where we look at the  
17 actual physical systems as described and then we look  
18 at the accident analyses subsequently, that we can in  
19 the interim letter for -- what is it called --  
20 accident analyses, we could say there's an issue in  
21 Chapter 6.

22 CHAIRMAN BALLINGER: Sure, yeah.

23 MEMBER KIRCHNER: And that may not require  
24 us creating a cross-cut. It just shows that as we get  
25 further and further into this and we see the

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1 interaction of the systems and such, that further  
2 review is required.

3 CHAIRMAN BALLINGER: Yes, I mean if that's  
4 the case, then we'll just have to make adjustments.

5 MEMBER REMPE: I think there's also --  
6 hopefully, you can hear this time, the fact that the  
7 interim letter is taking what would be in that memo  
8 and then it's going to be starting with the same text,  
9 members of course will change things, so that's why I  
10 don't see a need to have a memo to file when you're  
11 going to put it somewhere else in the interim letter.

12 CHAIRMAN BALLINGER: Well --

13 MEMBER REMPE: And that's why I'm kind of  
14 pushing back and saying it's just input for an interim  
15 letter. I just don't see a need for having any formal  
16 input.

17 CHAIRMAN BALLINGER: Well, please remember  
18 that, for example, you will be reviewing something.  
19 I don't know where it is and you will have your  
20 thoughts and things, but I'm the one that's going to  
21 have to write the interim letter.

22 And so my memory -- maybe it will be  
23 better after the COVID-19 shots, will not be that  
24 great. And so I'm hopeful that I'll get something  
25 from members that I can use to write the interim

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1 letter.

2 MEMBER REMPE: Right. And I hope -- can  
3 you hear me? I hope. I'm hoping that the texts that  
4 we provide you and it won't just be me as lead. I'll  
5 have input from others. It will be something that  
6 will give a good starting point for your letter. I  
7 just don't see a reason to have two documents the same  
8 starting text, which is (audio interference).

9 CHAIRMAN BALLINGER: Let's just see how it  
10 goes. How is that?

11 MEMBER REMPE: Okay, but that's what I'm  
12 planning to do. Chapter 4 is coming up in this first  
13 round of these things. And Walt has got Chapter 6.  
14 So you've got two of us that seem to have the same  
15 opinion.

16 CHAIRMAN BALLINGER: Okay. That's fine.

17 MEMBER REMPE: And if you don't like that,  
18 tell us now so we'll make changes. But that's where  
19 I'm at.

20 MEMBER PETTI: And Walt's example is what  
21 happened in NuScale, right? Remember we raised an  
22 issue and it caused a change in the design, so it  
23 affected other chapters. I think it would behoove  
24 ourselves to create a cross-cut for anything like that  
25 where we find these iterative loops just so we don't

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1 forget them.

2 CHAIRMAN BALLINGER: These cross-cutting  
3 things, they might evolve instantly, you know, and  
4 that would be actually great if we did that earlier.  
5 But we don't know until we start.

6 MEMBER PETTI: But what I'm hearing is  
7 that the lead will provide you some guts for the  
8 letter.

9 CHAIRMAN BALLINGER: Right.

10 MEMBER PETTI: And it should be a  
11 consensus of others that have read the chapter that  
12 are on your little table.

13 CHAIRMAN BALLINGER: Yes.

14 MEMBER PETTI: When that is the case. If  
15 it's just a single person, that's different. And that  
16 in lieu of a formal letter that those guts are given  
17 to you for the interim letter.

18 CHAIRMAN BALLINGER: Right. And part of  
19 that might be, hey, we think that we need a cross-  
20 cutting area that covers the following.

21 MEMBER PETTI: Right.

22 CHAIRMAN BALLINGER: That could be part of  
23 it. In fact, I hope it would be part of it. I'm  
24 beginning to think that there are an infinite number  
25 of permutations.

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1                   MEMBER MARCH-LEUBA: Unfortunately, there  
2                   is one more. Can you give us some thoughts on the  
3                   technical reports? Because apparently, there are  
4                   going to be a few technical reports to which we are  
5                   not going to be privy to and as we ask specific  
6                   questions. Could you explain that process?

