

**U.S. DEPARTMENT OF VETERANS AFFAIRS  
ADVISORY COMMITTEE ON STRUCTURAL  
SAFETY OF VA FACILITIES**

**MINUTES OF ANNUAL MEETING**

**Friday, May 30, 2014  
8:36 a.m.**

**425 I Street, N.W.  
Room 6W.305  
Washington, D.C. 20001**

**PARTICIPANTS**

**Committee Members:**

Mr. Chris D. Poland, SE, Chair  
Dr. Gregory G. Deierlein, PE  
Mr. B. Todd Gritch, FAIA, CBO, FACHA  
Mr. William E. Koffel, PE  
Dr. Lelio H. Mejia, PE

**VA Staff:**

Mr. Lloyd H. Siegel, FAIA  
Mr. Krishna Banga, PE  
Dr. Asok Ghosh, Ph.D., PE  
Mr. Juan Archilla, PE  
Mr. David Klein, PE  
Mr. Fred Lau, PE  
Mr. Donald L. Myers, AIA

**Guest:**

Ms. Stella Fiotes, Executive Director, CFM

**Court Reporter:**

Victoria McLaughlin, McLaughlin Reporting, LLC

## PROCEEDINGS

MR. POLAND: Good morning. Welcome to the Annual Meeting of the Advisory Committee on Structural Safety of VA Facilities. I'm Chris Poland, the chairman. I'd like to go around and have a series of introductions so we can get the voices on the tape.

DR. MEJIA: I'm Lelio Mejia, a committee member.

DR. DEIERLEIN: I'm Greg Deierlein, a committee member.

MR. GRITCH: Todd Gritch, committee member.

MR. KOFFEL: Bill Koffel, committee member.

MR. KLEIN: David Klein. I work for the Veterans Health Administration, part of the Department of Veterans Affairs. I'm the Program Manager for Fire Protection.

MR. MYERS: I'm Don Myers. I'm with the Office of Construction and Facilities Management. I'm an architect and also Director of Facilities Standards Service.

MR. ARCHILLA: I'm Juan Archilla. I'm a structural engineer with the Office of Construction and Facilities Management, Consulting Support Service.

DR. GHOSH: Asok Ghosh, structural engineer. I'm with the Office of Construction and Facilities Management, Consulting Support Services.

MR. LAU: I am Fred Lau, structural engineer with Office of Construction and Facilities Management, VA.

MR. BANGA: Krishna Banga with CFM VA, structural engineer--sorry.

MR. SIEGEL: Lloyd Siegel. I'm the Associate Executive Director of the Office of Facilities Planning of VA.

MR. POLAND: Okay. I'd like to observe that we have no guests with us at the moment. If anyone comes in, we'll have them introduce themselves.

We have a full agenda today. We spent our day yesterday in a workshop setting reviewing the items on the agenda. What we'll be doing is hearing the reports on the various topics and going over the recommendations that we have in the form of motions.

MR. BANGA: Before you start, I have something for you to sign.

MR. POLAND: I need to sign the minutes.

MR. BANGA: Thank you.

MR. POLAND: So we'd like to get started first with the topic 2(a), to revise H-18 to include the refined definition of ancillary facilities. Kris.

MR. BANGA: Yes, there are two items recommended by the Committee, and we went over those two items yesterday. One was about revising the definition of ancillary facilities, and we have taken care of that in the latest version, which is August 2013. We have revised the verbiage as recommended by the Committee.

There was another item which also pertains to H-18-8. It is Section 3.7, and again the text of Section 3.7 has been modified in the latest published version of H-18-8. It was revised in August 2013.

MR. POLAND: Okay. Any questions or comments on those changes? Okay. Thank you, Kris, for getting that taken care of. We'll move on to the next item on our agenda in 2(b), identify buildings located in tsunamic hazard regions. Juan.

MR. ARCHILLA: Yes. The motion last year was to identify potential exposure to VA facilities, and the screening threshold was facilities within five miles of shorelines and less than 20 feet above sea level. So we identified facilities basically using Google Earth tool, and we identified 22 sites within the five mile distance. However, there was only one less than 20 feet above sea level.

The work is still ongoing because basically we want to make sure that we capture all the sites, the future projects that are undergoing.

MR. POLAND: Okay. Let's see, Todd, we had, based on our conversation yesterday, we had a recommendation for them.

MR. GRITCH: Yes, sir, Mr. Chair. The Committee recognizes--I'd like to make a motion first--

MR. POLAND: Okay.

MR. GRITCH: --relative to the tsunami report, and the Committee recognizes and appreciates the significant work in the initial assessment prepared by Juan and Asok and recommends the continuation of the study with the inclusion of the predicted maximum height of tsunami for those facilities deemed at risk into the report.

We also recommend that the report be expanded to include an analysis of VA facilities subject to risk from hurricane storm surge and future predicted sea level rise.

MR. POLAND: Okay.

MR. KOFFEL: Second.

[Motion made and seconded.]

MR. POLAND: Seconded the motion. Thank you. Discussion?

DR. MEJIA: I have a question, Chris. One, I guess yesterday we talked about the hazard being prevalent on the west coast of the U.S. primarily and then also in the area of Puerto Rico and discussed or asked about the applicability to other areas, and we understood that the research indicated that the hazard was low along the eastern coast and the Gulf coast as well.

MR. ARCHILLA: Correct.

DR. MEJIA: Could that research also give any indication as to the applicability of the criteria that the Committee set out for screening, you know, the five mile distance as well as the 20-foot height, and whether that seemed congruent, I guess, with the reference that you looked at?

MR. ARCHILLA: Not specifically, you know, five miles or 20 feet, but it was more based on historical data and the number of injuries and also run-up. So I guess they didn't necessarily, at least not under my recollection, like specific distance to consider. It was more based on historical data for casualties.

DR. MEJIA: Okay.

MR. ARCHILLA: And such. There was, you know, data on run-ups and such as well.

DR. MEJIA: Right.

MR. ARCHILLA: And specifically it was again, specific to tsunamis, we'll expand the scope.

DR. MEJIA: Well, in our motion, we had, I guess, the direction to look at the wave height or at the height of or the impact for the facilities that are impacted; correct?

MR. GRITCH: Yes, we did.

DR. MEJIA: So I think it would be good to see how that compares to that 20-foot limit that we set for wave run-up, I guess.

MR. ARCHILLA: Okay. So we may need to narrow the--

DR. MEJIA: Depending on how that compares and slope looks, yes.

MR. SIEGEL: I have--please.

DR. DEIERLEIN: I was just going to add that there are some other documents that are coming out recently on tsunami hazard and evaluation of buildings. There will be a new chapter in the forthcoming ASCE-7. There has also been some tsunami risk studies done on the west coast. I'm not sure if there have been any in the Caribbean area.

And primarily those two documents, and also the ATC, the Applied Technology Council, have a document on vertical evacuation structures for tsunamis. So I'd

recommend that you try to take a look at those to see if--you've referenced the NOAA report already, which is a great start--to see if you can see some of those additional sources and feel free to contact me to get a list of some of those.

MR. ARCHILLA: Okay. Thank you.

MR. SIEGEL: I have a comment about predictive sea level rise. There are several different predictions on sea level risk conflicting with each other. So could I suggest, rather than "predicted," "potential"? If you say "predicted," you've got to specify which one of the predictions.

MR. GRITCH: Yeah. I thought about that after our discussion and we were doing it, and I realized that you had mentioned there were several, and I didn't know which ones were really--I didn't have one that I could identify in the motion. So I'd be happy to accept the amendment if everybody is, if that clarifies the issue that allows you to choose.

I thought "predicted" but also give you that--I tried to give you that flexibility in the motion, but if you would like a different word there, I'd be happy to--and you would like "potential"?

MR. SIEGEL: Yeah.

MR. GRITCH: Okay. I accept the amendment.

MR. POLAND: Is that okay with the seconder?

MR. KOFFEL: The seconder agrees.

MR. POLAND: Okay. Good.

[Motion amended.]

MR. POLAND: Other comments? One of the things we observed yesterday was that there are two projects in the San Francisco Bay Area. One is at Alameda, which is the site that you've identified as on the list, and the other is the potential site at Mission Bay in San Francisco for a new research facility, and it seems that we ought to take the information we learned from this, and make sure that those projects are informed.

I'm not quite sure how that's done, but I think it's something that we need to pass along right away since those projects are moving forward.

Okay. I have a motion and a second. Any other discussion? All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Okay. Motion carried. Thank you very much.

The next item on our agenda is the seismic risk evaluation of buildings in high risk category and located in moderate low seismicity. This is item 2(c).

I'm going to need to recuse myself because of our firm's participation in this project. So I'm going to leave the room and turn the meeting over to Todd.

DR. MEJIA: Mr. Chair, I will also have to recuse myself because of a potential conflict with my firm.

MR. BANGA: You don't have to leave the room; do you?

MR. POLAND: They said yesterday--

MR. BANGA: We can--no?

DR. MEJIA: I think we do need to. Yes.

[Mr. Poland and Mr. Mejia leave the room.]

MR. BANGA: Go ahead.

MR. GRITCH: Well, after a tremendous amount of discussion on this issue yesterday, do we have a motion?

DR. DEIERLEIN: Yeah, we do. I don't know if--

MR. BANGA: Do you want to listen to, one more time--

DR. DEIERLEIN: Yes, just a recap.

MR. BANGA: Because he may have something new also added.

MR. LAU: In response to--

MR. GRITCH: Before the motion, we're going to discuss it or just to recap a point?

MR. BANGA: Yeah, yeah.

DR. DEIERLEIN: Well, maybe give a summary of what the--

MR. BANGA: The report, the summary--

MR. GRITCH: Okay.

MR. BANGA: There is a minor addition he may have.

MR. LAU: Very minor.

MR. GRITCH: Okay. Okay.

MR. LAU: In response to the Committee's resolution recommending VA to prioritize mitigation needs for buildings in the moderate low seismic risk regions, VA screens such buildings and identified 81 critical essential buildings with large areas.

The breakdown is as follows: over 200,000 square feet, 13; between 150,000 to 200,000, we have two; between 100,000 and 150,000, we have 16; and between 50,000 and 100,000, we have 50. So it's a total of 81 buildings.

Since the current construction funding is limited and more difficult to obtain, we are working with management to allocate funding for detailed studies as outlined in the resolution.

MR. GRITCH: Thank you.

MR. LAU: And I would also like to give an update on the seismic program to the Committee. Currently, 37 of the 88 EHR buildings were corrected or demolished. For the remaining 51 EHR buildings, some level of design or construction funding have been approved. There are about 80 high risk buildings and medical centers are working on them.

MR. GRITCH: Do we have a motion?

DR. DEIERLEIN: Well, we do have a motion. Just as a quick preface to that, just to refresh our memories, several years ago, the VA undertook kind of a detailed we'll call it HAZUS-based study to evaluate a number of buildings, and we've had discussions back and forth whether that level of rigor is appropriate, and we understand that there's kind of cost implications to that, and that there are alternative kind of rankings that the VA has done in-house, and what Fred just described is kind of a first cut at that.

MR. BANGA: Before you make the motion on the HAZUS, if the motion is going again more for the HAZUS, we did not gain enough information, useful information, because of that study.

DR. DEIERLEIN: Yes.

MR. BANGA: And so we presented that two years ago, and the Committee agreed not to pursue HAZUS, and that's where we are right now as far as HAZUS is concerned.

DR. DEIERLEIN: Yes.

MR. SIEGEL: For the secretary, HAZUS is H-A-Z-U-S with a capital.

DR. DEIERLEIN: Yeah. Let me--our motion I think recognizes that. I think, well, as you'll see in the motion, I think our Committee still feels that the technology in this HAZUS-type study is the most rigorous one out there to take into account kind of full performance of buildings in looking at the cost-benefit relative to

risks.

But we also appreciate that there could be other screening techniques done much more quickly and more economically that are worthwhile, and I think our motion recognizes both of those. So let me read it and cut through the suspense.

So this is the motion. The Advisory Committee continues to recommend that the VA undertake a rigorous HAZUS-based risk assessment to prioritize seismic evaluation and retrofit programs to manage the overall seismic risk to VA facilities.

As an interim screening step, the Advisory Committee recommends that the VA update and apply the seismic risk ranking technique developed by Degenkolb Associates in 2006 to all buildings that have previously been identified in the high risk--there's 80 buildings--and moderate-to-low risk--81 buildings--seismic risk categories.

This is based on the Advisory Committee's understanding that the 88 buildings previously identified in the Exceptionally High Risk have either been demolished or are in the process of being evaluated and retrofit.

This recommendation is in contrast to the previous 2003 advisory board recommendation to exclude buildings in the moderate-to-low risk from consideration, and the goal of this reassessment is to identify buildings which may pose a high risk due to a combination of hazard, building vulnerability, and building function and occupancy even though these buildings may be located in a moderate-to-low seismic hazard region.

Being as the previous seismic ranking procedure was completed about ten years ago, it is recommended to review and update the ranking technique based on the latest information and research on hazard, building vulnerability and risk assessment before performing this reassessment.

MR. KOFFEL: Second.

[Motion made and seconded.]

MR. BANGA: Before you second, do we have a chance for discussion?

MR. SIEGEL: No, no, you can't discuss until it's seconded.

MR. BANGA: Okay.

MR. GRITCH: No.

DR. DEIERLEIN: Okay. Yeah.

MR. BANGA: Sorry.

MR. SIEGEL: Now is discussion.

MR. GRITCH: Is there any discussion?

MR. BANGA: Yes. You mentioned something about developing a new technique of putting the hierarchy of the building so the Committee will have any recommendation because we presented the methodology which we have used for ranking them.

And is there any recommendation, maybe not right now, but will that be coming, which could make our thinking different than what we have utilized, you know, like we have seismicity score, we have the vulnerability score, we have the size of the building score, and we have the number of beds as scoring methodology?

DR. DEIERLEIN: Yeah, I think--and our understanding is that what Fred had just presented, that based on our previous discussion last year, you've gone back to the moderate-to-low risk.

MR. LAU: Right.

DR. DEIERLEIN: And you've identified which are the big buildings.

MR. LAU: Right.

DR. DEIERLEIN: Right. But you've not yet gone through this more detailed scoring method that, Kris, you just described that talked about building vulnerability and things like that.

So basically what we're recommending is to go back to this more detailed scoring method that you've done before for buildings in the moderate-to-low risk to try to, apart from identifying which are the big buildings, to recognize their vulnerability, but to, in doing that, to look at this previous document I'm holding up, the 2006, to see if there's ways to update it.

An obvious one is the new hazard maps or hazard information, which has been updated, you know, in ASCE-7 since this was undertaken in 2006.

In terms of other recommendations to the scoring method, perhaps that's something that the Committee can--a few of us on the Committee that are knowledgeable can have some discussions with you about that.

MR. BANGA: That, in layman's terminology, this opens a can of worms. If you say that we have to include the moderate low, that means it's not only the HR buildings will be affected but EHR buildings might be affected because we deleted or we omitted the buildings which are located in moderate low seismicity for any further action which we need to take because there is so much funds the VA has, and we are concentrating on right now on Exceptionally High Risk buildings and High Risk buildings, which are almost the same as EHR but just a lower rank, that they are in not as high risk seismicity, they are in moderate high seismicity, and they are less than 10,000 square feet. That's the second tier of the High Risk buildings.

MR. SIEGEL: Less than 10,000 square feet?

MR. BANGA: High Risk, 10,000 square.

DR. DEIERLEIN: But part of what triggered this discussion, as I remember it, is this, from the HAZUS study that was conducted, that identified this building in, the hospital in Boston, which I understood was previously not in the High Risk category.

MR. BANGA: But it was, but it was deleted because the Committee made the resolution that VA does not have to do anything for the buildings located in moderate low seismicity. If we went with the scoring methodology, what we have so far used, and included Boston, Boston would rank fairly high.

DR. DEIERLEIN: Okay. So the spirit of this--

MR. BANGA: So it doesn't matter whether we use HAZUS or our technology which we developed of ranking them. It will rank very high.

DR. DEIERLEIN: Right. So what this motion is trying to say is to take the scoring methodology and to go back to all buildings, even in the moderate to low hazard areas, and to apply the screening method, and from that then identify which buildings should be bumped up in terms of their priority.

MR. BANGA: Wouldn't that include studying them also because the scoring methodology, the score of seismic vulnerability, category I, II, III, and IV?

DR. DEIERLEIN: Right.

MR. BANGA: So that means we will have to--

MR. LAU: Right.

MR. BANGA: --do the fresh studies of those 80 buildings or whatever, the 81 buildings, and there may be even more with the new motion, not just the size, but there may be some other which may be included. That means that we have to study them.

MR. SIEGEL: Well, why shouldn't we?

MR. LAU: That's my understanding, that the Committee recommends that we--

MR. SIEGEL: Study them.

MR. LAU: --study them, as we did for the buildings that turned out to be EHR and HR, and we're doing it for those in moderate low seismicity regions.

MR. BANGA: I'm talking about the practical work, study them, 80 buildings, studying them to prepare statement of work, to get the money--

MR. LAU: Right, right, right.

MR. BANGA: --when everything is just--

MR. SIEGEL: I think we can always, I would imagine that we could always get the money for studies in this field. Whether they have to then proceed onto major construction arena is something that we discussed after we see the studies say.

The only suggestion I might make in the wording that you read is to change the word "other," change the word "new" to "other" because that would mean we can use the other methodology that Kris has been talking about which seems to work well, as well as HAZUS or something else. But I don't know that the word "new." Maybe "additional" or maybe "other."

DR. DEIERLEIN: Okay. I'm looking for the word "new."

MR. SIEGEL: I think it is up at the beginning somewhere.

