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**NUCLEAR REGULATORY COMMISSION**

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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10 CFR 2.206 PETITION REVIEW BOARD (PRB)

CONFERENCE CALL

RE

SEISMIC CONCERNS AT COLUMBIA GENERATING STATION

(G20130776)

+ + + + +

TUESDAY

FEBRUARY 4, 2014

+ + + + +

The conference call was held, Joe Gitter,  
Chairperson of the Petition Review Board, presiding.

PETITIONER: CHARLES K. JOHNSON

PETITION REVIEW BOARD MEMBERS

JOE GIITTER, Director, Division of Risk  
Assessment, NRR

FRED LYON, Petition Manager for 2.206 petition

MERRILEE BANIC, Petition Coordinator

YONG LI, NRR/DE/EMCB

MICHAEL MARKLEY, NRR

SERITA SANDERS, NRR

DAVID SULKOWSKY, OGC

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FACILITATOR:

BOB HAGAR

NRC REGION IV

DAN BRADLEY, Resident Inspector

JEREMY GROOM, Senior Resident Inspector

ALSO PRESENT:

DON GREGOIRE, Energy Northwest

NANCY **MATELA** , Alliance for Democracy

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

1:09 p.m.

1  
2  
3 MR. HAGAR: Let's get started. And we've  
4 done a few introductions to get started, but we'll do  
5 more complete introductions in just a moment. Again,  
6 my name is Bob Hagar, and I'm the facilitator for this  
7 meeting. And my role is to ensure the meeting goes  
8 smoothly and to make sure that everybody who has  
9 something to say in this meeting has an opportunity to  
10 say it without being interrupted.

11 And I want to remind everybody and want to  
12 emphasize that the purpose of today's meeting is to  
13 allow the petitioners from the Oregon and Washington  
14 Physicians for Social Responsibility to address the  
15 NRC's Petition Review Board regarding 10 CFR 2.206  
16 petition that was dated October 31st, 2013. And in  
17 that petition, there was actually a letter. The  
18 petitioners asked the NRC to take enforcement-related  
19 action against Energy Northwest, the licensee for the  
20 Columbia Generating Station.

21 Now, when I talk about the Petition Review  
22 Board in this meeting, I may mention the PRB and other  
23 speakers may do the same. So if we do that, and we  
24 say PRB, we're just talking about the Petition Review  
25 Board.

1           Now, this meeting is scheduled for one  
2 hour, and it's being recorded, I think as everybody  
3 recognizes, by the NRC Operations Center. And it will  
4 be transcribed by a court reporter, and the resulting  
5 transcript will become a supplement to the petition.  
6 And before they file the transcript in ADAMS, which is  
7 the NRC's document library, the Petition Review Board  
8 will review it to ensure it doesn't contain any  
9 allegations or sensitive information.

10           But, now, in order to produce a complete  
11 and accurate transcript of this meeting, we have to  
12 set some ground rules. First, everyone, please turn  
13 off or mute your electronic devices if you're going to  
14 speak. And everyone who is not speaking should mute  
15 their phones, so we don't hear background noise on the  
16 line. And if your phone doesn't have a mute button,  
17 then you can mute it by pressing the key \*6 and then  
18 you can unmute it by pressing \*6 again.

19           Another ground rule is that, when you do  
20 speak, let's ensure that only one person speaks at a  
21 time. And you've got to be close enough to the phone  
22 and speak clearly and loudly to ensure that your voice  
23 is recorded. And, also, the first time you speak,  
24 please again state your name for the record so that  
25 the person producing the transcript will have no doubt

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1 about who's speaking.

2 So now let's take a minute and introduce  
3 the meeting participants. Early on, we went through  
4 the speakers for the court reporter. But now I want  
5 to make sure we introduce all of the participants that  
6 are on the line, and we'll do it in turn. And I've  
7 introduced myself twice already, so I don't need to do  
8 it again. But let's do, first, the NRC participants  
9 that are at Headquarters in the room with Fred and  
10 Joe. Could you please, let's introduce everybody,  
11 even if they're not going to speak. And what I'd like  
12 is your name, your position, and the organization you  
13 represent.

14 MR. GIITTER: Okay. My name is Joseph  
15 Giitter. I'm the Chairman of the PRB, and my position  
16 is Division Director for the Division of Risk  
17 Assessment in the Office of Nuclear Reactor Regulation  
18 at the NRC.

19 MR. LYON: This is Fred Lyon. I am the  
20 Petition Manager, and I am also a Project Manager in  
21 the Division of Operating Reactor Licensing in the  
22 Office of Nuclear Reactor Regulation of the NRC.

23 MS. BANIC: Lee Banic, Petition  
24 Coordinator, NRR.

25 MR. CYLKOWSKI: This is David Cylkowski.

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1 I'm an attorney with the Office of General Counsel in  
2 the NRC and serving as legal advisor to the PRB.