7                   CHAIRMAN BALLINGER: Yeah, well, first  
8                   off, I don't know how many technical reports there are  
9                   or are there going to be. Remember that we had a  
10                  discussion related to, and I hate to bring this up,  
11                  related to the so-called reading room issue. And the  
12                  scheme that we eventually settled on was what's on  
13                  Slide 5, so that by the time a member gets to review  
14                  a chapter, any technical reports that might be  
15                  relevant would be identified.

16                  And the substantive issue thing, in other  
17                  words, if a reviewer discovers a bunch of issues which  
18                  would require a presentation by the staff or the  
19                  applicant, in that presentation would satisfy the  
20                  member or members such that we don't need to address  
21                  the issue of going deeper into the system. In other  
22                  words, we don't need a reading room because the  
23                  member, we don't need to address the issue of the  
24                  reading room which we probably should stay away from  
25                  that discussion right now, because the member has

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1 previously identified the substantive issue.

2 And the staff and the applicant come to  
3 the subcommittee meeting prepared to have a detailed  
4 discussion on the topic. So hopefully that diffuses  
5 any other requirements that we might say we need to  
6 have implemented. So that's the reason why -- that's  
7 why this Slide 5 is constructed the way it is.

8 Yes, the 15-day members supply -- that 15-  
9 day thing is not what we did with NuScale. But it's  
10 designed to short-circuit problems.

11 MEMBER MARCH-LEUBA: Okay, when I imagine  
12 when the SER comes out, there will be more  
13 information. Typically, FSARs are short on  
14 information. They are very blunt and blatant with  
15 conclusions, how everything is great, but they don't  
16 support very well. The SER, because the staff has  
17 gone through all these reviews and has reviewed the  
18 technical report, tends to contain more information.  
19 So hopefully, that will be the case.

20 CHAIRMAN BALLINGER: Yeah, we hope so. I  
21 mean everybody is aware of the potential issue and so  
22 as long as we're all aware of it, we can nip it in the  
23 bud ahead of time.

24 MEMBER MARCH-LEUBA: Typically, the FSARs  
25 just say how great we are; they don't tell you how you

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1 got there and they don't provide much support and  
2 documentation. I can't wait to see the SER.

3 CHAIRMAN BALLINGER: Oh, but then, you  
4 know, a member can say I need to have this discussed  
5 in a subcommittee meeting.

6 MEMBER MARCH-LEUBA: Mm-hmm. Okay.

7 CHAIRMAN BALLINGER: Okay, with fear and  
8 trepidation, should we get the public line open?

9 CHAIRMAN BLEY: Well, just before you do  
10 it --

11 CHAIRMAN BALLINGER: Okay.

12 CHAIRMAN BLEY: We have the meeting coming  
13 up next month. Thirty days before that is next week.  
14 We're still on track to get all of the SEs next week  
15 for that?

16 CHAIRMAN BALLINGER: That's our  
17 understanding.

18 Who's that?

19 MR. LYNCH: There is no meeting next  
20 month.

21 CHAIRMAN BALLINGER: The meeting is in  
22 March.

23 MR. LYNCH: March, yes.

24 CHAIRMAN BALLINGER: So it's February that  
25 we get the stuff.

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1 MEMBER PETTI: So the rainbow chart is out  
2 of date.

3 CHAIRMAN BALLINGER: I'm looking at the  
4 rainbow chart.

5 MEMBER MARCH-LEUBA: It is correct. You  
6 are looking at the wrong column. ACR is due February.  
7 The committee is due in March.

8 CHAIRMAN BALLINGER: Yes, March the 17th  
9 we have -- well, yeah. We have subcommittee meetings.

10 MEMBER PETTI: We're showing a  
11 subcommittee in March.

12 CHAIRMAN BALLINGER: Yes, March 17th and  
13 18th.

14 MEMBER KIRCHNER: The rainbow chart is  
15 12/17 and it shows March 16th and the 17th.

16 CHAIRMAN BALLINGER: That's been changed.  
17 It's the 17th and 18th.

18 MEMBER KIRCHNER: Has that been sent out?

19 MR. BROWN: We'll be sending it out.  
20 There will be some changes in that week and we'll be  
21 sending out a new chart.