DR. DEIERLEIN: I think if I could just paraphrase what our motion, what the intent is, I think the Committee still feels that if funding were available--we recognize it would be a large effort, large funding, and there's other priorities--that a rigorous HAZUS-based methodology we think would be appropriate, but short of that, we think it would be very important to undertake, to revisit this scoring type method that was done and the methods kind of laid out, and we presume this is something that VA could do largely in-house.

I mean there would need to be information collected on facilities, which could come through the supplement to the regular inspections or assessments that are done at facilities, and that in-house, they look at these 80 or 81 buildings that are currently in the moderate to low area to see which of those should be bumped up.

Our intent is not to create a make-work effort, but that you would use, do this judiciously to first look at the big buildings, look at the hazard they're in, but that if there's a building that looks suspect, to make the effort to collect what information is needed on the building condition to make a more informed decision.

MR. LAU: When I look at the list of 81 buildings in the moderate low seismicity area, and I'm thinking, you know, if our goal is to rank them or prioritize--

DR. DEIERLEIN: Right.

MR. LAU: --the mitigation needs, we really cannot do that unless, until we finish studying all 81 of them. Otherwise, you never know if you do 20 this year and 20 next year, you never know, you know, which one really has the highest needs.

DR. DEIERLEIN: Yeah, yeah. Well, I guess we appreciate that, but still I guess how it's done, we would leave that a little bit to the VA to decide. I would think that, you know, if you have 80 buildings to look at, and you could do 20 a year, I wouldn't just do them alphabetically or I wouldn't--in other words, I mean screen them to look first, and you've already identified the big buildings, or look at other

features and say, okay, let's pick out of those 80, these would be the first 20 we'll look at, and these will be the next, so that you could chip away at the problem.

But our main message is not to leave--this is reversing an Advisory Committee recommendation from 2003, which at that point when you were just beginning to address the high, extremely high risk said don't worry about the moderate to low.

MR. LAU: Right.

DR. DEIERLEIN: Since that time, this HAZUS study pointed out at least the Boston building, the Boston Hospital, and so we're basically reversing our 2003 recommendation, which is to relook at this group in the moderate to low to see if any of those are vulnerable because of the combination of the size, the condition of the building, coupled with the hazard.

MR. GRITCH: Any further discussion?

MR. SIEGEL: Would you consider changing that word "new" to "additional" or "other," something at the front, at the top?

MR. GRITCH: I think the intent, if I understood it, it was to allow you that flexibility.

DR. DEIERLEIN: Yeah, yeah.

MR. GRITCH: Definitely the intent is there and go on record as saying that.

MR. SIEGEL: Some people might feel restriction to something that has never been done before or a methodology that has never been done before.

DR. DEIERLEIN: Yeah, I don't see the word "new" here. What we were saying was to take the ranking method, the scoring method, that was in the handout we saw from, it was dated Degenkolb Engineers provided 2006, to use that scoring methodology, but before you apply it to all the buildings, just to look at that methodology and kind of reaffirm that you wouldn't want to make any changes before you go through the effort to score buildings.

MR. GRITCH: Would you read the motion again, please?

MR. BANGA: Just before you read that motion, just to fill you in, we are giving the example of Boston over and over again. The HAZUS study gave us the surprise of only one building. Everything else came in the same. Even the HAZUS methodology of ranking was different--

DR. DEIERLEIN: Right.

MR. BANGA: --the ranking came very much similar to what we had already done for the buildings which were studied. Both the lists are not necessarily the same. Boston is the only one which we gave a surprise. So if we are basing it--all our recommendations--upon just one building, it's something to be thought of.

MR. SIEGEL: The other thing, having the same or similar ranking from the HAZUS study to what we had done in a different methodology only validates what we have done. There's nothing wrong with validating your information.

DR. DEIERLEIN: So the previous study that you say identified the Boston building, was that study done for all the moderate--the buildings that are currently in the moderate to low--

MR. BANGA: No.

DR. DEIERLEIN: Okay.

MR. BANGA: No.

DR. DEIERLEIN: But how did the Boston building end up being studied in your previous ranking?

MR. BANGA: It just got picked up. Boston is a big major hospital we picked up. The selection of the building study is a process of we started with taking the buildings which are located in high and very high seismicity.

DR. DEIERLEIN: Yeah.

MR. BANGA: That was the first attempt. And then how important the building is. It just so happens that Boston--also, Boston seismicity in the last five or six years, seven years, it lowered the seismic, seismicity of Boston from what it was.

So Boston got picked up at that time, and--

MR. SIEGEL: Well, there may be other sleepers, too.

MR. KOFFEL: I think that's the point.

DR. GHOSH: There is a possibility that another member of the moderate low and low seismicity area building may be equivalently vulnerable like Boston.

MR. BANGA: We're not questioning that.

DR. GHOSH: That's what he's trying to find out.

MR. BANGA: No, no, no. We're not--yes, yeah, Boston building, even if we use the scoring methodology of what we have used so far and included the moderate low buildings, it will score very high.

DR. DEIERLEIN: Right.

MR. BANGA: We know that.

DR. DEIERLEIN: But we're--

MR. SIEGEL: There may be others, Kris.

MR. BANGA: Yeah, there will--there may be, but the question is how far do we go?

MR. SIEGEL: Well, I think it behooves us to go all the way. If we're interested in true seismicity dangers, I don't think it behooves us to skip when we've discovered outliers exist there.

MR. GRITCH: Well, I would like you to read the motion again, please.

DR. DEIERLEIN: Sure.

MR. GRITCH: And so it's been awhile since we heard it, and we've had some discussion on it, and putting it in context as to what we now understand, please read the motion again.

DR. DEIERLEIN: Okay. So the Advisory Committee continues to recommend that the VA undertake a rigorous HAZUS-based seismic risk assessment to prioritize seismic evaluation and retrofit programs so as to manage the overall seismic risk to VA facilities.

As an interim screening step, the Advisory Committee recommends that the VA update and apply the seismic risk ranking technique developed by Degenkolb in 2006 to all buildings that have previously been identified to be in the high risk and moderate seismic risk categories.

This is based on the Advisory Committee's understanding that the 88 buildings previously identified in the Exceptionally High Risk category have either been demolished or in the process of being evaluated and retrofit.

This recommendation is in contrast to the previous 2003 advisory board recommendation to exclude from consideration all buildings in the moderate low risk from consideration.

The goal of this reassessment is to identify buildings which may pose a high risk due to a combination of hazard, building vulnerability, and building function and occupancy even though these buildings may be located in a moderate to low seismic hazard region.

Being as the previous seismic ranking was completed about ten years ago, it is recommended to review and update this ranking technique based on latest information and research on earthquake hazard, building vulnerability, and risk assessment before performing this reassessment.

MR. SIEGEL: I was wrong. There was no "new" in there.

DR. DEIERLEIN: Okay.

MR. GRITCH: So the initial action, from my understanding, the initial action for staff would be the interim step in there; correct?

DR. DEIERLEIN: Yeah, and basically, this interim step would be, it's not a trivial undertaking, and we feel it would go a long way towards identifying what could potentially be some vulnerable buildings that are currently in the moderate to low. So short of doing the--

MR. SIEGEL: Toward the beginning when you used the word HAZUS, is it HAZUS or hazard?

DR. DEIERLEIN: Well, the first sentence was HAZUS-based.

MR. SIEGEL: Hazard?

DR. DEIERLEIN: HAZUS.

MR. SIEGEL: HAZUS-based.

DR. DEIERLEIN: Yes. But our recommendation is that the study we're asking, really asking you to undertake now is not the HAZUS-based one, but it's based on this other scoring technique, going back and applying that, and I would say to apply it judiciously to take, you know, to do some initial screening of that, but if there's buildings out of that 80 that you can clearly say are going to score low, to not necessarily go out and reinspect those buildings if you know it's not--you feel confident you're not going to turn up anything that would dramatically change the score.

MR. GRITCH: The motion recognizes that funding may not be necessarily in place or available to do the extensive HAZUS-based analysis, but this is an initial interim identification of a scoring system you're already basically using to this, extend it to the moderate low category. It's not the in-depth investigations, I believe, Kris, that you were looking, believing that it was charging you to do.

Is that correct?

DR. DEIERLEIN: Well, I think Kris--well, Kris could speak for Kris.

MR. GRITCH: No, but I mean--

DR. DEIERLEIN: I think he's concerned that even the Degenkolb scoring method does require looking at building irregularities and things like that.

MR. BANGA: One of the big score is the seismic vulnerability of the building.

DR. DEIERLEIN: Right.

MR. BANGA: And that can only be done until and unless you have the study that--not necessarily detailed study but at least some study, and that is not just scanning through what the building is made of. You have to go into the whole structural system and--

DR. DEIERLEIN: Right. And that was done for all the buildings that are currently in the high risk categories?

MR. BANGA: That is correct.

DR. DEIERLEIN: Yeah.

MR. BANGA: Yeah.

DR. DEIERLEIN: Well, this is recommending that those steps be taken to the buildings in the moderate to low, but the one not caveat I would say to that or guidance would be to not necessarily go out and inspect all of those 80 buildings, but to do some prescreening. You've already done some based on size, and there may be a few other attributes. Just to identify which of those 80 you really feel could be suspect, you know, or worth the reassessment.

DR. GHOSH: To do that, you need to revise the motion. Whatever he just said.

DR. DEIERLEIN: Yeah.

DR. GHOSH: To make our work a little bit easier.

MR. GRITCH: Mr. Koffel.

MR. KOFFEL: Yeah, I don't know if we need to revise the motion, but I think the implementation strategy, as was indicated, allows you to prescreen, and, in fact, if you look at the scoring system, there is a basis to assign a value if the deficiency category has not yet been studied. There's a point value to assign for that.

So the initial screening if you don't have that value, you can use the ten points, and then base the screening on size, number of beds and seismicity, and then say, okay, these are the ones we need to look at. You could also look at the age of the building, it's a relatively new structure, we might assume it's a Category IV from a deficiency category risk, and, you know, I think you could--I think some buildings would float to the top. These are the ones that need to be looked at further.

DR. GHOSH: Yeah, yeah.

MR. KOFFEL: And prioritize them based upon that initial screening. I think that's all the motion is asking for.

DR. GHOSH: We can do another screening to gain the number of buildings down.

MR. BANGA: So does the motion say what you just said about the work involved with that initial screening? Does that motion say that or does that say the HAZUS study or?

MR. KOFFEL: As a secondary, I think the motion gives you that latitude. I think the motion is saying we should do this. To the extent, as the chair, our current chair, acting chair said, you know, to the extent that funds are available, you do what you can do.

And if that's an initial screening and you identify certain buildings to be looked at further, then you've implemented the motion.

DR. GHOSH: Yes.

MR. GRITCH: Mr. Banga, are you okay with that?

MR. BANGA: Yeah.

MR. GRITCH: Okay.

MR. BANGA: Can we hear that motion one more time, please? Sorry.

DR. GHOSH: With that kind of words.

MR. GRITCH: Maybe just the interim step part.

MR. BANGA: Yeah, right. Right, exactly.

DR. DEIERLEIN: So just the--yeah--so as an interim step, the Advisory Committee recommends that the VA update and apply the seismic risk ranking technique to all buildings that have previously been identified in the high risk and moderate to low risk seismic categories.

So that's the real actionable item.

MR. GRITCH: Any further discussion? Then I'd like to call for a vote on the motion. All those in favor say aye.

[Chorus of ayes.]

MR. GRITCH: All those opposed say nay.

[No response.]

MR. GRITCH: The motion carries.

I would like to bring the chair back to continue the meeting, please.

[Pause while Mr. Poland and Mr. Mejia come back into the room.]

MR. GRITCH: The interim chair would like to note that we missed the permanent chair greatly in the last discussion.

[Laughter.]

MR. POLAND: Thank you very much.

Okay. We are ready to move on to item 2(d), fire protection of steel columns in interstitial space of VA Building Systems. David.

MR. KLEIN: Thank you, Mr. Chair.

Motion nine--

MR. SIEGEL: For the record, since two of the members recused themselves and were out of the room, would you want to repeat the motion that was just passed or would you like to state what the resolution was that was passed?

MR. GRITCH: Paraphrasing it, the resolution that was passed, or just reread the motion?

MR. SIEGEL: It's up to you.

MR. GRITCH: Well, before I turn the chair back to you, Mr. Chair, would you please reread the motion? And we'll get a quick paraphrasing of the discussion that followed and the final vote.

MR. POLAND: Okay. Good.

DR. DEIERLEIN: So a full reread?

MR. GRITCH: Yes, please. I'm going to make you do it till you get it right.

[Laughter.]

DR. DEIERLEIN: All right. So the Advisory Committee continues to recommend that the VA undertake a rigorous HAZUS-based seismic risk assessment to prioritize seismic evaluation and retrofit programs to manage the overall seismic risk to VA facilities.

As an interim screening step, the Advisory Committee recommends that the VA update and apply the seismic ranking technique developed by Degenkolb in 2006 to all buildings that have previously been identified to be in the high risk and moderate risk categories.

This recommendation is based on the Advisory Committee's understanding that the 88 buildings previously identified in the Exceptionally High Risk categories have either been demolished or are in the process of being evaluated and retrofit.

This recommendation is in contrast to a previous 2003 advisory board recommendation to exclude buildings from consideration that were in the moderate to low hazard regions. The goal of this reassessment is to identify buildings which may pose a high risk, due to a combination of hazard, building vulnerability, and building function and occupancy, even though they may be located in moderate to low seismic hazard regions.

Being as the previous seismic ranking procedure was completed about ten years go, it is recommended to review and update this ranking procedure based on the latest information and research on hazard, building vulnerability and risk assessment before performing the reassessment.

MR. GRITCH: There was some discussion on the issue. There was concern expressed by staff that that might be a very aggressive program that funding was not currently available for, and during the course of the discussion I think it was explained that the more rigorous parts of that understood that funding--it was predicated upon funding and availability of funds to do that, but the interim part, performing some initial assessment to look for those buildings in the moderate to low that might rise to the top, as did one previously, should be performed, and with that understanding, the motion was passed unanimously.

DR. MEJIA: Thank you.

MR. POLAND: Thank you.

MR. GRITCH: Okay. Now, I've turned the chair back to you, sir.

MR. POLAND: Okay. Just a question. Do you think it would be good when Ms. Fiotes visits us today that we go over this motion with her?

MR. SIEGEL: It's up to you.

MR. POLAND: You'd have to summarize that for her.

DR. MEJIA: Not read it again.

DR. DEIERLEIN: Yeah, yeah.

MR. POLAND: She's the Director of Office of Construction and Facility Management.

DR. DEIERLEIN: Okay.

MR. POLAND: She's the one that needs to carry this message forward, and we've done this in the past, carry the message forward about the existing buildings and the need to continue the program, and the Office has always been very supportive of it, but it's just--I think it's a message that needs to be reinforced.

DR. DEIERLEIN: Okay.

MR. POLAND: And I believe we'll hear from her comments, but I believe you're going to hear her talking about how important it is that we do this.

DR. DEIERLEIN: Okay. Paraphrase, not read.

[Laughter.]

DR. MEJIA: Yes.

MR. POLAND: Okay. We will return to item 2(d). David.

MR. KLEIN: Thank you, Mr. Chair. Motion nine from last year's meeting expressed the Advisory Committee's opinion that fireproofing on columns in VA Hospital Building System designs should be continuous through the functional and interstitial space.

VA thanks the Advisory Committee for their opinion. In response to this motion, the VA Fire Protection Design Manual will be revised to clarify that in VA Hospital Building System designs, fire protection on columns will be continuous through the functional space and the interstitial space.

Now during the discussion yesterday, the question arose as to whether there might be existing facilities that utilize the VA Hospital Building System design for which the fire protection on columns is not continuous through the functional space and interstitial space.

In response to this question, a motion has been developed, which I believe Mr. Koffel is prepared to discuss.

MR. KOFFEL: Yes. The motion would be based upon the pending clarification to be provided in the VA Fire Protection Design Manual (current motion nine, April 26, 2013 meeting of this Committee), regarding the protection of columns in interstitial spaces in facilities using the VA Hospital Building System design and the potential impact that may have on existing buildings, the Advisory Committee recommends that the VA define the extent of the problem in existing buildings and then, as necessary, develop a strategy to address the problem.

MR. POLAND: Okay. Is there a second?

MR. GRITCH: Second.

[Motion made and seconded.]

MR. KOFFEL: Mr. Chair, if I might add to that, during our discussion, one, we don't really know to what extent this is a problem if it even is a problem. We felt that or we feel that the action taken during the April 2013 meeting was a clarification. It was not a change in requirements.

So we would like to determine if there are any buildings that have been built that are not consistent with that clarification, and then we would be looking for the VA to develop alternative approaches or solutions, which may include fire protection of the column, but there may be some other solutions. Those can be developed once we know the extent of the problem.

MR. POLAND: Okay. Other thoughts?

DR. MEJIA: Question. What would be involved in defining the extent of the problem? How would you go about doing that?

MR. KOFFEL: We believe that existing VA personnel can go to the interstitial space. It's a pretty obvious observation as to whether those columns have any fire protection or not. It would be more challenging if we were to say is the

thickness correct? I don't think we're looking for that degree of assessment.

If we see a spray applied fire protection or we see a column that's encased, I think it's reasonable for them to assume that the fire protection was provided as intended per the original building design. But if you see a steel column with no protection, then we need to address it.

MR. GRITCH: Now, one point we need to in the direction that staff would give to the VA facilities, people who are going to look at that, is we're talking about the main structural columns of the facility that are the primary structural frame, not the secondary members or those that are holding the walk deck up. So they may go up there and see steel that's not fireproofed, but they need to know the difference between the primary structural frame and those elements.

DR. MEJIA: Is that something that would be apparent in as-built drawings or where you would have to actually physically inspect every--

MR. BANGA: I was going to provide my input on that is that this is an easy task. We can always approach the medical centers' chief engineer's office, and they can physically inspect the places. We have information about maybe half a dozen or ten buildings which we know that does have interstitial space, and we got the input back from the chief engineer's office, yes, they are fireproofed.