3 MR. MARKLEY: Mike Markley. I'm the Chief  
4 of Licensing in the Division of Operator Reactor  
5 Licensing for the Columbia Station, also with Nuclear  
6 Reactor Regulation.

7 MR. LI: My name is Yong Li. I'm an NRC  
8 seismologist.

9 MR. LYON: And that's everyone here, Bob.

10 MR. HAGAR: Thank you. Now could we have  
11 the NRC participants in the Columbia resident  
12 inspector office introduce themselves?

13 MR. GROOM: Yes. This is Jeremy Groom.  
14 I'm from NRC Region IV. I'm the Senior Resident  
15 Inspector at Columbia Generating Station.

16 MR. BRADLEY: I'm Dan Bradley, Resident  
17 Inspector, NRC, at Columbia Generating Station.

18 MR. HAGAR: All right. Next, are there  
19 any other participants in the Region IV office or  
20 elsewhere? Please speak up now.

21 MS. SANDERS: What do you mean by  
22 elsewhere? Region IV participants outside of the  
23 Region IV office or NRC --

24 MR. HAGAR: NRC personnel that are not  
25 with Fred and Joe and that group or are not at the

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1 Columbia resident inspector office, and that would be  
2 you, Serita.

3 MS. SANDERS: Okay. Serita Sanders. I'm  
4 the back up to petition coordinator in the Generic  
5 Communications Branch.

6 MR. HAGAR: All right. And are there any  
7 other NRC participants who have not yet introduced  
8 themselves? All right. Then now could we have the  
9 representatives for Entergy Northwest, the licensee  
10 for Columbia Generating Station, introduce yourselves,  
11 please?

12 MR. GREGOIRE: Let's just be clear. It's  
13 Energy, not Entergy, Northwest. And I am Don  
14 Gregoire. I'm the Reg Affairs Manager here at  
15 Columbia Station.

16 MR. JAVORIK: Alex Javorik, Engineering  
17 Vice President, Columbia.

18 MR. DONOVAN: Paul Donovan, Design Stress  
19 Supervisor at Columbia.

20 MR. TRAUTVETTER: JR Trautvetter,  
21 Compliance Supervisor, Columbia.

22 MR. DOBKEN: Public affairs.

23 MR. LANGDON: Andy Langdon, Fukushima  
24 flooding hazard project.

25 MR. LYLE: Greg Lyle, Fukushima project

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1 engineer.

2 MR. GREGOIRE: And that's it from Energy  
3 Northwest.

4 MR. HAGAR: All right, gentlemen. And I  
5 apologize for the slip of my tongue there. I know  
6 that you guys are Energy Northwest and not Entergy.  
7 I apologize for even making that suggestion that you  
8 were. So, now, Mr. Johnson, would you and the other  
9 petitioners or the representatives of your  
10 organizations please introduce yourselves?

11 MR. JOHNSON: Okay. I'm Charles K.  
12 Johnson, and I'm the Director of the Joint Tasks Force  
13 on Nuclear Power for Oregon and Washington Physicians  
14 for Social Responsibility.

15 MS. **MATELA** : I'm Nancy **MATELA** .  
16 I'm with Alliance for Democracy, co-petitioner with  
17 Oregon and Washington Physicians for Social  
18 Responsibility. I'm also the head of the Nuclear  
19 Energy and Waste Committee of Alliance for Democracy.

20 MR. HAGAR: All right. Now, we don't  
21 require members of the public to introduce themselves.  
22 But if there's any member of the public on the phone  
23 that wants to introduce himself or herself, right now  
24 would be a good time to do that. Please state your  
25 name. All right. It sounds like no members of the

1 public are on the line. Is there anyone listening  
2 that has not been introduced? All right.

3 Then before we actually get started, I  
4 want to review some general information about the 10  
5 CFR 2.206 process and make sure we're all starting  
6 from the same place. Section 2.206 of Title 10 of the  
7 Code of Federal Regulations describes the petition  
8 process. It's the primary mechanism for the public to  
9 ask the NRC to take enforcement action. And this  
10 process permits anyone to petition the NRC to take  
11 enforcement action related to NRC licensees or  
12 licensed activities. And depending on the results of  
13 the evaluation, the NRC could modify, suspend, or  
14 revoke an NRC-issued license or take any other  
15 appropriate enforcement action to resolve the problem.

16 Now, the NRC staff guidance, 2.206  
17 petition request, is in Management Directive 8.11, and  
18 that directive is publically available through the NRC  
19 website.