22 MEMBER KIRCHNER: Thanks, Chris.

23 MR. BROWN: I think it was due to NuScale  
24 was the main reason for the change.

25 MEMBER BROWN: NuScale?

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1 MR. BROWN: Never mind.

2 (Laughter.)

3 MEMBER BROWN: Well, there's no chapter  
4 shown for that either, even in the present state.

5 MR. SNODDERLY: This is Mike Snodderly.  
6 In March, we're going to be reviewing the control room  
7 staffing topical report and we wanted to have all day  
8 and so we thought the best was March 16th. So March  
9 16th, we'll review the NuScale control room staffing  
10 topical report.

11 MEMBER BROWN: Okay, are we going to find  
12 out what chapters are expected on the 17th and 18th  
13 for SHINE?

14 CHAIRMAN BALLINGER: Yeah, 1, 4, 5, 6 and  
15 15.

16 MEMBER BROWN: It's not showing.

17 MEMBER PETTI: In some of them the actual  
18 chapters are in the rainbow chart, but for March, it's  
19 not. So Chris, please make sure to put the chapter  
20 numbers.

21 MR. BROWN: Absolutely.

22 MEMBER PETTI: That will help.

23 MEMBER REMPE: And the SEs that we'll  
24 receive in February 2021 will be clean. There will  
25 not be any open items or waiting for inputs or

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1 anything like that. All of the responses to the RAIs  
2 will be provided.

3 MEMBER BROWN: That's not what the  
4 schedule shows.

5 CHAIRMAN BALLINGER: No, it says every  
6 chapter we get will be no open items.

7 MEMBER REMPE: And all (audio  
8 interference) for that chapter will have responses  
9 that we'll have access to. Correct?

10 CHAIRMAN BALLINGER: I would assume so if  
11 there's no open items.

12 MR. BROWN: Steve, would you also like to  
13 comment on that?

14 MR. LYNCH: Sorry, had to unmute myself.  
15 Yes. That is what we are working toward, is providing  
16 chapters that are clean, without open items. For some  
17 areas where there are still RAIs we are working  
18 through and especially for some of the later meetings,  
19 we can -- there could be some, but right now that's  
20 what we're working toward is getting clean SEs without  
21 open items.

22 MEMBER REMPE: If that were to happen in  
23 Chapter 4, will you notify and we'll jointly make a  
24 decision on -- with Ron obviously and whoever else is  
25 to be involved on whether to go ahead and have the

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1 meeting with some parts already.

2 CHAIRMAN BALLINGER: I hope you -- man,  
3 we'll put a gun to somebody's head if that happens.

4 MEMBER REMPE: Well, it could be my head.

5 (Laughter.)

6 MEMBER BROWN: You're going to end up with  
7 a lot of headless bodies, Ron.

8 CHAIRMAN BALLINGER: I'm an optimist.

9 MR. LYNCH: I acknowledge the importance  
10 of making sure that we coordinate so that members  
11 understand exactly what they're doing and if there is  
12 information that is pending, what is that information,  
13 what is its significance and what makes sense for the  
14 timing of that. I understand your point.

15 MEMBER SUNSERI: Hey, this is Matt. Let's  
16 avoid making comments like that. It could be  
17 considered threatening to others and that's not  
18 necessary. Thanks.

19 CHAIRMAN BALLINGER: Okay. Thank you.

20 MEMBER BROWN: I guess can I ask a general  
21 question? Walt, you did the NuScale thing, didn't  
22 you? Are you there?

23 MEMBER KIRCHNER: Yes, sir, I'm here. I  
24 had to find my unmute.

25 MEMBER BROWN: Okay, my question is we're

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1 talking about these member memos and I'm -- somewhere  
2 in my brain just erupted and I can't remember a memo.  
3 Does somebody have a compendium of these memos that we  
4 wrote on individual chapters?