And we can extend that information to the main hospitals and find out how many more are with the interstitial space, and they can provide us that information. We won't have to wait for special inspection by FCA or anything. We can get that information quite easily.

MR. SIEGEL: Some of the hospitals have concrete frames. They're not all steel frames so it's not that onerous a task.

MR. GRITCH: No. If you know what you're looking at, it's instantaneous when you step into the space. So, yes, concrete or fireproofed steel is, you'll recognize it immediately.

MR. POLAND: Do you know all the projects that have interstitial spaces?

MR. SIEGEL: I did, but--

MR. GRITCH: Not all of them.

MR. SIEGEL: --the interstitial spaces in more recent years have not been completely VA Building System projects. Some of them have used mechanical floors, which they call interstitial space, and it's not been a rigorous system or usage that it used to be.

MR. BANGA: For example, you are familiar with Palo Alto.

MR. POLAND: Yeah.

MR. BANGA: That it got deleted. It started with the project with interstitial

space and then interstitials for that major replacement hospital we did for Palo Alto.

MR. POLAND: Correct.

MR. SIEGEL: That was a very interesting decision that was made on that. The architects and engineers who designed the initial design did it with interstitial space, and their estimating showed a, one of the things in the cost analysis, which came to the fact that it really did not cost more than traditional construction, was the savings in time using the Building System.

And the Controller's Office said to the then head of what we now call Operations, what we used to call--I don't remember what it was called at that point. The person in charge of Project Management of all of the facilities said--the controller said, okay, if that is true, then, will you cut the schedule by six months?

And the head of Project Management said no, and so then the controller said, well, then you can't use the Building System. It was an amazing session.

MR. POLAND: Okay.

DR. MEJIA: Okay. Thank you.

MR. POLAND: Other questions or comments? Okay. We have a motion to carry out this inspection and develop a mitigation if necessary.

All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: The motion carried.

Okay. We're ready for item 2(e), progress report on the development of USGS software.

MR. BANGA: Well, Mr. Chair, before we go to that item (e), there is one particular motion which we have not listed in that agenda, which is the motion seven and the response, VA response to that.

And the motion seven has to do with assessment and mitigation of post-1982 retrofits. Buildings that have been previously designed or retrofit after 1982 in accordance with VA design criteria H-18-8 are generally considered to have adequate seismic resistance and, therefore, exempt from routine risk assessment except as required by Section 2.3a of H-18-8.

As seismic design, detailing and construction methods have improved since the

1980s, these buildings may include deficiencies relative to current building codes and may not perform as well as new buildings.

Therefore, in instances where seismic deficiencies become known, such as through design of building renovations or additions, the Advisory Committee recommends that deficient conditions be evaluated.

Yesterday, at the workshop, I noted that in the past year alone, we received requests from medical centers to conduct fresh seismic studies of approximately half a dozen such buildings as they were being planned for renovation.

And examples of those are Fresno Building 1; Loma Linda Building 1; North Little Rock Building 65; Palo Alto Building 6 and 7; Portland Building 100; and Reno Building 100.

In most cases, the studies' results which we got indicated detailing deficiencies related to the current building codes. They met the seismic force level on the buildings because they were based upon very stringent code requirements of that time, but the detailing requirement, that is correct, that was a good motion that that detailing was not up to the mark of the current standards. And we are proceeding with them fixing the detailing.

MR. POLAND: Thank you. Any questions about motion seven from the last meeting?

DR. MEJIA: So the implications, Kris, are that some deficiencies have been identified.

MR. BANGA: Yes.

DR. MEJIA: And the VA is taking action to--

MR. BANGA: Correct.

DR. MEJIA: --address them?

MR. BANGA: Yes. Typically those are basically the diaphragm connections to the shear walls and some of the anchorage details to column base plates, they are not properly doweled, meeting the current code requirements, and so we are either adding more pilasters or adding more anchors or--

MR. POLAND: Okay.

DR. DEIERLEIN: So, Kris, I guess this will be an ongoing, like so you reported from the last year these number of buildings things were flagged. And I guess this would be continuing mode of operation going forward.

MR. BANGA: Yes.

DR. DEIERLEIN: To continue to uncover these.

MR. BANGA: Yes.

DR. DEIERLEIN: Yeah, I think that follows the spirit of what we want to do.

DR. MEJIA: Thank you.

MR. POLAND: Okay. We'll go on to the progress report on the development of USGS software.

MR. BANGA: Well, as we discussed yesterday, the Committee had made the recommendation of developing some kind of software which will indicate the level of deficiencies like the color codings, green, yellow, and red, and the response which we got from USGS through the Dr. Kalkan, who is leading the project, that that software is under development.

It will take maybe a few more months to fully develop that software. That's where USGS is right now.

Then the second part of this was that VA should confirm with the USGS that the damage assessment approach takes into account the seismic force resisting system characteristics of the instrumented buildings, and that the seismic force resisting systems are properly identified using the model building designations from HAZUS. The structural engineer of record should be offered the opportunity to verify the approach.

Here again the damage assessment approach for VA, that Dr. Kalkan's response was that the damage assessment approach for VA has two components: structural health monitoring and damage detection system; and number two was ShakeCAST. The former does not utilize fragility function. Instead sophisticated system identification and damage detection algorithms are used.

ShakeCAST uses fragility functions. A table below shows the HAZUS structural classifications of 28 VA hospitals selected for multi-channel instrumentation.

And you all saw that, and it seems like you were satisfied with that response.

MR. POLAND: Yes, we were. And I'd like to deal with these two approaches separately. One approach is the health monitoring and damage detection system. And the other approach is ShakeCAST, and we have motions related to both of those.

So, Greg, you want to do the first one?

DR. DEIERLEIN: You'll learn not to assign me motions, Chris.

[Laughter.]

DR. DEIERLEIN: They're more wordy than other ones. Okay. So the first one deals with--let me read it, but it deals with the seismic instrumentation program and the software Kris has mentioned being developed.

So the Advisory Committee is encouraged to see continuing progress on strong motion instrumentation for post-earthquake condition assessment of buildings. To further ensure that the USGS damage assessment software will meet the needs of the VA, the Advisory Committee recommends that the VA contract with the USGS, or other appropriate entity, such as NIBS, to convene a workshop to review and assess the damage assessment software that is being developed by USGS.

This workshop should include practicing structural engineers who have experience in earthquake engineering and building instrumentation; researchers with expertise in earthquake engineering, earthquake instrumentation, and structural health monitoring and damage detection; and staff from VA facilities who are likely to be first adopters of the system, for example, personnel from VA emergency response offices and management staff from large hospital facilities in high seismic regions.

Ideally the workshop should be scheduled to occur soon after the USGS completes the software implementation and supporting technical report but before widespread deployment to the VA facilities.

The goal of this workshop is to provide review and feedback to help ensure that the damage detection system is employing the best available techniques and algorithms to provide reliable measures of building safety.

MR. POLAND: Okay. And then the second?

DR. MEJIA: I second.

[Motion made and seconded.]

MR. POLAND: Okay. Discussion?

MR. BANGA: Is there an opportunity USGS has in-house capability to review the software?

MR. POLAND: USGS has the capability to review the software, but in my mind, our concern is that USGS as a scientific research organization does not have a broad range of practicing structural engineers that are familiar with construction and response of buildings. And since those are the engineers that will be doing the inspection of the buildings after the earthquake, and this information is to serve their needs during that inspection, we think it's important that they be involved.

Do you want to add to that?

DR. DEIERLEIN: Yeah, the other point would be this damage detection software and making this decision between the green, yellow, red that we described is an emerging kind of research topic that I think the USGS has good in-house expertise on developing it, but because it is emerging and not fully established yet, I think to have other researchers in addition to the practicing engineers Chris mentioned, to have researchers who are involved to have the opportunity to

look at that and provide comment.

So I think the USGS can certainly convene such a workshop, but I think it needs to include these outside people.

MR. BANGA: The outside resources, since this is a specialized field, I don't think we are that familiar with this part of the work. Will the Committee be able to suggest firms or names where this review process can take place?

MR. POLAND: Yes, we can.

DR. DEIERLEIN: Yes, I think absolutely, yeah.

MR. POLAND: We can submit those names to you. We're not prepared right now to give those to you, but we can submit those names to you shortly.

DR. MEJIA: Chris, one of the objectives of the software being, allowing the VA to readily assess the condition of the buildings after an earthquake would suggest that the users of that software might need to provide input as to whether indeed the output would be allowing them to make those decisions with some confidence I would think.

How would that, would that be partly assessed by this workshop?

DR. DEIERLEIN: Yeah, I think that's the intent. So the three groups we've recommended to come would be the practicing structural engineers, would be researchers, and the third group would be a few key staff, some from this group in the room today, but also from the emergency operations, but also from some of the facilities in high seismic areas who are on the front lines, if you will, to understand what this software does and what it doesn't do.

MR. SIEGEL: In total, how many people do you think would be involved?

DR. DEIERLEIN: I would say 15 to 20. The number grows, just even a few people from your group, you know, USGS.

MR. POLAND: This is not an uncommon process.

MR. SIEGEL: No, no, I understand that.

MR. POLAND: And there is value in having a diverse group that has multiple perspective because this is an emerging field, and we're looking to develop a new technology.

MR. SIEGEL: I wonder whether it would be better not to have USGS do this because it's their product which is being, quote, "criticized"--unquote--so NIBS might be better to convene this or do you think it should be convened more properly by USGS? Including, you know, that would include USGS personnel, of course, in this.

DR. MEJIA: Yeah, USGS would need to be involved, I think, in the planning and

obviously be the lead presenter of the workshop because they would be best suited at determining how to present the different aspects of it.

MR. SIEGEL: I know they have to be involved, but do you think there's an advantage or disadvantage of having them in charge, so to speak, or to have an outside group in charge?

MR. POLAND: I think there's an advantage in having them be in charge because of the special nature of this. They also reported to us that they're going to do an internal review at USGS, and that they are looking to have the Advisory Committee do a review also, and what this motion is saying is we'd like to have a broader group participate in that review, and I think it would be good to have all that occur at the same time.

It just seems like it would also make for a smoother review process. I don't like to think of it as this group will be criticizing what USGS is doing. It's more of a peer review and becoming a resource for how to best implement the intent of the program.

Now, the other thing is when you talk to USGS about this if they don't want to do it or they're reluctant to have outside reviewers come in, then you may have to go to an outside agency to do it.

It seems that's going to lengthen the process because the outside agency is going to have to get up to speed with what we're trying to do, and they're going to convene the workshop, they're going to have to write a report, and the USGS is going to have to review the report and respond to it, and it just seems like that would be a much more lengthy process.

DR. MEJIA: And it would involve a more formal phasing of the process in that the USGS would have to turn in a product, at least a formal draft form that can then be reviewed, if you will, by the outside workshop and the outside agency.

DR. DEIERLEIN: Part of it--since running a workshop, part of it is just the logistics of getting the meeting room, getting invitations and so forth like that, and it seems USGS can certainly do that. Maybe a question, though, would be in terms of, you know, who signs off on the report from this group? Is it someone at USGS, is it someone from the VA group here, is it someone from our Committee, the Advisory Committee, or is it another individual?

MR. SIEGEL: Well, I don't think it should be signed off on by VA. I think it should be submitted to VA by either USGS or NIBS or you all. It's to be determined. But I don't think it should be signed off by VA. We should be given it and then accept it or not accept it, et cetera.

DR. DEIERLEIN: Yeah.

MR. POLAND: Greg, maybe you could help us understand the process that you use in a peer review panel for, let's say, a tall building when a city requires a peer review group to come in and oversee what's going on on their behalf and offer suggestions. I know you serve on those kind of review committees. So how

does that process work?

DR. DEIERLEIN: Well, so peer review committees are typically the building department, say in the city of San Francisco, will require that as part of the submission requirements that the owner engage a peer review committee who's an independent entity of a few experts who then meet with the design team and review their documents and then ask questions of them in kind of a formal way, and then at the end of that process give a letter that basically gives their opinion in terms of whether that, the design process that's been used, the analysis methods, and so forth, are up to the kind of standard of state-of-the-art and practice.

MR. POLAND: So the owner is the one that convenes the peer review panel in that case. Or is it the city?

DR. DEIERLEIN: No, it's the owner--the owner is the one who pays the peer review panel, and the owner is the one who invites the peer review panel, recognizing that the city has told the owner when they do their submission requirements, they won't accept that unless they have a report from a peer review committee.

MR. POLAND: This process is what I was thinking of in terms of this workshop because in our case I believe the owner is USGS, and you are the city. The VA is the city. And so it would work in a similar manner.

DR. DEIERLEIN: So it basically would be asking USGS, who is kind of the design team--

MR. POLAND: Yeah.

DR. DEIERLEIN: --to engage a review panel that would have a chair and convene that panel, and that panel would kind of run the meeting and work with USGS to present the information, have question and answer.

DR. MEJIA: Perform the review on behalf of the VA. I think the VA would be more analogous to the owner perhaps in that case and the USGS to the design team.

MR. POLAND: Uh-huh. That's probably right.

DR. MEJIA: Having worked on some of those panels.

DR. DEIERLEIN: I guess to me you don't want to over-legislate this process, but at the same time, you don't want to under-legislate it, right, to have a workshop, and it was fine, let's go forward, but to have some formal, not too lengthy, but opinions back from the, well, I'm not sure there would be consensus from this workshop, but points raised during the workshop in terms of, you know, the strengths and weaknesses of this software.

And I would emphasize that, again, because it's an emerging area, it's not intended to be punitive, but I think there is room for differences of opinion in

terms of how the software works, and so forth.

DR. MEJIA: The workshop could provide some important feedback to VA on I think the applicability and reliability of the software for VA's use in making those important decisions of action or evacuation of buildings or not after an earthquake.

DR. DEIERLEIN: I'm imagining that some of the metrics that are mentioned in the USGS report, in other words, the things they'll look at, building drift, changes in building period, propagation of vibrations through the building, that this group could potentially provide some confidence or some added confidence in terms of how reliable those indices are, and presumably USGS could modify their software, the damage detection algorithm, based on the outcome of this workshop.

And in that sense, I think they would appreciate this input so it's not just their judgment of a few researchers at USGS, but a broader group.

MR. SIEGEL: Well, I think it's an absolutely excellent idea. I'm still not certain who should be in charge of it.

DR. DEIERLEIN: Yeah.

MR. SIEGEL: Whether it should be USGS or whether it should be an outside agency. You all apparently feel that it should be USGS, I gather.

DR. MEJIA: Let me ask a question, Lloyd. Once the USGS turns their product over to VA in a completed form, that being the software, what process would VA follow after that to eventually implement that software in the decision making?

MR. SIEGEL: Well, I would imagine that VA would want a product turned over to them that is almost instantly implemented by USGS and all of their instrumentation that is supposed to, in effect, notify the chief engineer, notify us, and the CEOSH office, et cetera, so we expect it doesn't have to be implemented. It's automatic.

DR. MEJIA: Well, part of the service that they use, would be providing, would be the actual implementation, if you will, in coordination with, as we discussed yesterday, your Office of Emergency Services, I think it's called, or--

MR. SIEGEL: CEOSH, whatever it stands for. Continuity and--

DR. MEJIA: Basically the--

MR. SIEGEL: --Operations.

DR. MEJIA: Yeah, the transition and training of personnel and maybe some transition period over which the USGS would assist--

MR. SIEGEL: It should be on--

DR. MEJIA: --VA and--

MR. SIEGEL: --a statement of work for USGS. That should all be on the statement of work for USGS.

DR. MEJIA: With that in background, I guess I just--with that background, it seems to me that probably the better agency to make that review and seek the external advice for implementation would be the USGS if that is the process that will be followed where the USGS basically will take this almost to turnkey--

MR. SIEGEL: That's right.

DR. MEJIA: --implementation.

MR. SIEGEL: Yeah.

DR. MEJIA: For VA.

MR. SIEGEL: Yeah, yeah. And all of that can be written into the statement of work and we may ask your advice on the wording of the statement of work.

DR. DEIERLEIN: It sounds like to make sure there's a little bit of independence here, that you could ask the USGS to, first working with the VA and perhaps with input from our Committee, to establish a small group of a review panel, which might be four or five people that would work with USGS to plan and convene this, and that panel of four or five people would write up the outcome of this workshop, the recommendations.

That's a little bit of kind of a peer review sort of model where this panel would be kind of an independent, give an independent voice separated from what USGS might say.

MR. POLAND: And I think that we're going to discover that there's going to be an issue with USGS about actually delivering the kind of information that we need for the post-earthquake inspection.

I believe USGS is going to feel comfortable to telling us the metrics that they can measure, but I don't know that they're going to want to be responsible for interpreting those metrics in terms of how safe a building is.

MR. SIEGEL: Well, it seems to me that's what the initial charge was, to come up with a methodology which would tell us how safe the building was. I mean that was the intent from the beginning.

MR. POLAND: I understand. I think that this workshop and this peer review group that Greg is talking about is going to be necessary to assist them in setting the criteria for making those determinations.

MR. SIEGEL: Well, I'm not arguing with that, but I'm just wondering whether it should be their work product or an independent body. I gather from your sense that it really should be their work product. On the other hand, if you don't think

they're going to be willing to be responsible for doing it, then we have to have an outside group. I think you all are a better judge of that than we are.

DR. MEJIA: Can we look at the motion once more to see where we stand in light of that discussion?

[Laughter.]

DR. DEIERLEIN: As long as I don't have to read it.

MR. POLAND: We can do that. We can do that. The motion is about convening the working group, do that, the workshop. Lloyd is just questioning whether we ought to be suggesting that it be convened outside of USGS as opposed to within USGS. Understand that.