20 So that's about the process. Now, this  
21 specific meeting, in a letter dated October 31st,  
22 2013, the petitioners provided the initial information  
23 that the NRC staff was considering under the 2.206  
24 process. Within that process, the Petition Review  
25 Board, or PRB, has been formed and is preparing to

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1 consider the subject information and develop a  
2 recommendation for responding to the petition. The  
3 purpose of today's meeting is to give the petitioners  
4 an opportunity to provide additional support for the  
5 petition before the Petition Review Board develops  
6 that recommendation.

7 I want to emphasize that today's meeting  
8 is not a hearing. It is also not an opportunity for  
9 anyone to question or examine the Petition Review  
10 Board on the merits of the issues presented in a  
11 petition request. While the NRC staff may ask  
12 clarifying questions, their primary role in this  
13 meeting is to listen to the petitioners.

14 I want to emphasize no decision regarding  
15 the merits of the issues will be made at this meeting.  
16 And following this meeting, the Petition Review Board  
17 will conduct its internal deliberations. And after  
18 they've completed those deliberations, they will  
19 discuss the outcome with the petitioners.

20 Now, the 2.206 process allows the NRC  
21 staff to ask clarifying questions in order to better  
22 understand the petitioner's presentation. The process  
23 also allows the NRC to invite the licensee to  
24 participate in the meeting to ensure that they  
25 understand the concerns being raised about their

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1 facility order activities.

2 Now, in this meeting, the licensees may  
3 ask questions to clarify issues raised by the  
4 petitioners. But I want to stress that the licensees  
5 are not part of the 2.206 or the Petition Review  
6 Board's decision-making process.

7 Does anybody have any questions about any  
8 of the topics I've covered and background information?  
9 All right. Then let's move on. I'll turn the meeting  
10 now over to Joe Giitter, who is the Chair of the  
11 Petition Review Board, to discuss the specific  
12 petition that's under consideration. Go ahead, Joe.

13 MR. GIITTER: Okay. Thank you, Bob. I'd  
14 like to begin by summarizing the PRB's understanding  
15 of the scope of the petition under consideration and  
16 then talk about what the NRC activities have been to  
17 date.

18 On October 31st of 2013, Dr. Pearson and  
19 Dr. Gilbert, representing the Oregon and Washington  
20 Physicians for Social Responsibility, responded to a  
21 letter from Chairman McFarlane concerning new  
22 information about seismic hazards to the Columbia  
23 Generating Station. After reviewing the letter, the  
24 NRC staff decided that it should be put into a 2.206  
25 petition process, as Bob described, because it

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1 specifically requested that the Columbia Generating  
2 Station be shut down.

3 To be specific, the petitioners requested  
4 that the NRC provide the data used by the NRC to  
5 continue to conclude that the Columbia Generating  
6 Station has been designed, built, and operated to  
7 safely withstand earthquakes likely to occur in the  
8 region, and that the shut down of the Columbia  
9 Generating Station Nuclear Power Plant take place  
10 immediately until it can be shown that the plant meets  
11 adequate earthquake standards.

12 As the basis for the request, the  
13 petitioners provide evidence that, to their knowledge,  
14 it is more current and has not been considered by the  
15 NRC in its seismic evaluation of the Columbia  
16 Generating Station. Then on December 17th of last  
17 year, the PRB discussed the petitioner's request for  
18 immediate action, and what the PRB decided was to deny  
19 the request because the petitioners provided no new  
20 information demonstrating an immediate safety concern  
21 to the plant or to the health and safety of the  
22 public, as documented in the evaluation.

23 The plant is already undergoing a seismic  
24 hazard review, and the issues raised by the  
25 petitioners are encompassed by the NRC letter dated

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1 March 12th, 2012, the request for information under  
2 50.54(f), what we call a 50.54(f) letter, regarding  
3 recommendations 2.1, 2.3, and 9.3 have been near-term  
4 task force review of advice from the Fukushima Daiichi  
5 accident.

6 The PRB's determination was approved by  
7 the Deputy Director of the NRC Office of Nuclear  
8 Reactor Regulation, Jennifer Uhle, on December 23rd,  
9 2013. And Mr. Johnson was informed of the PRB's  
10 determination on January 6th of 2014.

11 Then on January 14th, Mr. Johnson asked  
12 for an opportunity to address the PRB on a telecon,  
13 which is the purpose of today's meeting.

14 As a reminder for the meeting  
15 participants, please identify yourself if you make any  
16 remarks, as this will help in the preparation of the  
17 meeting transcript that will be made publically  
18 available at a future date. In addition, the NRC  
19 staff verified that no sensitive or proprietary  
20 information is contained within the petition.

21 Since this is a public meeting, I would  
22 like to remind the PRB members, the licensee, the  
23 petitioner, as well as other meeting participants, of  
24 the need to refrain from discussing any NRC sensitive  
25 or proprietary information during today's public

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1 meeting.

