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**NUCLEAR REGULATORY COMMISSION**

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                              with Southern California Edison Company  
                              DVD 3/4

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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AUGMENTED INSPECTION TEAM EXIT MEETING WITH SOUTHERN

CALIFORNIA EDISON COMPANY

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MONDAY

JUNE 18, 2012

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SAN JUAN CAPISTRANO, CALIFORNIA

DVD 3/4

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The meeting convened in the Community Hall  
at the San Juan Capistrano Community Center at 25925  
Camino Del Avion, San Juan Capistrano, California, at  
6:00 p.m., Richard Daniel, presiding.

NRC STAFF PRESENT:

RICHARD DANIEL, Facilitator

THOMAS BLOUNT

ELMO COLLINS

GEORGE CRAVER

EMMETT MURPHY

JOHN REYNOSO

JOEL RIVERA-ORTIZ

GREGORY WARNICK

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PRESENT: (CONTINUED)

GREGORY WERNER

ALSO PRESENT:

PETER DIETRICH, Southern California Edison Co.

DOUGLAS BAUDER, Southern California Edison Co.

THOMAS PALMISANO, Southern California Edison Co.

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

(12:23 p.m.)

MR. STEINMETZ: (Joins during progress)  
the 50.90 rule. The changed tube supports should have  
fallen under the 50.90 rule. The add flow restrictors  
should have fallen under the changed tube report. Any  
additional water volume, the feedwater distribution  
ring, as well.

I would like an answer on each one of these  
as to why they did not fall under the 50.90 rule. Thank  
you.

MR. WERNER: I'll answer the general  
question. I'll let Joel answer the specifics for each  
of those items. Actually, all those items did fall  
under the 50.59 rule and they were evaluated in  
disposition.

As we indicated, only two of those required  
License Amendments. Joel, do you want to come up and  
touch base on some of those other ones.

MR. STEINMETZ: That's just a statement.  
It's not an answer.

MR. RIVERA-ORTIZ: Okay. Just for  
clarification, when we talk about 50.59, we're talking  
about Title 10 of the Code of Federal Regulations,  
Section 50.59. And that section of the regulation

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1 establishes the threshold for regulatory review for  
2 planned changes that are applicable to that regulation.

3 And those changes that apply to that  
4 regulations are changes to the facility as described  
5 in the Final Safety Analysis Report. And that is why  
6 it's something that is very, very important, is how that  
7 facility and the functions of those structures, systems  
8 and components are described in the FSAR, Final Safety  
9 Analysis Report, because they form the basis for the  
10 operating license.

11 And we look at those changes and we assess  
12 how the FSAR described those sub-components that you  
13 mentioned and how they affected the threshold of the  
14 steam generators.

15 And as Greg said, we still need to review.

16 We have more inspection to do in that area. But at  
17 this time we don't have any indications that those  
18 particular components were required to -- for a License  
19 Amendment. The licensee did consider those in one other  
20 process.

21 This process normally is a two-step  
22 process. You do a screen where you identify all the  
23 changes that are affecting your facility, and then you  
24 move, does that screen in, \*\*\*12:26:10 (phonetic) then  
25 you perform the evaluation under the criteria of 50.59.

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1 And that process was done in the course of the industry  
2 process that we endorse through our regulatory guide.

3 FACILITATOR DANIEL: Hang on. Joel, stay  
4 right there for a second. Do you have a follow up  
5 question on this?

6 MR. STEINMETZ: I'm sorry, but I just want  
7 to know from the audience. Did anybody understand  
8 really why any one of those things were changed?

9 FACILITATOR DANIEL: Hang on. We are not  
10 taking surveys here. But thank you, anyway.

11 MR. WERNER: The NRC was aware of the  
12 changes that Southern California Edison was  
13 implementing.

14 MR. STEINMETZ: All of them? All of them?

15 MR. WERNER: Yes. Yes.

16 FACILITATOR DANIEL: Okay. All right.  
17 Do you have a question? Elmo, were you going to say  
18 something? Okay. What's your name, ma'am?

19 A2. Marion Pak. (Phonetic). I'm a  
20 resident of Laguna Beach. And I would like to  
21 know -- actually I've got two questions -- the first  
22 one is, when the steam generators, the four of them  
23 arrived from Japan, there were some identifiable  
24 problems at that point in time.

25 They were severe enough to even consider

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1 returning two of the generators to Japan. What were  
2 those problems? What was the fixed that was done on it  
3 and has it led to the four lemon generators we now are  
4 dealing with at San Onofre?

5 And my second question is, we are  
6 continually assured that the release of radiation there  
7 was very small. I would like to know when we -- when  
8 those generators are in the containment dome that is  
9 four-foot thick of concrete and rebar, why didn't it  
10 contain this small amount of radiation? Why was it  
11 released into the atmosphere when it was within the  
12 containment dome?