And in my mind, it comes down to what USGS is willing to do. It seems to me that if they were willing to do it within USGS, within the contract, that that would make it as smooth and streamlined as possible.

If they're not willing to do that, then we have to go to an outside agency, and I believe, Lloyd, you're concerned that we need the outside agency to get the independent review.

MR. SIEGEL: Yes. If we do, you know, again going back to the beginning of all this, it was the intent to come up with a product which would inform the local people whether or not the building is safe, and if it doesn't do that, it's not what the original intent was, and this, to a somewhat outside observer, not a structural engineer type, like me, it seems that it keeps to be going on and on and on, and each additional level of detail still does not get into what we thought we were getting in the first place a long time ago.

So I personally am disappointed, to use a mild word, because from the very, very, very beginning when we were first discussing this years ago, the intent was, oh, the local people immediately know whether or not the building is safe or the east wing isn't and all that sort of thing, and apparently we're still nowhere near that.

MR. POLAND: I don't think it's accurate to characterize that we're nowhere near that. We have all the buildings or instruments that we identified. The ability to calculate the metrics is in place. We understand that USGS has a beta version so that we have the information which is, to me, 90 percent there, and it's all real time monitored. So it's constantly being gathered so we always know.

The question is given the real time data, when do we say a building is safe to continue to occupy, get inspected, or when does it need to be evacuated? And that's this last part.

We think, we believe that this workshop can help inform that and with the expectation that USGS will take the information from the workshop and incorporate it in their program and deliver what they promised. That's my expectation. I don't think that we have seen failure at the task yet. I think that

we're at the last mile.

DR. DEIERLEIN: I think this workshop would further go a large way just to demonstrate whether USGS has employed everything out there that's available, which is again is still developing, so it's not going to be perfect, but at least some reassurance that what they're providing is the best thinking on this that we currently have.

MR. BANGA: Would it help if we have Kalkan again here?

MR. SIEGEL: Excuse me?

MR. BANGA: Would it help if we had--

MR. SIEGEL: No.

MR. BANGA: No.

MR. SIEGEL: I really am disappointed that it's taken this long because it seems to me what we were told years ago is the first thing we did would give us that information. We still don't have it, and we're still going to have to pay more money to get it.

But, you know, that's irrelevant. What we've got to do is to get it and get it in the most reliable way, and I think we need your advice on what that would be.

MR. POLAND: Okay. Maybe we should go back to the motion. Would you want to paraphrase your motion and what we're asking for?

DR. DEIERLEIN: I'd love to paraphrase it.

[Laughter.]

MR. GRITCH: I made him read the whole thing.

DR. DEIERLEIN: Yeah. Basically this motion is to ask that, you know, the VA work with USGS or, if necessary, an independent agency or group to convene this workshop that will include participants, structural engineers, researchers involved in health monitoring, damage detection and instrumentation, and also with some facility managers from kind of key hospitals to take a careful--to see a demonstration of the software, to review the technical documents behind it, and to offer review and comments in view of how effective this software is, whether it's employing the latest kind of thinking on this damage detection, to give reliable indicators as to the post-earthquake safety of the building.

And I think we've just heard some discussion that putting together this workshop maybe would be 15 to 20 people total, but perhaps part of the discussion with USGS should be to identify four or five people who are part of the workshop but who are going to give kind of their independent short report back to the VA on the outcome of this workshop, that that would come from them rather than through the, you know, prepared by the USGS folks themselves.

MR. POLAND: We also said that the Advisory Committee is available to assist with the development of the scope of work and with the recommendations for who should participate, and I think that obviously we have a continuing interest in this, and we would like to see it to the end and see it so that it's fully functional.

Okay. Any other comments? Okay. We have a motion and a second to do all that was just said.

[Laughter.]

MR. POLAND: All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Motion carries.

MR. BANGA: Mr. Chair, we would like to have a five-minute break.

MR. POLAND: Okay. We will take a five-minute break and reconvene--let's reconvene at 10:15.

[Whereupon, a short break was taken.]

MR. POLAND: Okay. We're ready to reconvene. We'd like to pick up the second half of the discussion that relates to ShakeCAST; right.

Greg, maybe you can just review for us a little bit where we are.

DR. DEIERLEIN: So review and then the motion?

MR. POLAND: No, no. Yeah, a little bit of review and then the motion. This is the second half of the program that we have.

DR. DEIERLEIN: Well, just so we heard in the update from the VA on the building instrumentation program and so forth that part of that was that HAZUS-type characterizations of the instrumented buildings were implemented into ShakeCAST, which provides another, albeit less precise, measure of building evaluation following a strong earthquake, that it can be done if you have the building characterization and put it into ShakeCAST quite economically for any building, whether it's instrumented or not.

So it was based on kind of hearing that that we put together this, this motion. So I'll just read it in its entirety.

So the regular evaluation of VA facilities provides a continuing opportunity to collect information on structural building systems, which can be used to develop

HAZUS-type building classifications and seismic fragility models.

These can be combined with loss assessment tools to provide information on the expected performance of buildings, and further combining the HAZUS type building fragility models with the USGS ShakeCAST system, as has already been done for the instrumented VA facilities, offers an unprecedented opportunity to provide rapid assessment of all VA facilities after earthquakes.

While the HAZUS-based building classifications and fragility curves are not as accurate as detailed information that can be obtained by strong motion instruments and/or detailed facility assessment studies, such as ASCE 41, the HAZUS-based building classification and ShakeCAST assessments are a cost effective technique to rapidly obtain information on a large inventory of VA facilities.

With this in mind, the Advisory Committee recommends that the VA, first, systematize the collection of HAZUS-based classifications and seismic fragility curves on VA facilities coordinated with other routine facility assessments.

Second, that it work with the USGS to integrate the VA building fragility curves into ShakeCAST.

And third, that it coordinate with USGS and the VA Emergency Management Office to ensure that the ShakeCAST system is developed and maintained to provide reliable and timely information on post-earthquake performance at VA facilities and provide this information to appropriate people and offices in the VA.

That's the motion.

MR. POLAND: Okay. Do we have a second?

DR. MEJIA: Second.

[Motion made and seconded.]

MR. POLAND: Okay. Discussion.

MR. BANGA: So if we want to clarify the task, the task has been assigned to VA and USGS and our Emergency Management Office; is that the gist of the motion?

DR. DEIERLEIN: Yes, I think it's what--I don't think we could assign the task to the USGS, but we're--

MR. BANGA: Oh, you are recommending VA to work with USGS.

DR. DEIERLEIN: Yes, to work with USGS, yes, because they, we heard yesterday that the ShakeCAST software, anyone can--USGS will provide it to anyone so there's a choice of that the VA, perhaps in the Emergency Response or other group, can get the ShakeCAST software on their own computers and kind of work with the hospital groups to get these fragility curves implemented into the ShakeCAST with the latitude and longitude such that when there's an

earthquake and USGS broadcasts the ground shaking, that it could quickly be interpreted through ShakeCAST, but that software can either be, you know, implemented on a VA computer or it could be on a USGS computer.

MR. BANGA: Has the Committee seen the sample of the ShakeCAST, what currently has been shared with the chief engineers and a few of us here?

MR. POLAND: We had that yesterday.

DR. GHOSH: They saw it all.

MR. BANGA: Yeah.

MR. POLAND: I brought in that copy--

MR. BANGA: Right. I'm just confirming that.

DR. DEIERLEIN: Yeah, yeah.

MR. POLAND: --from the La Habra earthquake, and again it's a different, it's a different way of estimating what's happened at a site than what we were talking about previously.

USGS after an earthquake develops a map of the strength of shaking called a ShakeMap, and it's based on estimations of what the ground shaking is and the records that they have. They only have a few records, but they use earth science algorithms to estimate what the shaking is all over, and once they've made that estimate, they can apply that to a particular site and, given that information, if they know what the building is, then they can offer an opinion about what's happened to the building.

MR. BANGA: I thought the ShakeCAST is a bulletin issued after, immediately after an event.

MR. POLAND: Correct.

MR. BANGA: And they basically have picked up our hospitals, the ones which they shared with us, and that only talks about the incident which happened at that hospital.

MR. POLAND: It has the ability to talk about what happened at every building in the area that's affected. All the system needs to know is where the building is located, longitude and latitude, and which HAZUS designation it is, C3M, S1L, you know, there's 27 or 30 of those designations, and then given that information, they have standard routines to estimate how much damage they think has occurred in the building.

It's a very crude estimate, but it's much better than not having any estimate at all.

MR. BANGA: Are you saying to make additional improvement in that bulletin, or

is that bulletin as it is is okay?

MR. POLAND: The bulletin as it is is okay. What we're suggesting is to the 65, I think it's 65 buildings that are in there now, we could add very easily all 6,000 of VA's buildings because all we have to do is tell them where the building is and what its HAZUS model building is.

Now, the question is we know where the buildings are, and we don't know for all those buildings what the designation would be, what the HAZUS classification would be, and the motion is to gather that information during the facility condition assessment, during a routine process, and add that to the ShakeCAST system.

DR. MEJIA: Chris, I'm not sure I saw the copy of the bulletin that was circulated yesterday.

MR. POLAND: Do you folks still have it?

DR. GHOSH: Yeah, it was, it went to--

MR. BANGA: Yeah, I thought we gave it back to you.

MR. SIEGEL: I thought it was given to somebody to duplicate.

MR. BANGA: Somebody to duplicate.

MR. POLAND: Somebody look through their papers and see who ended up with it.

DR. GHOSH: That had color. Did it go back to you?

MR. SIEGEL: In fact, I'm sure it was given to somebody to duplicate because I believe you--

MR. POLAND: You can't miss it. It's got lots of colors.

MR. SIEGEL: And it's three pages stapled together.

MR. BANGA: Yeah.

MR. SIEGEL: Good God, I've got it.

MR. POLAND: You've got it.

[Laughter.]

MR. SIEGEL: I've got it.

MR. POLAND: Better you than me, boss.

[Laughter.]

MR. LAU: Color copies. I'll go downstairs.

MR. BANGA: This is the one that came to you?

MR. POLAND: Yes.

DR. DEIERLEIN: Yeah.

MR. BANGA: And very strangely the one which we get is just the top sheet. I don't know what--

DR. GHOSH: Top sheet, yeah.

MR. BANGA: We don't get the other two sheets.

DR. GHOSH: We didn't get the second part.

MR. BANGA: For some reason. So that's something which we need to--

DR. GHOSH: First part is the ShakeCAST. Second part is the detailed thing.

MR. POLAND: Well, of the three pages, the first page is the actual ShakeCAST alert that they send out, which you received. The second page is just a listing of everything that was recorded, and I don't know why you don't receive that. But that's also from the ShakeCAST program. The third page is an output from the ShakeMap program.

MR. BANGA: Yeah, I can contact Erol and we can get the complete thing.

MR. SIEGEL: Would you explain the difference between the ShakeCAST program and the ShakeMap?

MR. POLAND: ShakeMap is a program that they use to take the information they record in a region and estimate how strong the shaking is at different levels. There's 12 different levels that are shown in colors. It doesn't say anything about what's on the ground. It just talks about the level of shaking.

ShakeCAST takes that information and applies it to buildings that it's told about, and it says, okay, this building is this type of building, has this kind of fragility, this is what we estimate the shaking was, and so this is what the result of the shaking is.

DR. MEJIA: There's two conversations going on. The transcript will have a tough time.

MR. POLAND: We're in recess until we come back from the copies. How is that?

[Whereupon, a short break was taken.]

MR. POLAND: Let's go ahead and continue our conversation. Lloyd wanted me to clarify that there are two distinct monitoring programs being discussed and being implemented by USGS. One is based on their ShakeCAST system, which is generalized, and it considers their estimates of ground shaking in a region and the impact of that ground shaking on buildings that they're told about, that are characterized in standardized ways, not with specific information about the building other than its building type and size.

That information is useful in understanding what the extent of damage might be in an area, especially for a large inventory of buildings, and something that we believe is going to be very useful for the emergency response and recovery efforts of the VA.

And the motion that we're considering right now has to do with expanding the number of buildings that we have in that system. These buildings do not need to be instrumented. You just need to tell the ShakeCAST system what they are, where they're located, and what their building type is.

The second program that we're doing, that we finished talking about a few minutes ago, is a very detailed instrumentation and evaluation of specific buildings that we have identified. These are amongst our largest, most complicated hospitals that deserve--and because of their high occupancy, they deserve to have specialized instrumentation and the best estimation that we can have about how they performed.

We don't want to use the generalized information, and so we've recommended as an Advisory Committee, and you've instrumented 28 of those buildings, and we're in the process of developing or USGS is in the process of developing an algorithm that would give us specific information about the condition of those buildings based on what's recorded inside the building.

So there's two very different things going on there. One is generalized. One is very specific because of the size and complexity of the major medical center buildings that we have. Does that help?

MR. SIEGEL: The other point is the difference between ShakeCAST and ShakeMap.

MR. POLAND: Okay. The difference between ShakeCAST and ShakeMap, in the first program that I talked about, the generalized program, the USGS develops an estimation of the ground shaking in a region after an earthquake and produces what they call a ShakeMap, which is literally a map of the area that has 12 different colors on it that indicates the intensity of shaking as they've estimated it.

It's based on recorded motion when available, and it's based on earth science estimates, algorithms, if you will, to infer what the motion would be in other areas. They have, every time there is an earthquake anywhere in the world, they now produce a ShakeMap. Sometimes they don't even have instruments.

There was a ShakeMap drawn of Haiti after the Haiti earthquake, and there were

no instruments, but it informed--it was a way of informing the community of responders of what they thought the intensity of shaking was based on their earth science routines.

Am I doing okay?

DR. MEJIA: You're doing just fine, Chris.

I had a question. If the ShakeCAST approach or system were to be implemented together with the detailed instrumentation of approach for those buildings that are instrumented in detail, what would be the implications of any differences in the output of those two programs at those buildings and what sorts of inferences could be made as a result?

MR. POLAND: Well, first, it would not be at all surprising if there were different answers. Okay.

DR. MEJIA: I expected that answer.

MR. POLAND: The better answer is always going to be from the detailed instrumentation because when USGS has to estimate how strong the shaking is at the site, as you well know, that's based on generalized information, and it's nowhere near as good as actually having a recording at that site.

So if we have the local building recording, that's the information we want to use.

DR. DEIERLEIN: Chris, presumably, since these instruments are going to be operated by USGS that the strong motion instruments at the instrumented buildings will inform their ShakeMap.

MR. POLAND: That's correct. We've been told that that's what they're going to do.

DR. MEJIA: And the follow-up question is will the analysis of the instrumentation in the building inform the ShakeCAST report for that building?

DR. DEIERLEIN: I don't think so mainly because they're different software systems.

DR. MEJIA: And if it doesn't, then differences between the outputs of those two measurements would have what kind of implications to the use of other ShakeCAST reports?

DR. DEIERLEIN: Well, that would help inform, provide some evidence of the validity or not of the ShakeCAST reports.

MR. POLAND: Okay. We've each received a copy of the three pages related to the USGS ShakeCAST. The first page summarizes the alert that was sent out for the magnitude 5.1 earthquake that occurred in La Habra, which is in southern California.

The facility that recorded motion that hit the ShakeCAST alert system was the Long Beach Hospital. You see it listed there. The inspection priority was given as green for low, and it gave a PGA of four percent G.

The second page is a--

MR. SIEGEL: 4.11 means?

MR. POLAND: 4.11 is the magnitude. I'm sorry. The peak ground acceleration is 4.1 percent G.

MR. SIEGEL: Okay.

MR. POLAND: The Long Beach Hospital was probably designed for 40 percent G, I would guess, 30 or 40 percent G, peak ground acceleration, and, of course, the special acceleration is quite different from that.

The second page is a ShakeCAST report of all the VA facilities that are in the ShakeCAST system in the southern California area, and you can see that there are six of them. Five of the facilities, Brentwood, Sepulveda, Loma Linda, Wadsworth and Downtown LA, are all recorded shaking.

If you look over on your column that says PGA, less than two percent G, and that's below the threshold that they even worry about reporting. The one that shows up with the green bar is low, that's Long Beach.

Now, in the motion that we're considering right now, if we had all of our VA buildings in the ShakeCAST system and every building that recorded motion--I'm sorry--every building in the area of the ShakeMap would show up on this list. And so chances are the buildings at the Long Beach site--there's probably a dozen buildings at the Long Beach site, not including the little buildings, the significant buildings, all 12 of them would have been listed here. Probably because this is such weak shaking, they'd all be green.

But if the shaking was stronger, there may be a couple of those buildings that have not been retrofit--this building was retrofit--not been retrofit, and they're more vulnerable, and they may have shown up as yellow. But it would tell you that, you see.

And all we have to do is just input that information into the computer program. We don't have to go to the site; we don't have to--you just have to tell it the information.

Yes, Juan.

MR. ARCHILLA: I have one question. In this page right here, the one that's low, so are you saying that the only input that this building had in the ShakeCAST system was that structural classification?

MR. POLAND: That's correct.

MR. ARCHILLA: Okay.

MR. POLAND: That's correct.

MR. ARCHILLA: But then you mentioned that this building was retrofitted. Do those classifications take that into account?

MR. POLAND: I hope so.

DR. GHOSH: Yeah.

MR. ARCHILLA: Okay.

MR. POLAND: It should have.

MR. ARCHILLA: Okay.

DR. MEJIA: I had a question, and maybe this might be for the staff. For all six buildings listed on the second page, what information was provided to the USGS to put into their ShakeCAST system?

MR. BANGA: Unless they were among those 28, nothing else there.

DR. MEJIA: And of those six that are listed, are you aware of any of them being on that list of 28 instrumented buildings?

MR. BANGA: Yeah, some of them probably are there.

DR. MEJIA: But not all?

MR. BANGA: I'll have to look. Let me check mark one at a time and see if all of them are there.

DR. DEIERLEIN: But they must have been inputted if they showed up on this.