2 Mr. Johnson, I'll turn the meeting over to  
3 you to allow you to provide any additional information  
4 you believe the PRB should consider as part of the  
5 petition. And starting now, you'll have one hour to  
6 make your presentation.

7 MR. JOHNSON: Thank you very much, Mr.  
8 Chairman. My name is Charles K. Johnson. I'm the  
9 Director of the Joint Task Force on Nuclear Power for  
10 the Oregon and Washington Physicians for Social  
11 Responsibility.

12 I want to start first by introducing Nancy  
13 **Matela** from the Alliance for Democracy and  
14 indicate that the Alliance for Democracy has decided  
15 that they would like to join us as petitioners in this  
16 proceeding. I understand that they will need to be  
17 sending a written, some sort of written  
18 correspondence, but perhaps you'd like to say a couple  
19 of words, Nancy, before I go on.

20 MS. **MATELA** : Yes. Thank you, Charles.  
21 Alliance for Democracy, among other things, works for  
22 sustainable economies that also sustain the  
23 environment. And the new news about the earthquake  
24 faults that lie under and around CGS and are connected  
25 to the Puget major fault is very disturbing to us.

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1           Very few people realize that that  
2 southeast corner of Washington is upriver from over a  
3 million people, including Portland, Oregon. It is  
4 upwind from many thousands of people in Idaho, and  
5 there's 300,000 people within the 50-mile radius of  
6 CGS alone. That would be the lives that would be in  
7 jeopardy if an earthquake happens on or near the  
8 reservation. It would also destroy industries, such  
9 as the ag industry, which is over a billion dollars.

10           So in terms of economy and environment,  
11 we're deeply disturbed by the apparent increased risk  
12 that has come to our attention. And that's why we are  
13 co-petitioners. I'll turn it back to you, Charles.

14           MR. JOHNSON: Thank you, Nancy. I have  
15 sent Fred a list of additional documents that I'd like  
16 you to consider with regard to this petition. The  
17 first is actually a question. We had hoped to ask  
18 this question informally, but we were told we needed  
19 to ask it formally. So we'll go ahead and take this  
20 opportunity to do it now. It's from Terry Tolan, who  
21 is the geologist that we hired to review the USGS and  
22 other seismic studies that have been done in the  
23 Hanford Nuclear Reservation and the vicinity around  
24 it.

25           The question is, and this is regarding the



1 internal determination, the NRC memo that rejected our  
2 call for an immediate shutdown of the Columbia  
3 Generating Station. This question is directed to the  
4 author of that memo. I understand Yong Li is there  
5 today. Perhaps he could answer this question now, or  
6 perhaps he could answer it later in writing. Either  
7 way is fine.

8 The question is is it the case that the  
9 maximum vibratory ground motion, FSE, for the Columbia  
10 Generating Station is 0.25 G to 0.60 G in the 2 to 10  
11 hertz range on figure one, as stated in the attached  
12 letter? If so, can you explain the statement on page  
13 two of the letter highlighted in yellow that cites 20  
14 hertz? Should it state 2 hertz and greater?

15 MR. HAGAR: This is Bob Hagar. Let me  
16 interrupt for just a moment here because it's my  
17 understanding that this meeting is not set up to  
18 enable or to provide you an opportunity to interrogate  
19 the NRC staff. Instead, it's an opportunity for you  
20 to present the evidence that you want the PRB to  
21 consider. I'd like to --

22 MR. JOHNSON: Would it be possible to get  
23 an answer to this question at some point? And if so,  
24 how would I go about doing that? We were hoping to  
25 actually ask the authors of the study in some way. We

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1 were told that we, that -- I mean, you instruct me as  
2 to how to get the answer to that. Is there some way  
3 to get an answer to that, or is there no way to get an  
4 answer to that question?

5 MR. HAGAR: Let's ask the Headquarters  
6 staff to say how you can, how you can have a dialogue  
7 with the NRC staff. But I'm suggesting that this  
8 meeting is not the forum for that.

9 MR. JOHNSON: If you'll pardon me for a  
10 moment, it seems to be a typo in the memo. If that's  
11 the case, could you tell us that, or what's it going  
12 to take to find out?

13 MR. LYON: Chuck, this is Fred Lyon. What  
14 we're going to do is take your question, and you are  
15 absolutely right. We will look at it. We will verify  
16 that what we've written is correct. And if we have a  
17 typo, then you are correct, we need to fix it and  
18 we'll address it, and we will let you know as part of  
19 our follow-on response to you. So the answer is, yes,  
20 you will get an answer to the question.

21 MR. JOHNSON: Okay. That's all I wanted.  
22 That's why I put it into the record. Okay, thank you.  
23 The second document that I sent to Mr. Lyon is Terry  
24 Tolan's response letter to me regarding the NRC's  
25 internal determination memo to reject Oregon and

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1 Washington PSR's call for the immediate shut down of  
2 the CGS pending the earthquake assessment, and I'm  
3 going to read from that. Hang on just a moment.