13 MR. WERNER: I will go ahead and take the  
14 last question. I will let John Reynoso answer the first  
15 question. He actually did what we call review of the  
16 receipt inspections. We're not aware of any issues  
17 associated with what you talked about. I'll let John  
18 address that.

19 FACILITATOR DANIEL: John.

20 MR. REYNOSO: My name is John Reynoso. I  
21 am part of the AIT and also the resident inspector there  
22 at San Onofre. The way I understand your question was  
23 the shipment of the steam generators was made -- they  
24 never left Japan, the Unit 3 steam generators. They  
25 had issues with the divider plate issues. But then the

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1 arrival of the steam generators were delayed. Is that  
2 your understanding of that?

3 (Off-mic question)

4 MR. REYNOSO: Well, I'm not aware of any  
5 of those fixes that you talk about, but there were  
6 conditions that were found with the Unit 3 steam  
7 generators where they were stored in Kobe, Japan. They  
8 took additional tests here on site with the Unit 2 steam  
9 generators and they were determined not to have the same  
10 conditions.

11 MR. WERNER: Now you could be talking about  
12 the issue that was identified in Japan on the Unit 3  
13 steam generator where it had the divider plate weld  
14 crack, that had to be repaired in Japan. That is a true  
15 statement, as far as they had to take extensive repair.

16 I discussed that during the AIT portion of the exit.  
17 So, that was an area that the team specifically looked  
18 at because that would be the biggest differences between  
19 the two steam generators.

20 So they did have to cut-off, if you remember  
21 the picture, the bottom of the bowl and the divider  
22 plate, because of heated cracks, had to rework the welds,  
23 re-weld the bowl back on and do pressure testing, as  
24 well as post-weld heat treatments associated with those  
25 activities.

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1           But again, we did not find that those  
2 contributed at all to the steam generator tube wear.

3           MR. REYNOSO: Now our process is that we  
4 did a steam generator inspection specifically for  
5 replacement of steam generators. We would not allow  
6 Unit 2 steam generators to go in until we knew more about  
7 the Unit 3 conditions, and that's what occurred. That  
8 may be what you have heard. But at no time did we install  
9 steam generators that did not meet our safety standard.

10           MR. WERNER: Now, as far as your second part  
11 of your question about the leak, about why radiation  
12 leaked out, it's because the tube leaked. So, once the  
13 tube leaked, as Greg Warnick described, the tubes  
14 actually separate the primary radioactive water from  
15 the secondary clean water. Once those tubes leaked,  
16 it leaks radioactive water into the secondary, which  
17 goes to steam the turbine, which is outside containment.

18           So one of the principal radiation barriers,  
19 primary reactor coolant system, which the tube is,  
20 actually leaked and allowed the radioactivity to go into  
21 the secondary side. So that's why it leaked outside  
22 of containment because the steam goes under the turbine,  
23 which is on the secondary side, outside of containment.

24           MR. REYNOSO: So, what you're saying is if  
25 there is a larger accident, a larger leak than what there

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1 was, the containment dome provides no protection?

2 MR. WERNER: If there is a tube rupture,  
3 you're absolutely correct, the containment dome does  
4 not. But like we said before, because of the ability  
5 to rapidly detect at low levels, the steam generators  
6 are isolated.

7 Now, again, the steam generators, I mean,  
8 that plant is designed for a tube rupture event. So  
9 there is a possibility, and I don't believe -- I mean,  
10 Emmett might be able to tell me -- I don't believe we've  
11 ever had what we call a steam generator tube design event  
12 where both -- what's called a double-ended sheer where  
13 essentially a chunk of the tube fails so you have leak  
14 from both the cold side and the hot side. I don't think  
15 that's ever occurred. I think we've had some failure  
16 of one tube, but not a double-ended sheer. Is that  
17 right, Emmett?

18 MR. MURPHY: (Off-mic)

19 MR. WERNER: But not double-ended sheer.

20 FACILITATOR DANIEL: All right. Thank  
21 you, Greg. You guys good? That's it?

22 MR. WERNER: Well, just again, to clarify,  
23 again, the way that is combated and prevented to minimize  
24 release of radioactivity is, as Greg Warnick identified,  
25 the operators identified, and quickly button up the

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1 steam generators that close the main steam isolation  
2 valves and depressurize it so the primary system is less  
3 than the secondary system, so it stops the leak.

4 So there will be some radioactivity  
5 released, but it's minimized because of the actions that  
6 the operators take. Again, as discussed before, it's  
7 a combination of design, monitoring, as well as training  
8 of the operators to rapidly identify, detect and  
9 isolate.