MR. POLAND: Yeah. We received yesterday a table from Kris.

MR. BANGA: Yeah.

MR. POLAND: If you look through your information, there's one that has the 75 buildings on it that are in the program.

MR. BANGA: Yeah, Los Angeles.

MR. POLAND: It's that sheet right there, Kris, that has the--

MR. BANGA: Yeah, here.

MR. POLAND: I'm looking at that one right there. That's all the buildings that are listed here should be on that table right there. It's included in the motion.

DR. MEJIA: Recommended to--

DR. DEIERLEIN: Loma Linda, Los Angeles, Brentwood--

MR. SIEGEL: I have a question. What do they mean by the Brentwood VA versus the Wadsworth VA versus the Downtown VA? Wadsworth VA is I think the main VA hospital.

MR. BANGA: Yeah. There are two parts. The Downtown is--LA is the separate--

MR. SIEGEL: Outpatient facility?

MR. BANGA: No, that's also a hospital. There are the hospitals also.

MR. SIEGEL: Downtown?

MR. BANGA: Yeah.

DR. MEJIA: Let's confirm that.

MR. SIEGEL: We'll have to do that outside this.

MR. POLAND: Okay. We've got to go to one conversation at a time here. We'll just get this big inaudible on the minutes if we don't keep this under control. Go ahead, Juan.

MR. ARCHILLA: That was my question about this classification, does, you know, the retrofit change the classification? And I guess the other question is we talked about getting these classifications for all the buildings through the FCA process, correct, which is a three-year cycle?

And I just wanted to--you said there was 27 classifications? I'm assuming--

MR. POLAND: That was just a guess.

MR. ARCHILLA: A guess or whatever.

MR. POLAND: Yeah.

MR. ARCHILLA: I'm assuming that's obviously readily available like the definitions of these codes, you know, would be?

MR. POLAND: Yes, they are.

MR. ARCHILLA: Okay.

MR. POLAND: Actually if you google HAZUS, FEMA HAZUS, and dig through there, you'll find the, it's called the Individual Building Module, anyway you'll find information in there, and you'll find the classifications.

MR. ARCHILLA: Okay.

DR. DEIERLEIN: And I would think that part of our, the goal here too is that once this system is set up, that as you find out more information about your buildings, you can modify those default HAZUS fragility curves.

DR. GHOSH: Yeah.

DR. MEJIA: And, Kris, I just want to report that of the 28 buildings that are listed in page five of the response to the motions, there could be four that appear on page two of the ShakeCAST report that was handed out. So there must be at least two that are not on that list and that are automatically generating a ShakeCAST report without any information.

MR. POLAND: Well, I don't know how they generate the report without information. They had to put something in to get the report. I don't know, I don't think we have documentation about what was actually given to USGS to go in here. I'm concerned that the names of the facilities are not recognizable because if Lloyd doesn't know what these are, we're in trouble.

[Laughter.]

MR. POLAND: So I think that's part of what we need to get settled with that.

MR. BANGA: Yes.

MR. POLAND: And the designations that we use, they've got an ID number here which doesn't--maybe it's the same as the USGS station code. Anyway, we need to get squared away so it's clear what this information is, what it applies to.

MR. BANGA: Los Angeles has only one building which has the multi-channel instruments, but this list has like three other, information of three others. But the instrument, Los Angeles--

MR. SIEGEL: Is there a number on that building?

MR. BANGA: Los Angeles here, Building 1.

MR. SIEGEL: Okay. The numbers here are completely different.

MR. BANGA: Yeah. So that needs to be clarified because our records indicate that only one building in Los Angeles was instrumented with multi-channel instruments.

MR. SIEGEL: I believe that's the one that's next to the bottom, the Wadsworth VA, because that building with its early interstitial space was replacement Wadsworth Hospital.

MR. POLAND: That's correct. When you look on the list that we received in the motion summary, Building 5082 USGS station number is West Los Angeles, and that's Building 500, which is the main hospital at West Los Angeles.

So that's exactly right and see this designation really ought to say Building 500 West Los Angeles.

DR. DEIERLEIN: I think part of the point we've just heard, it would be good to find out from USGS who input this information for the buildings that are not instrumented and to understand what information is required and what's the process for keeping something like that up to date.

DR. GHOSH: Yeah, we can do that.

MR. BANGA: Yeah, we can. Very strangely, there's some homework now for us because this part of the information we don't get it.

DR. DEIERLEIN: Oh, okay.

MR. BANGA: And now the questions have started--they're not identified--the buildings--with numbers. Our database is totally based upon the numbers, building number of that particular--

DR. DEIERLEIN: Okay.

MR. BANGA: Yeah.

MR. POLAND: And it's going to be real important that the folks from the Emergency Operations Center are involved to make sure that the numbering system that we use in facilities is the same as the numbering system they're using. I don't know if it is or not. So that when these reports go out, people can identify what building they're talking about.

MR. BANGA: Right.

DR. GHOSH: So we have to add these hospital ID, also the building number.

MR. POLAND: Okay. And then just to finish the story, the third page is a copy of the ShakeMap for the earthquake, and what you see there is an image with a bunch of contour lines around it. It doesn't give us the colors, but the contour lines are indicating what the intensity is, and there is a version of this. I don't know why it doesn't print here. There's a version of this that comes out with the colors that are shown in the table above it.

DR. DEIERLEIN: The ShakeMap information is publicly available. You can google and find ShakeMap. I guess the ShakeCAST is not, as we understand it.

MR. POLAND: That's correct.

DR. DEIERLEIN: It just comes to people who have input buildings into it.

MR. SIEGEL: I'm not sure, but I would guess these are all with the below moderate. That's why the blue lines.

MR. POLAND: Oh, I think you're right. I think you're probably right. That's what

those lines are. The color of the line is showing us the intensity. This table on the lower right-hand side that has the colors on it is also showing us the intensity of shaking.

So it's just inside that first small circle that has a yellowish color that's a little bit stronger.

MR. ARCHILLA: That yellow circle represents the number VI in the Mercalli intensity scale, I imagine. It was 800 to 1,000; is that right?

MR. SIEGEL: Well, one of our problems is the lack of accuracy in the color copies. I don't know who has the original copy, but that should have the most accurate colors. The color machine did not do a very good job on reproducing colors.

MR. POLAND: Okay. So are there any more questions about this documentation, ShakeMap, ShakeCAST, the intent of our motion?

MR. ARCHILLA: I just have one more question. The detailed assessment methodology, that doesn't have a short little acronym yet like ShakeCAST or something; does it?

MR. POLAND: No.

MR. ARCHILLA: Okay. Just wondering.

MR. POLAND: Okay. Ready to vote?

DR. DEIERLEIN: Chris, I'd offer one response to a comment, one friendly amendment to the--

MR. POLAND: Okay. Why don't you read the motion to us then?

[Laughter.]

DR. DEIERLEIN: You don't want to get out of here today; do you? Let's see. All right.

MR. POLAND: I'm watching the clock. Move right along.

DR. DEIERLEIN: All right. The regular evaluation of VA facilities provides a convenient opportunity to collect information on structural building systems which can be used to develop HAZUS-type building classifications and seismic fragility models. These models can be combined with loss assessment tools to provide information on the expected seismic performance of buildings.

Further, combining the HAZUS-type building fragility curves with USGS ShakeCAST system, as has already been done for the instrumented VA facilities, offers an unprecedented opportunity to provide rapid assessment of VA facilities after earthquakes.

While HAZUS-based classifications and fragility curves are not as accurate as detailed information that can be provided by strong motion instruments and/or detailed facility assessment studies, such as ASCE 41, the HAZUS-based building classification and ShakeCAST assessments are a cost effective technique to rapidly obtain information on the large inventory of VA facilities.

With this in mind, the Advisory Committee recommends that the VA, first, systematize collection of HAZUS-based classifications and seismic fragility curves on VA facilities coordinated with other routine facility assessments.

Two, work with the USGS to integrate the VA building fragility curves into ShakeCAST.

And three, coordinate with the USGS and the VA Emergency Management Office to ensure that the ShakeCAST system is developed and maintained to provide reliable and timely information on post-earthquake performance of VA facilities and to inform appropriate people and offices in the VA of these ShakeCASTs.

MR. POLAND: Okay. Last chance for discussion? All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Okay. Motion carries.

MR. SIEGEL: Did you have a friendly amendment?

DR. DEIERLEIN: I took out a word that I didn't read the second time.

MR. SIEGEL: Oh.

[Laughter.]

DR. DEIERLEIN: The offending word.

MR. POLAND: Okay. Let's move on to New Business, item 4(a), the Facade Inspection Program.

MR. LAU: Juan is going to speak to this item.

MR. POLAND: Okay. Juan.

MR. ARCHILLA: Okay. Let me just read to you. Okay. So the issue is--

MR. SIEGEL: Juan, could you speak a little more loudly?

MR. ARCHILLA: Sorry. Yeah. So just to give a little background, as probably

everybody knows, the Facade Inspection Program occurs every other FCA cycle. So essentially each facade that meets the criteria gets inspected every six years. Just some background information. There's also some--so the criteria that we talked about yesterday was buildings that are over 30 years old as well as having the exterior facades greater than 80 feet above the adjacent grade, and we talked about, you know, the maximum, the maximum point of the building. Of course, the grade may vary.

In addition to that, when we come up with the scope of work, we also asked the stations if--basically a facade inspection is not necessary for buildings that have had similar facade inspections by professional architects or engineers or major facade repair or maintenance work in recent years.

Okay. So we just have some--Fred and I, when we were coming up with the scope of work for this last year wanted to clarify--that was one issue, like "recent years" is a little bit vague. So let me look at the questions--

So, yeah, so the first question is to clarify the timing of recent inspection and maintenance work negating the need for inspection because obviously that can have a big impact, you know. That's every six years. What is the, what kind of qualifies as recent?

For example, if it's within three years of the last, you know, within the three years, then basically it increases the window from every six years to nine years essentially, you know.

We just wanted any thoughts on that.

MR. GRITCH: Yeah. Fred and I have talked about that just a little bit at break and stuff because I was somewhat unsure what you were asking in the question: clarify the timing of recent inspection and maintenance work negating the need for inspection. But the six years was chosen because it fits with the cycle of what you have. We know that every three years--it's certainly not necessary every three years.

So every other cycle was chosen, but that's not--there's no hard science that says that's, you know, rocket science that you need to do that. So I don't think it's a problem if you take it from the recent inspections or whatever it is from the time that they finished those repairs and then extend that six years from that point forward.

So you could possibly have a nine-year cycle for that one facility, and then it would be back on a six-year cycle after that, after the repair, somewhere in there, or it could be just six years, you know, after that depending on when those repairs were completed. You could extend that six year cycle from that point. I don't think that's a problem.

MR. ARCHILLA: Okay. What about the inspection, I mean the work was done, you know, one year after the inspection? That would basically be 11 years; right?

MR. LAU: Right.

MR. GRITCH: No. Why would it?

MR. LAU: Well, if they--

MR. GRITCH: It would be, then, like seven years.

MR. ARCHILLA: Oh, no, no, we can't--the six years is a fixed schedule.

MR. LAU: Right.

MR. ARCHILLA: So we can't arbitrarily--

MR. GRITCH: But you do it every--every three years you do a review of the facility; correct?

MR. ARCHILLA: Facility--

MR. GRITCH: And then this is done every second one.

MR. ARCHILLA: Every second one; right.

MR. GRITCH: Yeah, but you can just--you can then slide that, can you not, that when they get their inspection and the repairs done, that establishes that cycle for the next repair. You don't have to wait 11 years for that. Why would you not just go six years from that point?

MR. ARCHILLA: Well, because it's a predetermined schedule following the FCA. You know, they're all like each VISN is--

MR. GRITCH: Yeah, but wouldn't that just--it would be nine years would be top.

MR. ARCHILLA: Well, if we said recent to three years, then it would be nine years. But my question is if the work was done one year after the inspection--

MR. GRITCH: Yeah, okay.

MR. ARCHILLA: --then is that--so then the next one--

MR. GRITCH: The inspection took place in '10.

MR. ARCHILLA: Right.

MR. GRITCH: Okay. The work was completed in '11.

MR. ARCHILLA: Right.

MR. GRITCH: And then, so the next cycle when you would do it would be '13 would be the next evaluation?

MR. ARCHILLA: No, '16. Because it's six years.

MR. GRITCH: No, the next FCA, the next FCA would be in '13.

MR. ARCHILLA: '13; right.

MR. GRITCH: And then one following that would be '16, which would have been the next regularly scheduled one.

MR. ARCHILLA: Exactly. Right.

MR. GRITCH: Why would you not then just go from '13 and use that as your six year cycle on that one? Why can you not adjust the schedule for that?

MR. SIEGEL: Well, as you said, there's nothing precious about the six years.

MR. GRITCH: No.

MR. SIEGEL: And if it's done, if it's finished in '11, there is no reason you couldn't inspect it five years later and get it onto the cycle.

MR. GRITCH: I'm not--I don't think that's--

MR. SIEGEL: But I don't think it should slip more than--

MR. ARCHILLA: Right.

MR. GRITCH: Exactly. That was my point.

MR. ARCHILLA: Just, you know, what we did this last cycle was we just picked three years as kind of the qualifier, which would make nine years the maximum.

MR. GRITCH: That's fine. I think that's perfectly legitimate and go ahead with that.

MR. ARCHILLA: Okay.

MR. GRITCH: Now the second question was should the 80-foot height threshold requirement apply to short buildings with only small sections exceeding 80 feet? And the question is how do you measure grade? How much of the building is over 80 feet?

MR. ARCHILLA: Right.

DR. GRITCH: And it's pretty vague. So what I think you need to do is where you have very minor elements that may exceed the 80 feet on a building, that you need to establish some sort of guideline where what that is, and then we can look at that next year, but I think there's nothing magic also about the 80 feet. We also grabbed that as an arbitrary number. So if it's less than ten percent of the building or something like that based on perimeter exposure, I don't think you

have an issue.

But if minor elements is 45 percent of the building, that's a different issue.

MR. ARCHILLA: Okay.

MR. GRITCH: And I think we need to give yourself a number like less than ten or 15 percent, and you should be fine.

MR. ARCHILLA: Okay.

MR. POLAND: I'm going to take that as a motion.

MR. GRITCH: Oh, these require motions?

MR. POLAND: We should--we should do a motion.

MR. GRITCH: You want me to go through and then restate it as a motion?

MR. POLAND: Sure. Why don't you do that?

MR. GRITCH: Because we have two more.

MR. POLAND: Oh, keep talking then. Don't restate anything yet.

MR. GRITCH: We have two more before we go through it.

MR. POLAND: Okay.

MR. GRITCH: Then does the 30-year-old age threshold apply to the overall age of the building or the age of the reconstructed facade for renovated buildings? 30 years is not the age of the building. The 30 years is the age of the facade.

And then should buildings with recently installed exterior insulation finishing systems, otherwise known as EIFS, covering the entire original facade have special consideration?

I have no idea what you mean by special consideration.

MR. ARCHILLA: For example, there was a building that had this EIFS covering the original facade--

MR. SIEGEL: I'm sorry. I didn't hear.

MR. ARCHILLA: I'm sorry. Yeah, there was a building that had EIFS that covered the facade. EIFS was installed recently.

MR. GRITCH: Came back, had a brick facade, somebody wanted to update it, they stuck foam on it and put some stucco over the face of it to update the look of it.

MR. ARCHILLA: Right. And their argument was that, you know, the original facade is not exposed anymore. So, you know, we've put this recent EIFS on it so should it not be--they thought it didn't need to be inspected essentially.

MR. GRITCH: I would disagree.

DR. GHOSH: Me too.

MR. ARCHILLA: And that's what we--right, yeah.

MR. GRITCH: I would disagree and think that does not alter the existing facade that's underneath it. Its timeline is still running.

MR. ARCHILLA: Okay. Good.

MR. GRITCH: You haven't effectively affected that. It's not a renovation of that facade. That's still an existing one. You just added some cladding to the outside.

MR. ARCHILLA: Right. Okay. That's what we assumed, too. So--

MR. GRITCH: Yes, I would agree with that. So now that needs to be put in the form of a motion? I wasn't prepared for that.

Mr. Chairman, I make a motion to recommend the Committee recommend that the timing of the maintenance inspection cycle be extended after recent repair work was done to not exceed two additional cycles past that point.

Also that the 80-foot height threshold requirement, that staff should develop a qualifying statement as to the extent of the building that exceeds 80 feet, and if it's minor, at which point they're authorized to determine the degree of it, establish a number, that that would be okay, does not qualify the building.

Does a 30-year-old threshold apply to the overall age of the building or the facade? The 30-year-threshold applies to the facade and that buildings with EIFS applied over an original facade does not have special consideration, that the age of the facade is the determining factor.

MR. KOFFEL: Second.

[Motion made and seconded.]

MR. POLAND: We've got a motion and second.

MR. LAU: Quick question.

MR. POLAND: Yes.

MR. LAU: In the first part of your motion, you said not to exceed two additional cycles. I just want to clarify that means two six-year cycles, not three-years?

MR. SIEGEL: No, two three-year cycles.

MR. POLAND: Two of the FCA cycles.

DR. MEJIA: FCA cycles.

MR. GRITCH: Two three-year cycles. That should give you up to like nine years.

MR. ARCHILLA: I think our confusion is the facade is six years. It's not three years.

MR. LAU: Right, right.

MR. GRITCH: You mean that's locked in stone. You can't shift that on to a different cycle?

MR. ARCHILLA: No, no.

MR. SIEGEL: Why?

MR. ARCHILLA: I don't know if it's necessarily--you can answer.

MR. LAU: Why that we cannot be flexible on the schedule?