5 MEMBER KIRCHNER: Yes. So again, the  
6 difference here is subtle. We went through the Phase  
7 3 of the NuScale review chapter by chapter. The  
8 outcome of that led us to write a memo to the EDO  
9 saying we've identified these five cross cut areas and  
10 we propose for our Phase 5 final review of NuScale to  
11 base it on the cross-cuts. But we also committed to  
12 do an in-depth chapter by chapter review. We captured  
13 that. So they authenticated by writing a rather  
14 formal memo to file that was presented to the  
15 committee and the committee voted to quote-unquote  
16 approve it and then as we went through that process  
17 the batches of chapter memos were pulled together and  
18 via a Scott-gram were sent over to NRR.

19 I don't think we need to quite do that  
20 because as Joy points out, we'll be doing -- and Ron  
21 does -- interim letters as we proceed through the  
22 three groups. And that would be my recommendation.

23 Now how we give Ron the draft input for  
24 the interim letters, I would recommend NRC email and  
25 as many paragraphs as are needed to address the topic.

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1 CHAIRMAN BALLINGER: That's fine with me.

2 MEMBER BROWN: Okay, yeah, I don't have  
3 any problems just I was trying to recover back to the  
4 -- I remember the focus letter and I found the draft  
5 of your final report letter and I've been trying to  
6 find the individual member letters that we did on the  
7 phase --

8 MEMBER KIRCHNER: Well, you didn't do them  
9 -- Mike Snodderly can get you efficiently to them, but  
10 if you remember, our final letter report on NuScale  
11 had appendices. The appendices listed all of our  
12 subcommittee and full committee meetings, all of our  
13 full letter reports. And then the last appendix had  
14 a list of all the Scott-grams, as we call, them which  
15 were I think there were three of them all together and  
16 those were a compendium of each of your contributions  
17 in terms of a chapter memo.

18 MEMBER BROWN: Okay. I'm trying to find  
19 that. I'm not sure I ever found it in the file, the  
20 final letter. That's what I'm looking for.

21 MR. SNODDERLY: So Charlie, if you go to  
22 the final letter that's on the website, dated July  
23 28th, just for my own self I just went and brought  
24 them up and when you go and you put that ADAMS number  
25 in it, it will take you to a folder and it has all of

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1 the -- it has each chapter memo and all of the  
2 forwarded Scott-grams.

3 MEMBER BROWN: Okay, I found the chapter  
4 letters initially, but not the memos. You say 7/28?

5 MR. SNODDERLY: Yes, sir.

6 MEMBER BROWN: '20 or '19?

7 MR. SNODDERLY: 2020. It's the final  
8 NuScale letter appendix, the third appendix. If you  
9 go into any one of those chapter memos, it will take  
10 you to the folder with everything in it. And I can  
11 help you with that after the --

12 MEMBER BROWN: You'll take it out of this.  
13 We'll do it offline.

14 MR. SNODDERLY: Yes, sir.

15 MEMBER BROWN: Send me a write-up and tell  
16 me where to go look and I'll go find it.

17 MR. SNODDERLY: Yes, sir.

18 MEMBER BROWN: Thank you very much, Mike.

19 MR. SNODDERLY: You're welcome.

20 CHAIRMAN BALLINGER: Okay, so once again  
21 are there any further comments or discussion? Thank  
22 you very much.

23 Thomas, can we get the public line open,  
24 please?

25 MR. DASHIELL: Public bridge line is open

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1 for comments.

2 CHAIRMAN BALLINGER: Thank you. Are there  
3 any members of the public that would like to make a  
4 comment? Please state your name and make your  
5 comment.

6 I haven't heard anybody.

7 MS. WALKER: Can you hear me?

8 CHAIRMAN BALLINGER: I can hear you, yes.

9 MS. WALKER: Good afternoon to you all.  
10 I'm trying to figure out what meeting I've ended up  
11 at. I'm just a member of the public. Are you the  
12 Advisory Committee for Reactor Safety?