4 Okay. Some comments on the Columbia  
5 Generating Station's seismic hazard considerations  
6 determination of immediate safety concerns letter.  
7 G20130776. "Dear Mr. Johnson, I've had an opportunity  
8 to read this response letter cited above. I would  
9 first like to respond to the background information  
10 set out by the NRC staff. The NRC staff states that  
11 each nuclear power plant was designed to a ground  
12 motion level that is appropriate for the geology and  
13 tectonics in the region surrounding the plant  
14 location. In my two letter reports referenced at the  
15 end of the letter, it has been clearly shown that the  
16 CGS was designed at a time when much of the geology  
17 and tectonics of this region was not well known and  
18 was not well understood.

19 For example, the CGS was designed based on  
20 the flawed decision that the epicenter of the largest  
21 historical earthquake in this region was 180 miles  
22 away, as compared to a recent study that places the  
23 epicenter approximately 99 miles away from the CGS  
24 site, which is a significant change that needs to be  
25 assessed. Second, when the CGS was designed, only six

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1 faults were considered within the Yakima fold and  
2 thrust belt as part of the seismic risk assessment.  
3 Subsequent studies have more than doubled this number  
4 of Yakima fold and thrust belt faults. The design of  
5 the CGS was based on a thin-skinned uncoupled fault  
6 modeled for Yakima fold and thrust belt. Published  
7 work by the U.S. Geological Survey, Blækly et al  
8 2011, shows that the Yakima fold and thrust belt is  
9 best characterized by a thick-skinned coupled fault  
10 model, which means that the faulting extends into the  
11 basement rock below the salt layers and can give rise  
12 to larger-magnitude earthquakes and subsequent high  
13 vibratory ground motion at the CGS site. When  
14 designed, the CGS seismic risk assessment was based on  
15 the Yakima fold and thrust belt faults that had  
16 relatively short lengths. Based on the published U.S.  
17 Geological Survey work, Blækly et al 2011, it appears  
18 that these faults are substantially longer and likely  
19 capable of producing much larger magnitude earthquakes  
20 than previously believed.

21 Five, when the CGS was designed, it was  
22 thought that movement on the Yakima fold and thrust  
23 belt faults was old due to the lack of evidence of  
24 offsets. This assumption is also questionable based  
25 on the published work by Blækly et al 2011. Six,

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1 when the CGS was designed, it was not known that there  
2 was an active fault just 2.3 miles away from the  
3 reactor.

4 Thus, I question the NRC staff assumption  
5 that the design of CGS is appropriate for the geology  
6 and tectonics in the region, given all the fundamental  
7 revisions in our knowledge that have occurred since  
8 the last time the CGS seismic risk was assessed in the  
9 early 1990s. These advances in understanding the  
10 structural geology of the Yakima fold and thrust belt  
11 fundamentally change the basic assumptions previously  
12 used to assess seismic hazard and risk at the CGS  
13 site.

14 Concerning the 'evaluation,' I note that  
15 they stayed on page two, first bullet, third item,  
16 that OWPSR mistakenly compared the 3 to 5 hertz  
17 spectral acceleration levels of 0.8 G for the waste  
18 treatment plant, WTP, 2005 seismic design with the CGS  
19 SSB 20 hertz and greater spectral acceleration value  
20 of 0.25 G. Indeed, I should have compared the CGS  
21 spectral acceleration to that of the revised WTP  
22 spectral response developed by Young 2007, which is  
23 0.6 G.

24 However, it still doesn't change the fact  
25 that the maximum vibratory ground motion for this area

1 has been dramatically increased based on the WTP  
2 studies. As shown in their figure H-3 of the letter,  
3 the revised WTP response spectrum is very similar to  
4 that developed for the CGS. This is interesting given  
5 that Energy Northwest previously implied, letter to  
6 the NRC dated 17 December, 2010, response 3-A, second  
7 paragraph, that differences in the --" oh, hang on a  
8 second. God, I just messed up what I was reading  
9 here. Hang on just a moment.

10 Let me start that sentence again. Well,  
11 I'll just continue where I left it. "The differences  
12 in the site factors, e.g. difference from the active  
13 fault's physical soil properties and thicknesses  
14 amplification/deamplification, etcetera, between the  
15 CGS and WTP sites does not allow one to apply any of  
16 the recent WTP seismic ground motion findings, Rohay  
17 and Reidel 2005, Rohay and Brouns 2007, Young 2007, to  
18 the CGS site.