MR. SIEGEL: Yeah. On facades. I mean if there's somebody doing a facility condition assessment, three years hence or six years hence or nine years hence, why on earth must it be a multiple of precisely six? There is no reason for that. It could be five years, I think. It could be seven years, but it should not exceed in your motion six years. There's nothing wrong with that.

MR. GRITCH: Let me amend my motion, part (a) is that the time interval should not exceed ten years.

[Motion amended.]

MR. POLAND: That's good.

MR. ARCHILLA: Okay.

MR. LAU: Okay.

MR. POLAND: I think that makes sense.

MR. GRITCH: We'll just stay with that, should not exceed ten years.

MR. LAU: Thank you.

MR. POLAND: David?

MR. KLEIN: May I suggest for the purposes of the motion that you, rather than

state EIFS state actually what EIFS stands for?

MR. GRITCH: As a further clarification of the motion, the exterior insulation finishing system. EIFS is exterior insulation finishing system.

MR. KLEIN: Yes.

MR. POLAND: Thank you. I assume those changes are acceptable to the second?

MR. KOFFEL: Yes. I'm sorry.

MR. POLAND: Thank you. Other discussion? All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Motion carried. Thank you very much.

Okay. Move on to 4(b) "Occupancy Category." Juan, I think you're going to do this one.

MR. ARCHILLA: Yes. Basically, as we spoke about yesterday, there's been a lot of changes to ASCE 7 and 41 and so forth, and one of the changes was the terminology moving from "occupancy category" to "risk category." And I just felt to be consistent, H-18-8 should also make that change in terminology.

MR. POLAND: So we took that request as an opportunity to make some other suggestions about H-18 related to those changes, and Greg has a motion.

Greg.

DR. DEIERLEIN: Yeah. I have the one on the drift limit, but do you have one on the categories?

MR. GRITCH: I have one that has the categories in it, but it was related to the standards for new and leased buildings as it relates to definitions and the correlation of the categories to ASCE 7 from H-18. Is this the issue?

DR. DEIERLEIN: Yeah.

MR. GRITCH: Okay.

DR. DEIERLEIN: Because, Chris, the motion, the only additional motion I have is that's actually not quite on this list about the--

MR. POLAND: We're going to have two motions related H-18, and we're going to

start with Todd.

MR. GRITCH: Okay. After a discussion--Mr. Chairman, I'd like to make a motion. And after a discussion of appropriateness of industry standards to less critical relatively short-term facilities and recognizing that there are multiple issues involved, that we would like to recommend three actions be taken:

Of that, the first would be A: a correlation of VA H-18-8 Facility Occupancy Categories, being critical, essential and ancillary, to be correlated with ASCE 7-10 risk categories I through IV.

I think that was the question at the moment; correct?

MR. POLAND: Okay. Uh-huh.

MR. GRITCH: Also, as I understood the discussion, that a second action should be taken, B: an analysis of appropriateness relative to the current listing of VA occupancies and their categorization as critical, essential or ancillary; are those that are currently listed there appropriate under the heading? They should be reevaluated to be determined if they are correctly placed.

And C: an analysis of appropriateness of national or state design and construction standards versus VA design standards for ambulatory care and outpatient clinic facilities whether they are leased versus owned.

[Motion made.]

MR. SIEGEL: Would you repeat that last one?

MR. GRITCH: Sure. C: an analysis of appropriateness of the national or state design and construction standards to be applicable to VA-- versus VA design standards for ambulatory care and outpatient clinics, whether they are leased or owned properties.

MR. SIEGEL: I think there is a verb missing there somewhere.

MR. GRITCH: Probably.

[Laughter.]

MR. GRITCH: I took out a lot of words.

[Laughter.]

MR. GRITCH: Which verb would you like to put in?

MR. SIEGEL: Should be undertaken.

MR. GRITCH: Well, this says that we recommend three actions be taken.

MR. SIEGEL: Okay.

MR. GRITCH: And this was No. C. This is the action to be taken.

MR. SIEGEL: Okay.

MR. GRITCH: The verb was first.

MR. SIEGEL: Okay. Thank you.

MR. POLAND: So we wrapped up three things together here. Changing the risk categories; get the tables listed that way; take a fresh look at how the occupancies are in the tables.

MR. GRITCH: Uh-huh.

MR. POLAND: And the--

MR. SIEGEL: For the layman like VHA who read all this, I would suggest that those risk categories be enumerated below so they understand what risk category A--an occupancy category is easy to understand. But what's a risk category?

MR. GRITCH: I think that we could provide a copy of the risk categories from ASCE 7--

MR. SIEGEL: Yeah.

MR. GRITCH: -10 to accompany the motion.

MR. SIEGEL: Yeah, yeah.

MR. POLAND: Okay.

MR. BANGA: The C part is not very clear. What exactly do you want on the part C?

MR. GRITCH: Well, we didn't discuss it a tremendous amount, but it was that, the question that was on the table was would it be appropriate for ambulatory care and outpatient clinics that are going to be leased and not owned by the VA system to be designed and constructed to a different standard than the VA standards, that standard being the International Building Code or NFB or the state of California, in the particular case, those standards versus the VA design standards.

MR. BANGA: Well, we have that requirement that if it falls under the ancillary facilities, then they don't have to follow the VA H-18-8. Then they follow IBC. So--

DR. DEIERLEIN: These are not in the ancillary--these facilities.

MR. GRITCH: Yeah, they fall into--some are under essential and some under--

MR. SIEGEL: Well, the point is should they be moved?

MR. GRITCH: Well, that was No.B, analysis of appropriateness.

MR. SIEGEL: Well, doesn't that cover it then?

MR. GRITCH: We think so.

MR. SIEGEL: What he's saying, is C needed because it's covered under the other one?

MR. GRITCH: Well, we don't know. You don't know yet till you do the analysis.

DR. DEIERLEIN: Is a way, though, to change C, you talked specifically about the ambulatory care and outpatient clinics, but is the essence of C really just to say any leased buildings that would otherwise be subjected to H-18-8 or H-18, to question whether that's required?

MR. GRITCH: You're getting back at me for making you read those things; aren't you?

[Laughter.]

MR. SIEGEL: Let me mention what the problem is. Right now I think the largest leased facility that is being considered right now is 150,000 square feet. However, in the past, we've done them up to 300,000. So is that, a 300,000 square foot appropriate not to have VA standards? I don't know. I'm raising this.

MR. POLAND: Well, Lloyd, yesterday you raised the question--you asked the question to us, is it appropriate when we lease a building for 20 years, that we should spend what they say is 35 percent more on the cost of that construction because we followed our VA standards? And it's seismic and it's life safety and it's everything that we have in our VA standards.

And we've come back and said we don't know. We need to have a look at that and we need to see if it's appropriate. That's basically what item C is saying.

MR. GRITCH: That's correct. And also I don't know that it matters, given those parameters, the size of the structure. It's the length of term of use and the occupancy and the use of the structure that are more important. The size at that point I don't think is that critical an issue, but during your analysis, you may determine it is.

MR. SIEGEL: Would the word "appropriate" stuck in there somewhere be a good idea?

MR. GRITCH: Well, I think that's the title of it, an analysis of appropriateness.

MR. SIEGEL: Oh, okay.

DR. DEIERLEIN: You could just take out "ambulatory care and outpatient clinic," you know, for facilities when leased.

MR. GRITCH: Well, I would resist taking out "ambulatory care and outpatient clinic facilities," in effect opening it up, because in my mind only those basically or a substitution of non-critical, non-essential type spaces would be appropriate not to design to VA standards.

You could, if you took it out, it might open it up to other facilities that might be, exceed that.

DR. GHOSH: It's normally outpatient clinics or ambulatory care.

MR. GRITCH: I mean that you're going to get 98 percent of what buildings you're looking at with ambulatory care and outpatient clinics.

MR. POLAND: David.

MR. KLEIN: Can I please ask for clarification? In your item C, are you referring only to design and construction standards for seismic issues or for all issues? And the reason that I ask that question is because there are elements that are beyond our control. For instance, the accreditation body requires our facilities to meet the life safety code.

That wouldn't apply to seismic, but it would apply to life safety. We have no choice.

MR. SIEGEL: These are minimums that we're talking about. There is no reason why it couldn't be increased.

MR. GRITCH: Well, in my mind, the life safety code is a national design and construction standard.

MR. LAU: Yeah.

MR. POLAND: Okay.

MR. GRITCH: But it also allows us to then look at the state of California construction standards relative to the VA also. So this is a very large and kind of encompassing thing that gives the staff latitude to do an analysis and come up with very--we don't know at this time, and we want them to take a look at it and then to basically come back to us and tell us what they found and what they're--in their expertise is important and what they found, and we may decide one way or the other and may extend the study at this point. It's just giving you authorization to do, to look at this issue.

MR. POLAND: I think it has to be for everything, not just seismic, because the question about why does it cost 35 percent more and is that appropriate for a leased facility really has to encompass everything because seismic is not going

to cost 35 percent more. It's got to be a lot of other things along with that.

MR. GRITCH: And then if we just did seismic, next year we'd be having to expand it so we might as well give you the latitude to look at it completely.

MR. POLAND: Yeah.

MR. KLEIN: So you're not suggesting here that we change our criteria for VA owned property, only looking at whether the leased property should be equivalent to the owned property? So we're not asking to reexamine what we do for our own property I think is what you're saying.

MR. GRITCH: No, I am not asking you to reexamine what you do for your owned property.

MR. KLEIN: Okay.

MR. GRITCH: This is strictly for leased property.

MR. KLEIN: Thank you.

MR. KOFFEL: I think the other thing that came up in the workshop session is that if we do go down this path of recognizing state requirements, we may have to specify what those might be. It couldn't just be a generic reference to a state requirement since the state may have an archaic code that they're building to, and therefore it might be the state requirement provided state requirements are consistent with the 2012 edition of the IBC or something like that.

MR. SIEGEL: The federal law requires us to look at local requirements and offer local jurisdictions the right of entering the property to look at it. They never do because they don't have the money to do it. They don't pay a fee. They have tight budgets so they never do come in, but it says we have to look at local codes and make our own decision.

And in the past, we've always said we use the most or the more stringent or the most stringent requirements. For leased facilities, we might not be doing that.

MR. GRITCH: And that's the purpose of the study.

MR. SIEGEL: Yeah.

MR. POLAND: Okay. Other comments? All in favor of the motion?

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Motion carried. That's the first piece that we expanded on your

question, and the second piece is on a different issue, but it's still related to H-18. Greg.

DR. DEIERLEIN: An easier one. So I'll just read the motion, which is fully explanatory.

MR. GRITCH: Let's hope.

DR. DEIERLEIN: The more stringent requirement for limiting seismic drifts, Section 3.6 of H-18-8, was originally introduced in H-18 to reduce deformations and damage in buildings with flexible moment frames, which have traditionally been a preferred structural system in hospital facilities.

Over the past 15 years, a number of new systems have been introduced into building codes, for example, buckling restrained braced frames, steel plate shear walls, and others, that are inherently stiffer than moment frames and may not require the Section 3.6 provision for the building system to meet one-half of the code-specified drift limit.

In addition, changes to building code requirements over this time have tended to result in stiffer structures.

The Advisory Committee recommends that the VA undertake or commission a study to evaluate whether the more stringent limits should be maintained considering the added construction costs versus the improved seismic design and performance.

This study should be undertaken for common force resisting systems, including moment frames, buckling restrained braced frames, eccentric brace frames, concrete walls and other systems.

MR. POLAND: Okay. Got a second?

DR. MEJIA: Second.

[Motion made and seconded.]

MR. POLAND: All right. Questions.

MR. BANGA: The problem of the drift has been only for moment frames as we have understood and as we have found. We never had problems with shear walls or braced frames, not buckling braced frames, but normal braced with cross-bracing or K-bracing or V-bracing. For those buildings, we didn't, never had problems.

So we should probably have the motion restrict us to waive that requirement for moment frames.

MR. POLAND: Actually I think what we're going to end up with is we're only going to require it for moment frames, and we're not going to require it for any kind of braced system.

But as Greg pointed out yesterday, we're not sure about the buckling restrained braced systems because you can tune those systems to get the maximum code drift values like moment frames, and that's something that we want to avoid. So I think we need to look at the systems.

MR. BANGA: But the motion describes all systems. I see, I heard shear walls. I heard the regular braced frames also in that motion, isn't it?

DR. DEIERLEIN: Yeah. Well, I guess the provision as in H-18-8 right now basically says that any system has to meet the one-half of the normal code specified drift limits. So this motion is just asking to kind of reassess whether that's still appropriate.

I guess the point is that some systems will inherently, the wall systems, for example, will always just naturally be less than one-half of the code specified drift limit.

But Chris, when we talked about this issue yesterday, it was a concern because--

MR. POLAND: The moment frames, the buckling restrained braces and the eccentric brace frames because those are all yielding systems, and when we have a yielding system, you get out toward the drift limits, and this 50 percent drift is causing those systems to--is governing those systems and increasing the cost significantly, which in the eyes of the engineers is not, doesn't seem to be appropriate. And we're not sure.

DR. DEIERLEIN: Yeah.

MR. POLAND: We're trying to make sure that we have buildings that have the least amount of damage possible at the least cost. That's why we have these limitations about our systems.

MR. BANGA: Well, what I'm saying is that the drift has not been a problem for shear wall buildings, steel-plated buildings, or braced frames. That problem only exists when we use moment frames or especially now special moment frames.

MR. POLAND: Maybe what we should do is limit our motion to consider whether we want to exempt eccentric brace frames and buckling restrained braced frames from the drift requirement because those do come into play.

MR. SIEGEL: Well, it's hard for us to consider it. Isn't that advice we should ask from you?

DR. MEJIA: That's where we need a study; right?

MR. POLAND: Kris, you said that there was a study commissioned four or five years ago that looked at this situation. Maybe what we should do is get that study out and have us have a look at it and we can go from there.

MR. SIEGEL: And incidentally there's no reason why you could not add or subtract a resolution by a telephone conference in between times.

DR. DEIERLEIN: Is there a way just to table this motion for now and to ask for this report, and then we could--

MR. POLAND: Sure.

DR. DEIERLEIN: --come back and--

MR. POLAND: Uh-huh. We can do that.

DR. MEJIA: Can we rescind it?

MR. POLAND: Rescind what?

DR. MEJIA: The motion.

MR. POLAND: It hasn't been voted on.

MR. GRITCH: Well, if it hasn't even had a second.

DR. MEJIA: It did have a second.

MR. GRITCH: It did have a second.

MR. POLAND: Uh-huh.

DR. DEIERLEIN: Yeah. Otherwise we couldn't be talking about it.

MR. GRITCH: Oh, I'm sorry.

[Laughter.]

MR. POLAND: Well, if you like, you can move to table.

DR. DEIERLEIN: Yeah.

MR. POLAND: And if we get a second, we can vote on that, and then we can ask to have the other report sent.

DR. DEIERLEIN: Yeah, so I'd move that we table this motion and ask that the VA send the Advisory Committee the report that was done on this a few years ago on the issue of drift--a few years ago.

DR. MEJIA: Second.

MR. POLAND: Got a second.

[Motion passed and seconded.]

MR. BANGA: Yeah, that's--

MR. POLAND: Okay?

MR. BANGA: Yeah.

MR. POLAND: All those in favor?

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Okay. Motion carries.

Okay. We'll just take a couple minutes here to wait for him to come back.

[Pause while staff member leaves the room to check as to whether Ms. Fiotes will be coming to meet with the Advisory Committee.]

MR. SIEGEL: If you want to, we can do the date of the next meeting and all of that.

MR. BANGA: We can go over the--before your item, there is that--

MR. POLAND: We can just keep going. It's okay. Let's just keep going. All right.

All right. So I'm going to have us come back together, and let me do just a brief few comments about the revision and update of ASCE 41-13.

It is now published and available and we'd like to see that incorporated into H-18. We have a motion in that regard just to say 41-13 is the next generation of evaluation in retrofit guidelines for existing buildings. It's developed by ASCE under a consensus process. It combines ASCE 31 and 41 together, makes a number of changes that makes the document more usable, and also eliminates a number of the conflicts that were existing between the two documents.

It uses a different characterization for ground motion, which we find acceptable. It does a better job with the nonstructural elements and a new set of checklists and a number of technical improvements. So all of those things are good, and they're all going to serve us well in the VA because it will allow us to do a better job evaluating our buildings and really reduce the cost of the evaluation and retrofit in many cases.

So we have a motion related to ASCE 41.

DR. MEJIA: Yes, Chris. Incorporation of these new guidelines into H-18 will require a number of changes, and so the motion that I'm going to read is quite lengthy, almost as lengthy as some of the ones that have been put forth earlier.

MR. SIEGEL: He's not pointing fingers.

[Laughter.]

DR. DEIERLEIN: No naming--

DR. MEJIA: Let me begin with a motion. It reads as follows: The Committee recognizes the value of the VA H-18-8 design requirements in protecting VA's buildings against seismic hazards and believes that such value will be enhanced by continuing to update VA H-18-8 document to reflect current changes in national model codes or--and design guidelines.

The Committee also believes that in making reference to such codes or guidelines, it is appropriate to refer to date-specific editions of such codes or guidelines.

Accordingly, the Committee recommends that the H-18-8 document be revised as follows:

Change all references to ASCE 41 or ASCE 41-06 to ASCE 41-13 throughout the document.

Second, change all references to ASCE 31-02 to ASCE 41-13 throughout the document.

Next, change all references to ASCE 7 to ASCE 7-10 throughout the document.

Next, once the above changes are made, review the H-18-8 design requirements that reference ASCE 7-10 and ASCE 41-13 to check that such requirements remain applicable. If not, determine how such requirements should be modified.

Next, revise the table in current Section 1.12 of H-18-8 to update the values of short-period and one-second-period, S-sub-s and S-sub-1, to reflect the ASCE 7-10 values of those parameters.