13 CHAIRMAN BALLINGER: Yes, ma'am.

14 MS. WALKER: So you are the advisory board  
15 to the Commission.

16 CHAIRMAN BALLINGER: Yes, ma'am.

17 MS. WALKER: Regarding safety review of  
18 applications?

19 CHAIRMAN BALLINGER: Yes.

20 MS. WALKER: Because I happened upon the  
21 meeting where -- because I had never heard of you all.  
22 I've been diving into these NRC issues. So I heard a  
23 report to the Commissioners a couple of weeks ago and  
24 I heard the review of these final letter reports.

25 So my question is, does this committee

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1 actually approve a design certificate and allow others  
2 outline issues like the steam generator integrity,  
3 emergency core coolant systems, valve performance,  
4 combustible gas monitoring, recovery strategies to  
5 prevent reactivity insertion accidents associated with  
6 boron dilution events?

7 I'm wondering, because it says this would  
8 be potentially risk-significant items to be reviewed  
9 at the COL stage and updating the PRA. So I'm  
10 wondering what role you see as advising the  
11 Commissioners who are relying on technical expertise  
12 for this technology. I'm wondering if I have my facts  
13 straight, did you actually approve a design  
14 certificate or did I get something wrong here.

15 CHAIRMAN BALLINGER: Ma'am, can you state  
16 your name, please?

17 MS. WALKER: I'm Kayleen Walker.

18 CHAIRMAN BALLINGER: Okay. This is a  
19 meeting on a very different topic and I will defer to  
20 our chairman and I think he can make a comment because  
21 I'm not exactly sure where to go with this.

22 MR. BROWN: Actually, I can take this,  
23 Ron. I'm Christopher Brown, the Designated Federal  
24 Official for this meeting.

25 I would be happy to address your questions

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1 and I can give you my email and also direct you to our  
2 Public Affairs Office. But my email is  
3 christopher.brown@nrc.gov and --

4 MS. WALKER: I emailed you earlier for the  
5 slides for the meeting, but you sent me a link that I  
6 wasn't able to access. And I don't mean to be (audio  
7 interference) but I was alarmed at that. And then  
8 when I see in the press that the design has been  
9 approved when it has significant risk items that are  
10 completely unresolved, I'm wondering because I'm  
11 noticing that some of the names of this meeting are  
12 similar to this -- I mean, you're the committee.  
13 You're the board.

14 I'm just a -- I'll follow up with you, Mr.  
15 Brown and I'd be happy get my facts straight because  
16 I don't mean to be -- I'm concerned about this  
17 technology. I'm concerned about the nuclear waste  
18 that these facilities will create if they're made, and  
19 all sorts of things, the financial aspects and  
20 everything else. And the casualness of this  
21 discussion was like you guys were planning a vacation  
22 or something. But anyway, take care, you all. I'll  
23 be in touch with you, Mr. Brown. Thank you.

24 MR. BROWN: Thank you. I can assure you  
25 that we will address your concern and I look forward

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1 to your email. And I'm sorry about it being a link.  
2 I thought I actually had attached the slides, but I  
3 will follow up with you immediately. Thank you.

4 CHAIRMAN BALLINGER: Thank you. Are there  
5 any other members of the public that would like to  
6 make a comment? Hearing none, can we close the line  
7 then?

8 MR. DASHIELL: The public bridge line is  
9 now closed.

10 CHAIRMAN BALLINGER: Okay. I guess we  
11 don't need a closed session, so are there any final  
12 comments by members? Hearing none then, we are  
13 adjourned. Thank you.

14 (Whereupon, the above-entitled matter went  
15 off the record at 3:19 p.m.)