19 It is curious that, if the site factors  
20 are different between the CGS and WTP, as Energy  
21 Northwest claimed, why are the vibratory ground motion  
22 response spectrums so similar? As previously noted  
23 and discussed, Energy Northwest needs to develop a CGS  
24 site-specific model for ground motion response  
25 spectrum based on blowhole vertical seismic profile

1 data from the ground surface to the top of the  
2 Columbia River basalt. They then need to integrate  
3 this data with the WTP shear wave velocity data for  
4 the Columbia River basalt/Ellensburg formation  
5 interbeds.

6 Energy Northwest also needs to reevaluate  
7 the maximum credible earthquakes and overall seismic  
8 hazards in light of the recently published U.S.  
9 Geological Survey work, Blakely et al 2011. They  
10 would have to incorporate a coupled fault model,  
11 extended active fault lengths, and reevaluate the  
12 earthquake magnitude/frequency, etcetera, before the  
13 CGS site-specific subsurface velocity data could be  
14 used to help constrain estimates and vibratory ground  
15 motion from various earthquake scenarios.

16 In the last bullet paragraph, page two, it  
17 was stated that Energy Northwest, along with the U.S.  
18 Department of Energy, is reevaluating the seismic  
19 hazards for the region surrounding the Hanford site  
20 and is using the latest data model and methods. They  
21 also indicated that they are evaluating the issues we  
22 have previously raised as part of this new seismic  
23 hazard reevaluation and that this report is due to the  
24 NRC in March 2015. I look forward to seeing this  
25 report.

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1           In summary, since both the U.S. Department  
2 of Energy's Young 2007, Rohay and Brouns 2007, Rohay  
3 and Reidel 2005, and Energy Northwest seismic hazard  
4 analyses rely on a flawed and outmoded seismic  
5 assessment model developed by Geomatrix 1996, one  
6 needs to question the basic adequacy of the existing  
7 CGS seismic hazards analysis in light of the new and  
8 recent data and findings presented by the U.S.  
9 Geological Survey. Sincerely, Terry L. Tolan, LEG."  
10 And then there's citations at the end, which is in  
11 this letter that I submitted to Fred already.

12           The third item that I submitted was an  
13 issue brief that was done by Dave Lochbaum of the  
14 Union of Concerned Scientists. The issue is boiling  
15 water, it's entitled "Boiling Water Reactor Shutdown  
16 System Problem," and this is an additional issue that  
17 I'd like you to consider in this petition. It's  
18 related to the, to the danger of an earthquake. And  
19 I'm going to go ahead and read it into the record.

20           Again, it's entitled "Boiling Water  
21 Reactor Shutdown System Problem." It's from David  
22 Lochbaum, Union of Concerned Scientists. It's called  
23 an issue brief. "GE Hitachi informed the Nuclear  
24 Regulatory Commission, NRC, about a safety problem  
25 related to the reactor shutdown system at its boiling

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1 water reactors, BWRs, via a September 27, 2011 update  
2 to NRC Event Report Number 46230, dated September 3,  
3 2010." This is quoting from this. "GE Hitachi, GEH,  
4 has determined that the scram capability of the  
5 control rod drive mechanism in BWR/II-5 plants may not  
6 be sufficient to ensure the control rod will fully  
7 insert in a cell with channel control rod friction at  
8 or below the friction limits specified in MFN 08-420  
9 with concurrent safe shutdown earthquake, SSE. The  
10 plant condition for which incomplete control rod  
11 insertion might occur is when the reactor is below  
12 normal operating pressure, less than 900 psig, and a  
13 scram occurs concurrent with the SSE for Mark I  
14 containment plants and for the SSE with concurrent  
15 loss of coolant accident, LOCA, and safety release  
16 valve events for Mark II containment plants.

17 In this scenario, a substantial safety  
18 hazard results because the affected control rods might  
19 not fully insert to perform the required safety  
20 function. GEH has determined that when channel  
21 control blade interference is present at reduced  
22 reactor pressure and a friction level considered  
23 acceptable in MFN 08-420, a simultaneously-occurring  
24 safe shutdown earthquake, SSE, may result in control  
25 rod friction that inhibits the full insertion of the

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1 affected control rods during a reactor scram from  
2 these conditions. This scenario was not explicitly  
3 considered in MFN 08-420."

4 And back to the narrative from Mr.  
5 Lochbaum. "This issue brief provides background  
6 information about control rods at BWRs and the  
7 specific safety problem. The reactor core of a BWR  
8 consists of fuel pellets stacked within column metal  
9 rods," and I'm actually not going to read all of that.  
10 And I think I'll refrain from reading any of the rest  
11 of this because this is background information that's  
12 designed for people who don't understand nuclear power  
13 plants, and I believe everyone on this call, with the  
14 possible exception of myself and Ms. McCullough, did  
15 understand this prior to, without having read Mr.  
16 Lochbaum's memo.