Next, and final change, validate the exceptions made under current Section 4.1 of H-18-8 against the analogous requirements of ASCE 7-10 and ASCE 41-13 and remove those exceptions from Section 4.1 that are unnecessary or that are redundant with such requirements. That is with the requirements of 7-10.

MR. POLAND: Okay. Do I have a second to the motion?

MR. GRITCH: Second.

[Motion made and seconded.]

MR. POLAND: Questions? Asok.

MR. BANGA: Go ahead.

DR. GHOSH: Under the table map spectral accelerations, you have to have a footnote saying that for existing building retrofit values of 41-13 shall be applied.

DR. MEJIA: Yes, that is correct, and we thought that should be the subject of a separate motion, which we intend to make subsequently.

MR. POLAND: The table that he's referring here on 1.12 is the table that defines the seismicity level whether it's very high, high, moderate or--

DR. GHOSH: Oh, okay.

MR. LAU: You haven't gotten into the big table yet.

DR. GHOSH: Yeah, big table there.

MR. BANGA: You made references to 41-, to make it to 41-13 ASCE, to ASCE 13. What do we do about the IBC?

MR. POLAND: It stays the same.

DR. MEJIA: It stays--yes, unchanged.

MR. BANGA: Uh?

DR. MEJIA: It stays unchanged.

MR. POLAND: Is that the right answer?

DR. GHOSH: It should be dated.

MR. BANGA: Here we are saying every other place where at least in our previous motions, we've referred to latest editions, but now you are specifically mentioning those codes, ASCE 41, you are referring to 41-13.

DR. MEJIA: That's a good point, Kris.

MR. BANGA: So we should then IBC also, say IBC 2012?

DR. MEJIA: That's a good point, Kris. Yes, Mr. Chair, I think we should make, in addition to the motion, to add one line item to basically read as follows: change all references to IBC to IBC 2012 throughout the document.

MR. BANGA: One more question. You also mentioned about making revisions to Section 4.1. I didn't quite, we didn't quite catch it, what exactly you intend to do with Section 4.1?

DR. MEJIA: As discussed yesterday, some of the exceptions that are made in current Section 4.1 of H-18-8 may, in fact, become or be redundant with the provisions of ASCE 7-10 or ASCE 41-13. So the Committee recommends that these be reviewed.

MR. BANGA: With ASCE 7-10, not necessarily just eliminate these exemptions, but--

DR. MEJIA: Yeah, not necessarily--

MR. BANGA: Because these are exceptions. These are not provisions.

DR. MEJIA: Right.

MR. BANGA: These, we don't worry about these.

DR. MEJIA: But for simplicity and for clarity, it would be appropriate to take out of this list those exceptions that are unnecessary in light of 7-10 or that are redundant with those already in 7-10.

MR. BANGA: So if they are already covered there, we take them out from here; is that what you're saying?

MR. POLAND: Uh-huh. We need to look and see where the conflicts are. What was pointed out to us was that there are--that 41-13 and 7-10 have exceptions, and these exceptions are different than those, and they're not consistently different.

So we thought that you ought to look at those and see what the exceptions are, and if these exceptions are all covered in 7-10, we don't need to have this table in here.

MR. BANGA: Well, the table is here for practical reasons. The medical centers where we don't have all these sharp structural engineers over there, they just look at this, they call us for the non-seismic, oh, do we need help according to that--no, no, you look at that list. You don't need it.

But they are not that familiar with ASCE 7-10 and all that. So that's why this table is an additional help for the medical centers because this document is a lot more popular than--

DR. MEJIA: That is okay, Kris. I mean that would make the exceptions necessary. So the motion just says take out those that are either deemed unnecessary or redundant. So you wouldn't, if you think they are necessary in this document for practical application of the document--

MR. BANGA: So we review. If they're incorrect, we correct them, but not necessarily remove them?

MR. POLAND: Okay. That's fine.

DR. MEJIA: Correct.

MR. BANGA: Okay.

MR. POLAND: All right. Any other comments?

MR. SIEGEL: Well, then perhaps the word "redundant" should come out.

DR. MEJIA: Yes, I think because maybe you may want some redundancy for your practical use of the document.

MR. SIEGEL: Yeah, yeah.

DR. MEJIA: All right. I will agree with that, Chris.

MR. POLAND: Okay.

DR. MEJIA: Why don't we amend the--I will amend the motion to read in that last phrase, as follows, simply, "that are unnecessary," period.

[Motion amended.]

MR. BANGA: Okay.

MR. POLAND: Good. All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Motion carried.

Okay. We'll move on to the USGS update of special acceleration values in H-18-8. Asok, this is what you were just talking about.

DR. GHOSH: Yes.

MR. POLAND: And we have a recommendation. Lelio.

DR. MEJIA:

MR. MYERS: Yes, Mr. Chair. The motion is as follows: to reflect changes in the mapped values of seismic design parameters and to make Table 4 of H-18-8 applicable to new and existing buildings, the Committee recommends that the table be modified as follows:

One, revise the values of S-sub-s, and S-sub-1 to the corresponding values of those parameters in ASCE 7-10.

Add two columns to the table for the latitude and longitude applicable to each site.

Three, update the designation of seismicity to reflect the updated values of S-sub-s and S-sub-1 in Table 4, and the changes to the current Section 1.12 table

of H-18-12 [sic].

Add a note to Table 4 requiring that for existing buildings, reference be made to the requirements of ASCE 41-13 for the design values of S-sub-s and S-sub-1.

MR. POLAND: Okay. Good.

DR. GHOSH: Very good.

MR. POLAND: Any--got a motion. I need a second.

MR. KOFFEL: Second.

[Motion made and seconded.]

MR. POLAND: Any discussion? All those in favor say aye.

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Okay. The last thing we have on our agenda is the clarification of earlier motion regarding the FCA classifications, and we didn't get a chance to go over this in detail yesterday. So, Juan, you want to take us through this?

MR. ARCHILLA: Sure. Yesterday late I gave you a copy of minutes from I think it was two meetings ago, or maybe--I don't remember what year--

DR. GHOSH: 2010.

MR. ARCHILLA: 2010--that basically--and we just wanted to--internal discussions here--we were unclear if there was some discussions whether this is implemented correctly, and we just wanted to verify that in terms of the grading for differentiating between a grade of A for buildings constructed or retrofitted using H-18 with the 2002 or later edition--that's what our FCA guidelines say--given a grade of B, if it's constructed or retrofitted in accordance with H-18-8 editions, and between 1978 and 2001 editions. Essentially that's what we wanted to verify.

MR. POLAND: So just for a little bit of background on this, back in 2011, I believe, we established an A through F grading system for buildings and asked that the Facility Condition Assessment as they go through assign those letter grades, and we gave criteria for that, and this is a question about distinguishing between criteria A and B.

As I recall, we had given a grade letter A, which mean that the building--the building was able to be occupied and fully usable after an earthquake to any building that had been built or retrofit to our guidelines in 2002 or later. And that's because in 2002, we made the switch in our guidelines to the newest

version, which is what we're working on now.

Before that, we had a number of things, like the lack of detailing that we talked about earlier, and so that in the guidelines from '78 to 2001, there were certain things about our buildings that may not allow them to be fully functional and operational. So we wanted to give those a letter B.

And then we had designated letters C, D and E. And I believe your question is whether those dates are correct?

MR. ARCHILLA: Correct. Yeah. And whether they line up with the Grade A and B basically?

MR. POLAND: Yeah, and it's my opinion that that's still the case, and that we can, you know, in the spirit of what we're doing here, we can count on that.

MR. ARCHILLA: Okay.

MR. POLAND: Any other comments about that, questions about that? One thing I would like to do because I honestly lost track that we had this grading system, is that it would be good at each of our advisory meetings if you could just give us a report out about how we're doing in terms of the letter grades.

I believe in the FCA database, you could query it and ask how many A, B, C, Ds and Es and Fs do we have, and then compare that to whether buildings are critical, essential, or ancillary.

Buildings that are critical should be A; buildings that are essential should be B; and buildings that are ancillary should be C or D.

DR. GHOSH: No, no. No, follow the recommendations and the guidelines. Extreme high risk is D.

MR. POLAND: What is C? You're right. I did say that wrong about B.

DR. GHOSH: So it starts from here. Juan?

MR. ARCHILLA: Yes.

DR. GHOSH: The page before.

MR. ARCHILLA: D is high risk.

DR. GHOSH: Extreme high risk.

MR. ARCHILLA: F is extreme high risk.

DR. GHOSH: Oh, F is extreme high risk.

MR. ARCHILLA: D was this gray area where they would do an evaluation using

previously 31-03 which we would update to 41.

MR. POLAND: It's right here. It says that C, C is a building which was designed and built before '78 may be assigned a grade of C if the building is capable of resisting seismic forces according to present H-18-8, which means it's been through evaluation.

DR. GHOSH: Correct. We have to, only in that case, we evaluate.

MR. POLAND: We can use C. Otherwise they're D or F. But I thought it would be good for us to be able to see each time how our inventory looks compared to this grading system as we learn about it. So I suppose what we should do is in the FCA, there ought to be a target category so we know if it's supposed to be A, B or C, so we know how many buildings have achieved the category.

It was a way of trying to get our--since we've done so much work, of trying to understand how close we're getting to our goal.

MR. ARCHILLA: Is that a motion or will that be a motion to--

MR. POLAND: Yeah. I'm just going to put that together right now.

MR. ARCHILLA: Okay.

MR. POLAND: I need a motion. Can you do that?

DR. MEJIA: Sure. Let me do that. I move that VA report to the Committee at its regular meetings on VA's progress of assigning seismic ratings A to F in accordance with the motion made in 2013 during its regular condition assessments, facility condition assessments.

MR. ARCHILLA: I don't know if 2013 is the right--

DR. GHOSH: Oh, this recommendation was made in 2010.

DR. MEJIA: I'm sorry. Excuse me. Amend that to 2010.

MR. ARCHILLA: Or the second page of that, Chris, shows the date on the top; is that right? 2010?

DR. MEJIA: It's 2010.

MR. ARCHILLA: Okay.

DR. MEJIA: Amend the motion to read 2010 instead of 2013.

MR. POLAND: Okay. Do I have a second?

DR. DEIERLEIN: Second.

[Motion made and seconded.]

MR. POLAND: Any questions?

MR. BANGA: Minor suggestion, that facility condition assessment should come earlier where you talked about give to the Committee those gradations A, B, C, D, that facility condition assessment, you have the wording almost at the end of the paragraph. It should be on the earlier part, the first part. In the facility condition assessment, the grading system should be reported to--

DR. MEJIA: I agree. That's a good comment.

MR. BANGA: Yeah, just--

DR. MEJIA: Can we let the record reflect that so I don't have to--

MR. POLAND: Yes.

DR. MEJIA: Because I didn't memorize what I said.

MR. BANGA: No, that's--

MR. ARCHILLA: Can I--we just noticed one thing as we were looking in this? For the C, which is kind of the vague areas, where they do an evaluation, limited evaluation, previously we, the guideline was to do a 31-03 evaluation. So obviously, we would update it to 41.

DR. GHOSH: That is a mistake itself. That is not 31-03; right?

MR. POLAND: Excuse me?

DR. GHOSH: We are going to change this ACES 31 whatever to 41-13.

MR. POLAND: It should be 41-13. The tier one and tier two and tier three are still the same.

DR. GHOSH: Yes.

DR. MEJIA: Yes. The motion of 2010 would apply as it was stated.

MR. ARCHILLA: Right, just update the edition.

DR. MEJIA: Yes, because it's a later edition of H-18-8.

MR. POLAND: Okay. Any other comments? All those in favor?

[Chorus of ayes.]

MR. POLAND: Opposed?

[No response.]

MR. POLAND: Motion carried.

Okay. Is there any other new business we need to consider?

DR. GHOSH: I have a question.

MR. POLAND: Yes.

DR. GHOSH: We are in the process of retrofitting West Los Angeles buildings. There are 11 buildings. We have done one already, Building 209, and now we're doing 205 and 208.

So in the process of designing the retrofit of 209, we had to do material inspections, and we did not follow the complete procedure of material inspection to use the factor one--what is that factor?

MR. POLAND: Knowledge factor.

DR. GHOSH: Knowledge factor one, but we used knowledge factor one. We didn't do enough experiments, enough tests. When they designed 205 and 208, we understood the mistake, and changed the knowledge factor from one to .75, and we are proceeding until we do more tests to justify using knowledge factor one.

So what should we do with Building 209? It's done. The construction is done.

MR. POLAND: So I have to ask you if this is a Degenkolb project?

DR. GHOSH: No, it's not.

MR. POLAND: Okay. We're safe.

[Laughter.]

DR. GHOSH: Degenkolb was peer-reviewed--

[Laughter.]

DR. MEJIA: I should ask is it a URS project?

DR. GHOSH: No.

MR. GRITCH: Is it an HKS project?

MR. BANGA: It's HDR.

DR. GHOSH: It's HDR.

MR. BANGA: I think it is HDR.

DR. GHOSH: No, HDR--peer-reviewer--the designer is--

MR. POLAND: John A. Martin?

DR. GHOSH: No.

MR. BANGA: Oh, Nabih Youssef.

DR. GHOSH: Nabih Youssef.

MR. POLAND: Nabih Youssef. Okay. All right. What do we do with 209?

DR. GHOSH: Yeah.

MR. POLAND: Do you have any idea if it makes a significant difference because sometimes that knowledge factor doesn't really make a significant difference, depending on what you're doing?

DR. GHOSH: After we detected this knowledge factor issue, he did not do any additional analysis of 209 because it would require more money; right. But he--

MR. SIEGEL: Can you discuss this a little bit in layman's terms? Seriously.

DR. GHOSH: In the design, we use factors, seismic design we use--so one of the factors is called knowledge factor.

MR. SIEGEL: Knowledge?

DR. GHOSH: Knowledge factor. How much do you know about the materials in the existing building? So more analysis, more tests we do, we become confident. That knowledge factor is the level of confidence based on the number of tests that we perform.

MR. SIEGEL: Okay.

DR. GHOSH: So for Building 209, we have not done enough tests to justify usage of knowledge factor one. But we use knowledge factor one. We should have used knowledge factor .75.

MR. POLAND: Is it a reinforced concrete building?

DR. GHOSH: Yeah.

MR. POLAND: Concrete shear wall?

DR. GHOSH: Concrete shear.

MR. POLAND: Concrete shear wall building. So we didn't test enough concrete

to make sure we knew exactly what it was. So let's say the default value is 3,000 pounds. So you couldn't use 3,000. You'd have to use 75 percent of 3,000 pounds, which would be whatever that is.

MR. BANGA: 2,250.

MR. POLAND: 2,250 pounds. Now in reinforced concrete shear wall, that number is not the most significant number in determining the strength of the wall. The most significant number is the amount of steel.

DR. GHOSH: Steel also.

MR. POLAND: The steel because it's two root F prime C so it's the square root of the difference.

DR. GHOSH: Yeah.

MR. POLAND: Plus the area steel times the yield strength of the steel. So most of the strength is in the steel. So that's why I asked if it made, if it was going to really make any difference or not.

DR. GHOSH: That party did not--I mean he did not want to do the analysis again because it would require additional fees.

MR. SIEGEL: Where is that--what is the status of that?

DR. GHOSH: Oh, that building has been constructed.

MR. SIEGEL: Excuse me?

MR. BANGA: You mean retrofitted?

DR. GHOSH: That building has been constructed.

MR. BANGA: Constructed or retrofitted?

MR. SIEGEL: It was constructed already.

DR. GHOSH: Retrofitted. Construction of the retrofit is complete.

MR. BANGA: Yeah. The testing material is such an ambiguous thing.

DR. GHOSH: Yeah.

MR. BANGA: If you follow the guidelines, quote "guidelines" by words, the number of tests you need is humongous. So we have had another fight for another project which is Reno.

DR. GHOSH: Yeah.

MR. BANGA: And the cost was coming hundreds of thousands of dollars for that-

DR. GHOSH: 250,000.

MR. BANGA: Uh?

DR. GHOSH: 243,000.

MR. BANGA: Yeah, for material testing. We kept on saying that whatever the engineering judgment you got already, let's say by the book you needed 50 tests, but by 40 tests, you found out that the concrete strength is 5,000 square--5,000 psi, do you need more tests?

MR. POLAND: I'm very surprised that you can spent \$150,000 testing concrete. I don't understand that.

MR. BANGA: No, we did not. The VA--

MR. POLAND: No, I'm saying, I don't even understand somebody would tell you it would cost that much.

MR. BANGA: Because the building has seven different parts to that building. It is seven segments, one building. But obviously seven segment buildings, if you follow by the book, each segment we did all those number of tests.

DR. GHOSH: That estimate came from--

MR. BANGA: Yeah, we fought and fought. I think we brought the cost--

DR. MEJIA: I may have to leave the room after all.

MR. POLAND: Well, if they're talking about Reno, I'm out of luck because Reno is our project. Reno is a Degenkolb project. So you know what? You're up to bat then.

[Laughter.]

MR. POLAND: Before I leave the room--

MR. SIEGEL: Is 209 occupied?

DR. GHOSH: It's going to be occupied in July.

DR. MEJIA: The issue is not whether--

MR. SIEGEL: Could a situation exist that those people would be in danger?

DR. GHOSH: That's what I'm asking the chair.

MR. POLAND: Well, you know, the thing that I'm looking for is I want to know--I know that 41-13 changed the discussion about material testing. Okay.

DR. GHOSH: If you need the details, I can bring the details.

MR. POLAND: And it changed the knowledge factor.

DR. GHOSH: Oh, okay.

MR. POLAND: What you need to do is we need to go back and look and see. See, we need some--we need some justification to waive the requirement because you can just waive the requirement if you want. You're the jurisdiction having the authority. As the building official, if you say it doesn't matter, it doesn't matter.