10 FACILITATOR DANIEL: Thank you Greg.  
11 Sharon Hoffman, (phonetic) go ahead.

12 MS. HOFFMAN: Thank you. I have two  
13 technical questions and a logistics questions. The  
14 first question is, I'm hearing repeatedly that this was  
15 unexpected, and I'm wondering what the NRC is doing to  
16 look at other replacement parts at other plants, whether  
17 they are steam generators, reactor pressure vessel,  
18 pumps, valves, whatever they may be where there was some  
19 kind of change.

20 Obviously, when you're allowing  
21 replacements, you're allowing changes in an attempt to  
22 make things better. But clearly, the simulations don't  
23 show what is going to happen. And we've seen that very  
24 vividly in San Onofre.

25 And I'm wondering how you are applying that.

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1 Are you going back to look at every other application  
2 of this sort that you have approved in the last 10, 20,  
3 50 years? So that's my first technical question.

4 FACILITATOR DANIEL: How about the answer  
5 to that one first and then we'll get your second one?  
6 Okay?

7 MS. HOFFMAN: All right.

8 FACILITATOR DANIEL: All right.

9 MR. COLLINS: Let me make sure I understand  
10 the question is what's NRC doing with respect to other  
11 significant design changes that they are implementing  
12 in nuclear power plants.

13 I, specifically, for steam generators, the  
14 learnings we're getting from San Onofre, number 1, we  
15 talked about, we need to take a look at our processes,  
16 our inspection procedures and potentially, even our  
17 License Amendment review process to see if we need to  
18 put more into that.

19 But also, there is one other plant, at least  
20 that I know of, that has steam generator replacements  
21 and we're taking a look at them as, well, with that  
22 licensee to understand the design.

23 The real question is how do we know it meets  
24 its design objectives when a design is made like that.

25 And so that falls back to the engineering design review,

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1 independent verification, all those engineering  
2 principles that are at stake that we all rely on for  
3 safety, yet somehow our life's experiences have shown  
4 us over the years that design sometimes is not what it's  
5 cracked up to be and that's what we've got to watch out  
6 for in the NRC and make sure it does not have a  
7 significant impact on safety when those types of errors  
8 do occur.

9 FACILITATOR DANIEL: All right, Sharon.  
10 Your second question?

11 MS. HOFFMAN: I would just say that it does  
12 have a significant impact on safety and you might  
13 consider that precaution would be a prudent direction  
14 and you ought to stop making changes and stop letting  
15 engineering simulations project what we might have.

16 My second technical question has to do with  
17 what about the possibility of cascading failures. So,  
18 it's been discussed that when the tube burst, it could  
19 have sent something flying into another tube. And  
20 people have discussed here the possibility of an  
21 earthquake happening at the same time.

22 Engineering failures do not happen in  
23 isolation, and so I would ask the technical team to what  
24 degree they are considering what might have happened  
25 and what could happen in the future if that steam

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1 generator went flying out, hit another tube, hit another  
2 tube and next thing we know we have a much larger release  
3 of radiation.

4 FACILITATOR DANIEL: All right. Thank  
5 you, Sharon.

6 MR. WERNER: Well, as part of the NRC  
7 process we do a risk assessment and we'll look at the  
8 possibility of the multiple tubes failing, and that's  
9 being conducted right now.

10 So again, we initially did an assessment  
11 for risk and that's why we lost the Augmented Inspection  
12 Team, because the risk did increase by quite a bit.

13 So yes, we're concerned. It is a serious  
14 safety issue, like I said. We share some of the same  
15 concerns you do. We've got to understand what happened  
16 so that it can be prevented.

17 And again, you know we -- there is no  
18 decision that's been made. I mean, clearly, if it had  
19 been, it would be started up. So, at this stage, they  
20 have not done enough to demonstrate safety.

21 FACILITATOR DANIEL: A logistics question,  
22 final question? Right?

23 MS. HOFFMAN: Yes. The logistics question  
24 is there was an opportunity to submit questions  
25 beforehand. We were told there would be opportunity

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1 to follow up with written questions. What are the  
2 mechanics for distributing the answers to those  
3 questions, and to any questions you were unable to answer  
4 this evening, to the public?

5 MR. WERNER: Again, I'll take that one.  
6 Again, the feedback form that Rick talked about,  
7 actually I believe, is addressed to me, so I'll take  
8 those questions. And if you'll put on the feedback form  
9 how you want to be contacted, preferably by email, if  
10 that's okay or if you would like a different type of  
11 response, we can do that also. But I will have the  
12 responsibility, as well as some of my team members, to  
13 help me to address those issues, those questions.