16

17

18

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# **SHINE Review Proposal**

**Ronald Ballinger**

**As of 1/8/20**

# Goals

- **Update on Status of Staff Review**
- **Review Format Update**
- **Chapter Reviewers Update**
- **Potential Focus Areas?-Update**

# Current Staff Schedule (12/1/20)

SHINE Medical Technologies, LLC  
 Operating License Application  
 Detailed Review Schedule

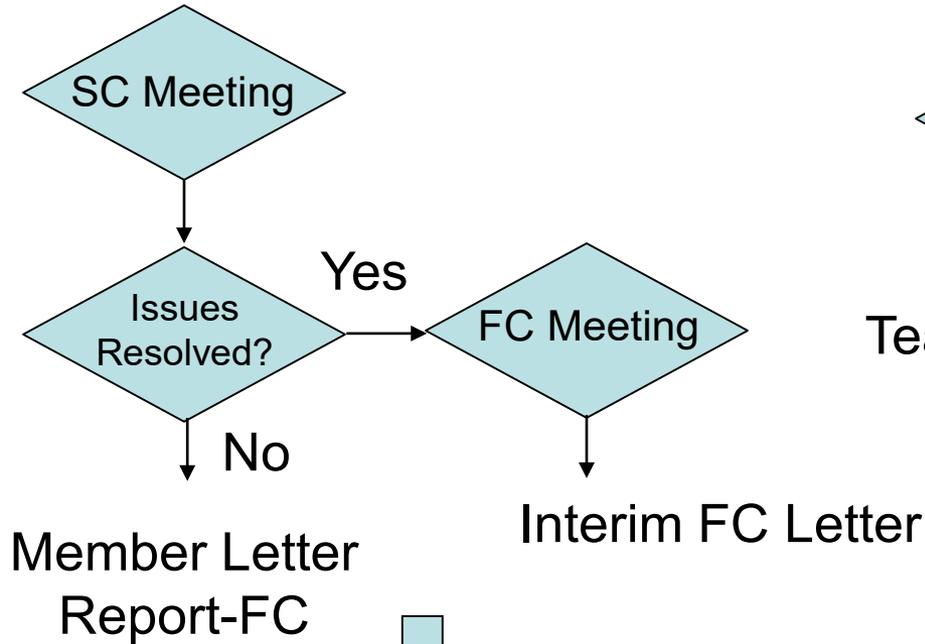
Chapter	Title	Draft SE	Safety Evaluation and Associated Documentation to ACRS	Subcommittee Date	SER Revision Date	Final SER to ACRS	Additional Subcommittee Meetings for Focus Areas (if needed)	Full Committee Meeting/Final Letter
1	The Facility	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
4	Facility Description	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
5	Cooling Systems	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
6	Engineered Safety Features	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
15	Financial Qualifications	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
	<i>Emergency Planning (Chapter 12)</i>	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
	<i>Quality Assurance (Chapter 12)</i>	Jan-21	Feb-21	Mar-21	Apr-21	May-21	July-August-21	Oct-21
2	Site Characteristics	Feb-20	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
3	Design of Structures, Systems, and Components	Feb-20	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
8	Electrical Power Systems	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
9	Auxiliary Systems	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
11	Radiation Protection and Waste Management	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
13	Accident Analysis	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
	<i>Startup Plan (Chapter 12)</i>	Jan-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
	<i>Material Control and Accounting (Chapter 12)</i>	Jan-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
	<i>Human Factors (Chapter 7)</i>	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
	<i>Criticality Safety (Chapters 4, 6, 7, 11, 13, &amp; 14)</i>	Feb-21	Mar-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
	<i>Physical Security (Chapter 12)</i>	Mar-21	Apr-21	May-21	Jun-21	Jul-21	August-September-21	Oct-21
7	Instrumentation and Control Systems	Apr-21	May-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21
12	Conduct of Operations	Apr-21	May-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21
	<i>Cyber Security</i>	Apr-21	May-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21
	<i>Operating Training and Requalification (Chapt 12)</i>	Apr-21	May-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21
	<i>Fire Protection (Chapter 9)</i>	Apr-21	May-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21
14	Technical Specifications	May-21	Jun-21	Jul-21	Aug-21	Aug-21	Sep-21	Oct-21