17 So, obviously, we're very interested in  
18 knowing what measures, if any, have been taken to  
19 address this situation at the Columbia Generating  
20 Station, whether or not any modifications in the  
21 control blades have been discussed or made, you know,  
22 replacements of the control blades, and has this issue  
23 been addressed either partially or fully; and, if not,  
24 what is the time line in which it will be addressed?

25 And let's see. I will move on from there

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1 to item number five, which will introduce item number  
2 four. I'll go back to number four of the documents  
3 that I introduce after I discuss what the document  
4 number five is, which is an email from Dave Lochbaum  
5 from the Union of Concerned Scientists to me dated the  
6 29th of January, 2014. It's a portion of an email.  
7 It's regarding the implications of the D.C. Cook plant  
8 fire event when considering the consequences of an SSE  
9 magnitude quake on fire protection systems.

10 Here's what Mr. Lochbaum had to say to me  
11 about this, and this came in the context of me asking  
12 him questions about this problem with the control  
13 blades. He said here's an additional thing you should  
14 probably look at.

15 "Hello, Chuck. Attached is a November  
16 2008 report to the NRC by the owner of the D.C. Cook  
17 Nuclear Plant in Michigan. Some turbine blades came  
18 apart. The turbine blades are very large pieces of  
19 metal rotating at least 1,800 times per minute. When  
20 they come apart, it ain't pretty. As the blades came  
21 apart, they became missiles. Some missiles ripped  
22 through piping, providing hydrogen gas to the  
23 generator, starting a fire. Other missiles ripped  
24 through piping containing lubricating oil for the  
25 turbine bearings, starting another fire."

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1                   No big deal, right? The turbine generator  
2 is not a safety-related component, so let it burn.  
3 But check out the paragraph on page three, and he's  
4 referring to the NRC licensing event report, which is  
5 item number four. The number is 315/2008-006-00.  
6 "Manual reactor trip due to main turbine high  
7 vibration' at the Donald C. Cook Nuclear Plant Unit  
8 1."

9                   Okay. Check out the paragraph on page  
10 three of the Cook LER, beginning with, "At 2125 hours,  
11 the fire water headed, the vibrations caused when  
12 heavy metal missiles struck concrete walls and floors  
13 created a mini earthquake in the local area. As the  
14 ground shook, a fire protection header pipe ruptured.  
15 Water from the north fire water storage tank poured  
16 from the ruptured header. I read other accounts where  
17 security officers in the vicinity reported old  
18 faithful as a geyser of water shot up from the ground.  
19 Not good when an even triggering a fire also disables  
20 the fire suppression system. Not good at all.

21                   The NRC's regulations require plants be  
22 designed to survive ground motion caused by the safe  
23 shutdown earthquake. As you noted earlier, the SSE  
24 value for CGS is suspect. But for the moment, let's  
25 assume the SSE value is right. The NRC's regulations

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1 do not require the entire plant survive an SSE shake,  
2 only the parts and components of the plant necessary  
3 to shut down the reactor core and maintain a shutdown.  
4 Control rod system, yes. Fire protection system, no.

5           There's a disconnect between fire  
6 protection regulations and non-fire safety  
7 regulations. I spoke about that disconnect in a  
8 r e c e n t       b l o g       p o s t       ( s e e  
9 <http://allthingsnuclear.org/fire-safety-OR-not.>)

10           The Cook event was caused by a turbine  
11 blade failure. An SSE magnitude quake could cause an  
12 even greater ground motion at CGS. Would the SSE  
13 cause fire or fires, would the SSE disable or degrade  
14 the fire protection systems? Lubricating oil is not  
15 only used for the turbine. CGS has two very large  
16 recirculation pumps inside the drywell that use large  
17 amounts of lubricating oil. There's ample combustible  
18 material available in the reactor building. It would  
19 be nice to know that the CGS can survive an SSE, even  
20 if the SSE starts a fire. Thanks, and good luck."

21           So I did include the event report, and the  
22 issues that are raised by Mr. Lochbaum in this memo I  
23 think are germane to the issue of whether or not the  
24 CGS is robust enough to withstand an SSE earthquake or  
25 even a larger one, as we believe is possible to occur

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1 there.

2 And with that, I think I've introduced all  
3 of the elements that we'd like to have added. If you  
4 have any questions about that or this isn't clear,  
5 then please let me know.

6 MR. LYON: Chuck, this is Fred. Have you  
7 already emailed the documents to me?

8 MR. JOHNSON: I emailed them to you at  
9 9:16 a.m., according to my email, yes.

10 MR. LYON: Okay.

11 MR. JOHNSON: You and Merrilee, also.

12 MR. LYON: Okay, great. We probably  
13 missed them. We were already over here making sure  
14 that the room was set up. But I will check my email  
15 and those documents, and they will be entered into our  
16 ADAMS document system, and we will consider them as  
17 part of our PRB evaluation. So thank you.