DR. GHOSH: So that's what--

MR. POLAND: But I'll tell you, I have, just to say, when this inspection and testing requirements came through for the existing buildings, it was very much more than we had ever done before, but the people who understand about material strength have demonstrated that there's a huge variability in what the strengths are.

And if you have seven different buildings, for instance, in Reno, and they were built at different times, you really don't know.

DR. GHOSH: No. Sure.

MR. POLAND: Okay. The other thing is when we build a new building, think about how often we test the concrete--

DR. GHOSH: Yeah.

MR. POLAND: --when we're pouring a job.

DR. GHOSH: Oh, yeah.

MR. POLAND: Every truck is inspected.

DR. GHOSH: Many times.

MR. POLAND: Every truck is inspected.

DR. GHOSH: Yeah.

MR. POLAND: And we pull a cylinder every few trucks; okay. And we test all those things to make sure that we know what we have.

DR. GHOSH: Yes.

MR. POLAND: So if we have an existing building, and it matters--that's the whole big thing is whether it matters or not--then we need to pay very close attention to this, and there are supposed to be rules in here that allow you to avoid having to do the unnecessary tests.

Now, I'm a little disappointed because I'm only going on what you said that your engineer didn't want to talk about this, doesn't want to do any more calculations because the calculations that I said to you were very simple.

DR. GHOSH: Yeah, he was trying to justify in other ways that it's fine and should not make a difference and all these things.

MR. POLAND: Well, that's--I think--

DR. GHOSH: Before I ask him to do anything, I'd like to pass it to the Committee.

DR. MEJIA: Chris, is this something that the Committee could really provide an informed opinion just on the basis of this limited information or something that should be--

DR. GHOSH: No, no. I'll give you the details.

DR. MEJIA: --recommended for an additional review.

MR. POLAND: Since the Reno project is involved, I'm going to leave. I'm going to recuse myself and--

DR. GHOSH: No, no, no. No, this question is regarding 209 only.

MR. SIEGEL: We're talking about Los Angeles.

MR. POLAND: No, no. You raised a question about Reno also.

MR. BANGA: No, no.

DR. GHOSH: No.

MR. BANGA: Reno was raised second.

DR. GHOSH: No, this is regarding 209.

MR. POLAND: The problem that I have is that there's no way that we can tell you it's okay or it's not okay based on the information that you've given us.

DR. GHOSH: No, I give you the detailed information. I'll bring you the material report. I have it ready here. If you want, I can bring it right now because it's on my table now.

DR. MEJIA: Yeah, I understand--I may have to recuse myself because URS does

this kind of thing as well, but I'm not sure we, it seems to be a more involved question than we have time to provide an answer for, number one.

And so I'm wondering if it requires a more in-depth review by, you know, the VA commissioning another party to review that.

DR. GHOSH: Commissioning, yeah.

DR. MEJIA: To review that issue. That's my thinking, Mr. Chair.

MR. POLAND: I don't think that there's any concern that the people in that building are at risk. My opinion. But that needs to be validated, and I think what you're suggesting is a good idea, that you really ought to have a peer reviewer brought in and look at that and help you make a decision about whether it matters or not.

I would be surprised if you would do anything different to the building, whether you used the knowledge factor of one or .75.

The other thing you can do is you can go ahead and you can do a little bit more material testing if that's what it takes.

DR. GHOSH: They did some more, but they didn't go all the way to the requirement.

MR. POLAND: Well, you could, I mean depending on the--depending on how much it matters because I really believe if I could find it in here, I really believe this says that it applies to areas where it matters. Those are my words now.

And if it doesn't make any difference, then you don't have to worry about it.

DR. GHOSH: Right. A common sense discussion. When you do material tests, you are supposed to do 65 for concrete. Let's say 65 total from three floors for being column slab, you have to take three, three and three and something like that.

But once you take one, one, one, and you see there is not much variability, so you apply common sense that it doesn't matter. Why do you take three, three, three? So you use common sense.

MR. POLAND: Well, I mean the argument is, is when you pour concrete, if you're not careful, you could have bad batches.

DR. GHOSH: Yeah.

MR. POLAND: And you can have hot days, and you can have days when this truck gets stuck in traffic and they put extra water in when they're not supposed to so they can pour the concrete, and so you end up with bad concrete.

Now, if it happens that the bad concrete is in a concrete moment frame, and it's in a beam column joint, and it happens to be the most important beam column

joint in the building, it could make a big difference.

DR. GHOSH: Right.

MR. POLAND: Now, if you've got a building that's all concrete and all concrete shear wall, then the strength of the concrete doesn't matter if it's 2,000 or 3,000 because there's so much of it. What really counts is whether the steel is 40 or 60. Then it doesn't matter.

DR. GHOSH: Also this building survived a major earthquake 1989. What is that?

MR. POLAND: 1994?

DR. GHOSH: 1989.

MR. BANGA: Loma Prieta?

DR. GHOSH: Loma Prieta.

DR. DEIERLEIN: That was up in San Francisco.

MR. POLAND: You're in West Los Angeles, aren't you?

DR. GHOSH: It was Los Angeles.

MR. POLAND: 1994.

DR. GHOSH: 1994.

MR. POLAND: No, it's the '94 earthquake.

DR. MEJIA: Oh, Northridge.

DR. GHOSH: So it survived that earthquake.

MR. BANGA: Yeah.

MR. POLAND: If that was good enough, then we shouldn't have retrofitted the building.

[Laughter.]

MR. POLAND: Okay.

MR. SIEGEL: The building was retrofitted also to change the occupancy.

DR. GHOSH: Yeah, change the occupancy. Last time--

MR. POLAND: I'll be glad to stay after the meeting and talk to you about this, but I don't think our Committee can make any determination, and all I can do is

to make some suggestions about how you might approach this.

MR. BANGA: Okay. Yeah. Yeah.

DR. GHOSH: Yeah.

MR. POLAND: Is that okay?

MR. BANGA: Good.

MR. POLAND: All right. Okay. Anything else we need to discuss?

MR. SIEGEL: Is there any reason to take this discussion out of the record?

MR. POLAND: I would be happy to have this discussion taken out of the record myself. So who's our expert in FACA requirements? Can we do that?

MR. SIEGEL: You're the Committee. It's up to you.

MR. BANGA: You want to talk about that, you mean that requirement of--

MR. POLAND: Well, we were asked a question, and we had some discussion, and we drew no conclusions. I mean it's okay. We're supposed to document what we talk about.

MR. BANGA: Oh, you mean yesterday's?

MR. POLAND: Just right now. Just right now, just this conversation that we just had about this question that was brought up.

MR. BANGA: Oh, okay.

MR. POLAND: All right. Let's--I don't believe we have any assignment of new activities. We have offered to assist you in a number of ways.

DR. GHOSH: I think there is a motion missing.

MR. POLAND: Which one is that?

DR. GHOSH: In regard to the, in line with motion six.

MR. GRITCH: Viscous dampers.

DR. GHOSH: Viscous dampers.

DR. DEIERLEIN: You mean whether we agree with your response or?

MR. POLAND: Okay. Motion six.

DR. MEJIA: This is 2013 motion six.

MR. POLAND: Use of viscous dampers.

MR. SIEGEL: That's right.

MR. POLAND: You know I don't know that there's anything--

DR. GHOSH: This is fine then.

DR. DEIERLEIN: Yeah.

MR. SIEGEL: Hadn't you wanted to take out the word "viscous"?

DR. DEIERLEIN: Well, it's proposed to take it out, which I think we think is fine. I don't know if we need a motion to confirm that.

MR. POLAND: I mean we made a motion and your response was you're going to do what we asked you to do. So I think we're okay.

DR. GHOSH: All right.

MR. POLAND: Kris?

MR. BANGA: Yeah. That's okay.

DR. GHOSH: That's fine.

MR. POLAND: Okay.

MR. BANGA: Yeah.

MR. POLAND: All right. So the date of the next meeting. We'll be meeting in a year again, Kris?

MR. BANGA: Yeah.

DR. DEIERLEIN: Chris, one thing next year, I'm probably going to be on till about the end of June on sabbatic in New Zealand. So it will be tough for me to get here before the end of June.

MR. BANGA: Before end of June, you--

MR. GRITCH: What if we start the meeting at ten?

[Laughter.]

MR. BANGA: You will be busy until the end of June?

DR. DEIERLEIN: Well, unless you want to fly me here from New Zealand.

MR. SIEGEL: When do you for leave New Zealand?

DR. DEIERLEIN: Probably in January sometime.

MR. SIEGEL: Really.

DR. DEIERLEIN: I'll be out for six months.

MR. BANGA: Oh.

MR. GRITCH: Any chance we could go there?

[Laughter.]

MR. SIEGEL: Kris, there is no reason why we can't meet in July?

MR. BANGA: No, no problem. That's fine.

MR. POLAND: You will be back by July?

DR. DEIERLEIN: Well, I think like the last week of June, which is like Thursday-Friday is the 25th or 26th would probably be okay.

MR. POLAND: Probably be okay.

MR. KOFFEL: The week of June 22 is the NFPA meeting anyway. So that would be a challenging week.

MR. SIEGEL: Well, why not make it in something like 10th or 11th of July?

MR. KOFFEL: Week of July 12 is the ASHE conference.

MR. SIEGEL: 10th and 11th.

DR. MEJIA: 9th and 10th.

MR. KOFFEL: 10th-11th is Friday-Saturday.

MR. SIEGEL: Oh, sorry. I had the wrong year. Sorry.

MR. GRITCH: 2015; right?

DR. DEIERLEIN: Yeah.

MR. POLAND: 9 and 10; does that work?

MR. GRITCH: Of July?

DR. MEJIA: Works for me.

DR. DEIERLEIN: Yeah.

MR. POLAND: Okay. Let's tentatively set it for July 9-10, 2015.

MR. KOFFEL: In New Zealand.

[Laughter.]

MR. SIEGEL: Well, that's another idea. We could meet in New Zealand.

DR. DEIERLEIN: Lots of things to learn about earthquakes.

MR. POLAND: Okay. I think that wraps up our meeting. Is there anything else we need to consider?

MR. SIEGEL: Fred, may I ask you to make one last trip to see whether Stella can join us?

[Whereupon, a short break was taken.]

MS. FIOTES: Hello. I apologize. I was planning to come earlier, but my previous meetings ran over.

MR. SIEGEL: Please sit here.

MS. FIOTES: Okay. So you're wrapping up. Good morning. I understand you're nearly at the end of your day-and-a-half or--

MR. POLAND: We're at the end.

MS. FIOTES: You are at the end. I am the end. And you want to get out of here so--

[Laughter.]

MS. FIOTES: Well, I just wanted to say thank you again for the hard work you've put in on this Committee for us. It's very valuable and critical to our endeavors and our challenges, and Lloyd just always praises the fact that he has you and the fact that you are always so willing to contribute and participate and help so I really appreciate that.

So what was the focus of this session, may I ask?

MR. POLAND: Well, as you know--absolutely--as you know, we come together once a year and bring our expertise.

MS. FIOTES: Right.

MR. POLAND: And have an extremely important role to fill for you in providing safe facilities mostly relating to seismic and to fire, and going through the process, because it's an emerging field, and things are constantly changing, and this time we had two significant updates to the standards that we follow.

And so there was--

MR. SIEGEL: Hot off the presses.

MS. FIOTES: Wow, literally.

MR. POLAND: That's not the right one, but--

[Laughter.]

MR. POLAND: This one, ASCE standard on evaluation and retrofitting existing buildings, and then there is a new standard out on the design of new buildings, and so we had conversation about what that meant to us and how we needed to alter our programs.

The good news is that our programs are only, are getting better, and the amount of work that's needed to be done in many cases is being reduced by the new knowledge that we have.

MS. FIOTES: Really?

MR. POLAND: Yeah. So--

MS. FIOTES: I saw this and I thought dollars, more dollars.

[Laughter.]

MR. POLAND: The thing is it gives us more guidance in how to study buildings very carefully so we can really figure out the ones that--

MS. FIOTES: So we're not overfixing the problem.

MR. POLAND: So we're not overfixing the problem. That's really right at the heart of it. So that's one of the tasks that we're involved with is making sure that we're taking full advantage of all of these standards, and, of course, the VA has been out in front of the industry really in the work that's being done in fixing their new--their existing buildings and constructing new buildings. We want to stay at that place.

The other thing is that we continue to look at the instrumentation program and what that means to us, and there's two things that we want to learn from the instrumentation program. The VA has invested a lot of money in instrumenting buildings.

One is the need to better understand how our buildings behave in a major earthquake, and so we have lots of instruments in very special large buildings, but also to understand what condition they're in immediately after the earthquake so we can determine if they need to be evacuated or if we can keep the patients in the buildings because obviously for many of our patients, it would be better if they were kept where they are as long as they're safe.

So we had a good long discussion and made some recommendations about how to continue to implement those two programs, and that's a very important piece of what's going on.

Again, it's leading the industry in that area, but it's very important for us to be able to do that.

The other area that we talked about was in thinking about the existing building inventory because we do have a lot of buildings out there that don't meet the standards, and we're pretty much getting through and have our arms around the first set, and so we've been talking about how to determine what the next set of buildings are that we ought to be paying attention to and retrofitting.

And Greg is going to say a few words about how that went.

MS. FIOTES: Does that tie in with our--

MR. SIEGEL: FCA.

MS. FIOTES: EHR, the extremely high risk?

MR. SIEGEL: Yeah, yeah.

DR. DEIERLEIN: Yeah. Yes, so I guess the one thing we learned again, in the extremely high risk, it sounds like most of the buildings in that category are taken care of either by demolition or they've been evaluated and if necessary through retrofitting things.

So the thought is to go to the next would be to the high risk category, and one thing we pointed out, when the high risk category was established some years ago, actually at a recommendation of this Committee back in 2003, before I was here, was that in creating a high risk category to maybe not worry about buildings that were in moderate to low seismicity.

I think subsequent to that, a few years ago, the HAZUS study that was done as part of this group raised, for example, a large hospital in Boston that might have been one of those that would have been exempted from getting into the high risk category.

So one of the recommendations we made this time is that before getting into the high risk category to go back to the buildings that were exempt from that previously from consideration that were basically in the moderate to low risk, to look in the low seismic hazard regions and to use kind of this rating system that was developed and employed to create those categories originally, to screen back through the buildings that were previously exempt to see if any of those because of the--even if they're in low seismicity, because of the vulnerability of the building combined with high occupancy, whether those should be bumped up into that high risk category?

MS. FIOTES: So even though the probability is low, the condition of the building or the occupancy could make it so catastrophic that it pushes it up.

DR. DEIERLEIN: Yeah, the risk, the other half of the risk is high.

DR. GHOSH: Yeah.

DR. DEIERLEIN: To push that up.

MR. SIEGEL: And there is a very good example of that at Brockton, that really using this other methodology called HAZUS would bubble it up to number IV.

DR. DEIERLEIN: And we're kind of cognizant of the fact that these investigations that we do recommend, you know, could be very time consuming and things. So I think we had a lot of discussions that say I think we all understand the issues and to do this judiciously, to kind of--there's about 80 buildings that are in this kind of moderate to low risk now, to go through and say which of those 80 that were pushed back there from being exempt should be kind of potentially reelevated back up and do any of those warrant study?

So I think that was one--

MS. FIOTES: Oh, sounds like a lot.

MR. POLAND: It is, and it is, as you know, the number of buildings that we need to eventually worry about is a large number, but we have to do it in a methodical way, and we have to do it in a way that we can afford.

And so this next step is an important next step. We want to make sure that we're continuing to tackle the buildings in an orderly manner, and it's just going to be a long time. But that's okay. We just keep working our way through it.

MS. FIOTES: Right.

MR. POLAND: And that's what this next study, and we continue to work with your team on how to prioritize those or move forward, and certainly appreciate your support and the Secretary's support and everyone's support in continuing to provide seismically safe buildings because our goal in the end is to make sure that our buildings are safe and our patients can stay inside and can be properly cared for after any earthquake that's going to occur during the lifetime of those buildings.

MS. FIOTES: That is a good ambitious goal.

MR. POLAND: That's it. That's an ambitious goal. We're just chipping away at it, you know, and we're making great progress, and I don't mind saying at all that I really think that as an organization that owns a lot of buildings, maybe more buildings than almost anybody else, you're making more progress than anybody else out there.

MS. FIOTES: Well, that's good to hear.

MR. POLAND: So that's good to hear.

MS. FIOTES: We also have possibly one of the more vulnerable populations at that type of facilities that we own so it is critical to us.

MR. POLAND: So we are very pleased, as always, to serve the Veterans Administration and to work with this extraordinary team that you have here.

MS. FIOTES: Thank you.

MR. POLAND: You know we all serve in various capacities with various organizations, and I think I can speak for the others, that Lloyd and Kris and all the guys are very, very receptive to the conversations that we have, very open, and implement what we have to say and help us understand what works or what doesn't work, understand the intricacies of how the various projects work.

So we thank you for that, too.

MS. FIOTES: Great. Well, thank you very much, and, yeah, thank you for your time and your commitment to this. It's very important to us. We really appreciate it.

MR. POLAND: Okay.

MS. FIOTES: With that, I will let you close and take your place back, I guess. Thank you very much.

MR. POLAND: Okay. If there is nothing else--

MR. SIEGEL: Well, I would like to thank you all very, very, very much for the time you spend on this. It really is extraordinarily useful to us and to the veterans we serve, and it really is a high calling, and we truly, truly appreciate it.

MR. POLAND: Okay. Thank you.

DR. MEJIA: Our pleasure. Thank you, Lloyd. Our pleasure.

MR. BANGA: I echo the same words, my personal thanks to all of you.

MR. SIEGEL: And the only thing I can finally say is think of me when you're drinking all those wines.

[Laughter.]

MR. POLAND: Okay. We're adjourned. Thank you very much.

[Whereupon, at 12:19 p.m., the Advisory Committee was adjourned.]