Note: Appropriate Chapters in Italics/Underlined

# Proposed Review Paths

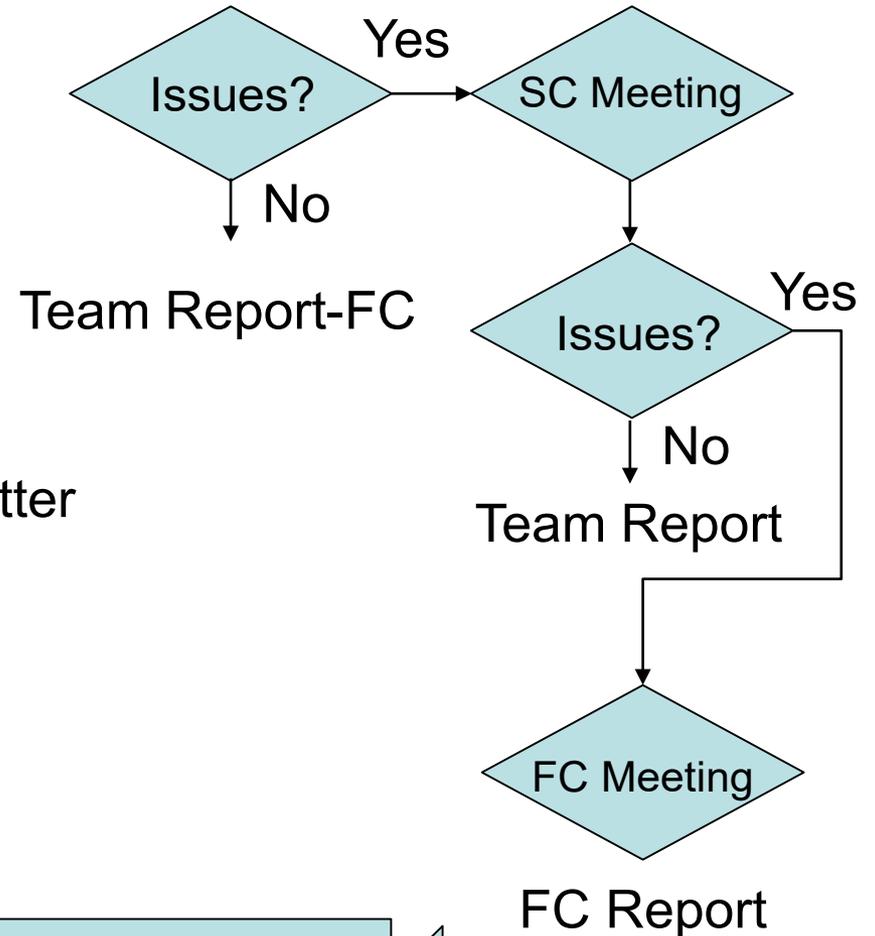
## Member Chapter Review

Member Review



## Focused Area Review

Team Review



Final Letter

# Generic Chapter Review “Timeline”

- **SC-30 Days: Chapter to Member**
- **SC-15 Days: Member Initial Review Results**
  - **No Substantive Issues**
    - **OR**
  - **Substantive Issues Remain**
    - **Issues Relayed to Staff**
- **SC**
  - **Presentations-As Needed**
- **FC Following SC**
  - **Member Evaluation**
    - **OR**
  - **Staff (Applicant) Presentation as Needed**
- **2<sup>nd</sup> SC (Following FC Meeting if Necessary)**
- **2<sup>nd</sup> FC (Following SC Meeting if Necessary)**
  - **Member Evaluation**
    - **OR**
  - **Staff (Applicant) Presentation as Needed**

## Proposed SHINE Review Schedule/Assignments (Dated 1/6/2020)

Chapter	Topic (SERs with No Open items)	Primary Member (additional members)	Expected SE/Info Date	Actual SE Date	SC Date (Approx.)	FC date	Focus Area Date
<b>Overall design</b>		<b>All</b>				<b>10/2021</b>	
Chapter 1	Facility	All	2/21		3/21		
Chapter 2	Site Characteristics <u>Technical Reports:</u> 1.	Bley (Consultant*)	3/21		5/21		
Chapter 3	Structure, Systems, and Components <u>Technical Reports:</u> 1.	Ballinger (Riccardella)	3/21		5/21		
Chapter 4	Irradiation Unit and Radioisotope Production Facility Description <u>Technical Reports:</u> 1.	Rempe (Petti, Consultant*)	2/21		3/21		
Chapter 5	Cooling System <u>Technical Reports:</u> 1.	Sunseri (Dimitrijevic)	2/21		3/21		
Chapter 6	Engineered Safety Features <u>Technical Reports:</u> 1.	Kirchner (Brown, March-Leuba, Consultant*)	2/21		3/21		
Chapter 7	Instrumentation and Controls <u>Technical Reports:</u> 1.	Brown (Bley, ??)	5/21		7/21		
Chapter 8	Electric Power	Dimitrijevic (Bley, Brown)	3/21		5/21		
Chapter 9	Auxiliary Systems <u>Technical Reports:</u> 1.	Sunseri (Dimitrijevic)	3/21		5/21		