18 I'll let you know if, I'll let you know  
19 if, for some reason, they got lost in electron land.

20 MR. JOHNSON: Okay. And I'd be happy to  
21 send them again. I don't know if the procedure, now  
22 that this is our formal, this is a formal pre-meeting,  
23 I guess it's called, if you need additional  
24 clarification, since I didn't give these to you, you  
25 know, until 45 minutes, I tried to send them to you 45

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1 minutes before this hearing, if you have additional  
2 questions, is it permissible for you to ask them after  
3 this hearing is closed?

4 MR. LYON: Certainly it is. We're not  
5 going to ignore information that might be pertinent to  
6 the issues.

7 MR. JOHNSON: Okay. That's all I have at  
8 this point. That's all I intend to present today.

9 MR. GIITTER: Okay. So at this time, I  
10 just wanted to add a couple of things. This is not a  
11 hearing. We'll take a look at the information that  
12 you provide. At this time, since this is a public  
13 meeting, I would like to remind the PRB members, the  
14 licensees, and the petitioner, and other meeting  
15 participants of the need to refrain from discussing  
16 any sensitive or proprietary information from today's  
17 meeting. I'm not sure there was any but just a good  
18 reminder.

19 Does the staff from NRC Headquarters have  
20 any questions for the petitioners at this time? Okay.  
21 Does the staff from NRC Region IV have any questions  
22 for the petitioners? Okay. Hearing none, I'd like to  
23 turn the meeting back to Bob to allow questions from  
24 any other participants.

25 MR. HAGAR: Thank you, Joe. Does the NRC

1 staff at the Columbia Generating Station have any  
2 questions or comments? All right. Does the licensee  
3 have any questions or comments for the petitioners?

4 MR. GREGOIRE: No questions. This is Don  
5 Gregoire, again, Reg Affairs Manager at Columbia. We  
6 do appreciate the previous consideration for our  
7 station's safety. The NRC's assessment with regard to  
8 immediate concern for safety, we agree with the  
9 conclusion. We do recognize that there's some very  
10 good questions raised from the petitioners, but, as  
11 expressed previously, there's a pretty thorough study  
12 going on right now with Pacific Northwest National  
13 Laboratory, many of the peers of Mr. Tolan, that are  
14 evaluating this type of information.

15 Energy Northwest will be implementing any  
16 recommendations based on that thorough review of the  
17 seismic hazards associated with this region. We'd  
18 also like to say that many of the items that were  
19 discussed that were brought up from Mr. Lochbaum,  
20 those issues have been addressed and I think there's  
21 information that can be found on the docket in  
22 relation to that. But I do appreciate the opportunity  
23 to make comments. That's it.

24 MR. HAGAR: All right, Don. Thank you.  
25 Don, do you have any questions or comments about the

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1 petition process or the 2.206 process or the Petition  
2 Review Board? Do you understand that process?

3 MR. GREGOIRE: Yes, I do understand the  
4 process. I don't have any additional questions at  
5 this time.

6 MR. HAGAR: All right. Then does any  
7 member of the public, anyone else who has joined this  
8 call, have any questions either to the petitioners or  
9 about the petition process? All right. I'm not  
10 hearing any response, so, Joe, do you have any  
11 concluding comments?

12 MR. GIITTER: Yes. I'd just like to thank  
13 everybody, Charles and Nancy, for participating and  
14 for sharing their views. We take safety very  
15 seriously at the NRC. It's our job. So I wanted to  
16 thank Charles and Nancy for taking the time to provide  
17 the NRC staff with clarifying information on the  
18 petition they've submitted. And within a couple of  
19 weeks, PRB plans to meet internally to discuss the  
20 information that you've provided and any additional  
21 information that we haven't looked at yet and to make  
22 its initial recommendation on the petition.

23 Following that meeting, the petition  
24 manager will inform you of the PRB's initial  
25 recommendation, either accept or reject the 2.206

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1 petition for review, in accordance with the criteria  
2 in our management directive. And with that, I'll  
3 return it back to you, Bob.

4 MR. HAGAR: All right. Before we close,  
5 does the recorder for this meeting need any additional  
6 information for the meeting transcript?

7 COURT REPORTER: I don't anticipate I  
8 will. If I do, I'll call Mr. Lyon or I'll email Mr.  
9 Lyon. But right now, in my first run over, I look  
10 pretty good.

11 MR. HAGAR: All right, thank you. With  
12 that then, this meeting is concluded. Thank everyone  
13 for their time and attention. And we're now going to  
14 terminate the telephone conversation. Thank you.

15 (Whereupon, the foregoing matter was  
16 concluded at 1:58 p.m.)