## Proposed SHINE Review Schedule/Assignments (Dated 1/07/2021) (Continued)

Chapter 11	Radiation Protection Program & Waste Management	Petti (Consultant*)	3/21		5/21		
Chapter 12	Conduct of Operation	Sunseri (Bley, Consultant*)	5/21		7/21		
Chapter 13	Accident Analysis <u>Technical Reports:</u> 1.	March-Leuba (Rempe, Dimitrijevic, Consultant*)	3/21		5/21		
Chapter 14	Technical Specifications	Riccardella (Kirchner)	6/21		7/21		
<b>Other Related Information</b>	<b>Related Chapter(s)</b>						
Emergency Planning	Chapter 12		2/21		3/21		
Quality Assurance	Chapter 12		2/21		3/21		
Startup Plan	Chapter 12		3/21		5/21		
Material Control	Chapter 12		3/21		5/21		
Human Factors	Chapter 7		3/21		5/21		
Criticality Safety	Chapters 4,6,7,11,13, 14		3/21		5/21		
Physical Security	Chapter 12		4/21		5/21		
Cyber Security			5/21		7/21		
Operator Training	Chapter 12		5/21		7/21		
Fire Protection	Chapter 9		5/21		7/21		

\* Consultants: Mike Corradini, Steve Schultz, Candido Pereira (ORNL)

# Review Chapters/Areas-Updated (01/06/21)

ACRS Review Potential Focus Areas*	SHINE CHAPTER NUMBERS														Potential Focus Area Lead Member
	1	2	3	4	5	6	7	8	9	11	12	13	14		
	<u>The Facility</u>	<u>Site Characteristics</u>	<u>Design of SSCs</u>	<u>Irradiation Unit and Isotope Prod. Fac.</u>	<u>Cooling Systems</u>	<u>Engineered Safety Features</u>	<u>Instrumentation &amp; Controls</u>	<u>Electrical Power</u>	<u>Auxiliary Systems</u>	<u>Radiation Protect. and Waste Management</u>	<u>Conduct of Operations</u>	<u>Accident Analysis</u>	<u>Technical Specifications</u>		
Criticality Safety				✓		✓	✓			✓		✓	✓	March-Leuba	
Source Term		✓		✓		✓				✓		✓		Petti (Bley)	
Security	✓	✓				✓		✓			✓		✓	Sunseri	
HRA/Conduct of Operations/Safety	✓			✓	✓	✓						✓	✓	Kirchner (Bley)	
Chemical Processing				✓			✓		✓	✓		✓	✓	Bley (Petti) (Consultant***)	
SER Date-Completion of Discussion	3/21	5/21	5/21	3/21	3/21	3/21	7/21	5/21	5/21	5/21	7/21	5/21	7/21		
Potential Chapter Lead ACRS Member**	All	Bley (Consultant)	Ballinger (Riccardella)	Rempe (Petti, Consultant)	Sunseri (Dimitrijevic)	Kirchner (Brown, March-Leuba, Consultant)	Brown (Bley, ??)	Dimitrijevic (Brown, Bley)	Sunseri (Dimitrijevic)	Petti (Ballinger)	Sunseri (Bley, Consultant)	March-Leuba (Rempe, Dimitrijevic, Consultant)	Riccardella (Kirchner)		

NOTE: Actual areas of focus, if any, to be decided based on results of member reviews and/or SC meeting results