14 FACILITATOR DANIEL: All right, Mr. Dan  
15 Hersh. (Phonetic)

16 MR. HERSH: I have two questions, and I  
17 would like to preface it by trying to say what I think  
18 many people here are feeling. There is tremendous  
19 skepticism on the part of many of us about both Edison  
20 and the NRC and their very cozy apparent relationship.

21 We wouldn't be here today if Edison had told  
22 the NRC these were significant design changes and we  
23 should go through a License Amendment process that the  
24 public can be part of the review and there should be  
25 a thorough review. And we wouldn't be here today if

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1 NRC had said we are going to do a License Amendment with  
2 a full public hearing and with full review.

3 In light of that long history of things like  
4 five years of fabrication of fire log records, and four  
5 years of diesel generators without batteries attached,  
6 and so forth, and the NRC doing essentially nothing,  
7 my first question to you is, will the NRC, before a  
8 decision is made on whether or not to permit restart  
9 of either unit, hold a formal, full, adjudicatory,  
10 evidentiary hearing in which parties, not just Edison  
11 and the NRC participate, but whereby experts who are  
12 critical of both of you testify with cross examination,  
13 discovery and a full evaluation of whether it is safe  
14 to restart?

15 My second question, directly on point about  
16 your steam generators and the determination that you  
17 want to be transparent, I, for three months, along with  
18 numerous members of the press, have been trying to get  
19 some numbers out of NRC, and I would like you to give  
20 us those numbers today.

21 In early February, NRC spokesman Victor  
22 Dricks said that they had inspected only one of the four  
23 steam generators, that one being in Unit 2, only 80  
24 percent of it, and had found somewhere in the vicinity  
25 of 900 tubes that had wear, wear more than 10 percent.

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1 Through months we have been asking how many  
2 tubes have you found with wear and we've been frankly  
3 given the run-around.

4 We have just been told by Edison we only  
5 found two tubes of trouble in Unit 2. We know that's  
6 not true because in early February you had nearly 900.

7 So, will you tell us today how many tubes in Unit 2,  
8 how many tubes in Unit 3 have wear of greater than 10  
9 percent, and also how many tubes in Unit 2 and in Unit  
10 3 have shown any indication of wear?

11 So, those are the two questions. Will you  
12 permit an adjudicatory, evidentiary hearing on the  
13 safety of restart before making that decision?

14 FACILITATOR DANIEL: All right.

15 MR. HERSH: And secondly, how many bad  
16 tubes are there in total?

17 (Applause)

18 MR. WERNER: The tube question, I'd have  
19 to ask Emmett for the exact count. I don't even know  
20 if he has the exact count. We do have that information,  
21 and again, that's part of our inspection activity. But  
22 there were a significant number of tubes that had wear  
23 indications. The ones we've talked about in Unit 2 were  
24 the two that had tube-to-tube wear. That is where the  
25 large concern.

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1 Now, there was other issues on the other  
2 generators on Unit 2, have to do with any Unit 3 retainer  
3 bar, which I also discussed, and those were measured  
4 and plugged to address that issue.

5 But as far as the specifics, I would have  
6 to have the raw data in front of me. I can't remember  
7 all of that information.

8 (Off-mic question)

9 MR. WERNER: Well actually, we will publish  
10 some of the information in the inspection report. But  
11 I don't know if we will go to that level of detail, down  
12 to 10 percent wear.

13 FACILITATOR DANIEL: Hang on, folks. Hang  
14 on. Hang on.

15 MR. COLLINS: It's Mr. Hersh, right?  
16 Hirst, I just don't think -- there's almost 20,000 tubes,  
17 and so that data, we just don't have it at our  
18 fingerprints. We have that, we just don't have it here  
19 to relate it to you tonight.

20 And I'd like to take away a commitment.  
21 What I'm going to offer is see if we can find away to  
22 get that data and put it on our website and make it  
23 publicly available so you can take a look at the info.

24 Would that be acceptable to you?

25 (Applause)

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1 MR. HERSH: (Off-mic)

2 FACILITATOR DANIEL: Listen, how about  
3 this. He committed to putting the information on the  
4 public website so that it's publicly available. Rather  
5 than him approximating, how about he does it right?  
6 He's made a commitment to do that. All right. Hang  
7 on.

8 MR. DIETRICH: Thank you for the question.  
9 We will get you the specific numbers. Just a second.  
10 I will share the percentages with you tonight. But  
11 please keep in mind that we have already mentioned that  
12 we measure on each tube, on each of the 9727 tubes on  
13 each steam generator, we look for -- there could be  
14 several wear indications as these tubes move through  
15 the tube support plates.

16 Rough numbers, rough percentages on Unit  
17 3, nine percent of the tubes in the Unit 3 steam  
18 generators, so 19,454 tubes in the Unit 3 steam  
19 generators, nine percent of them showed wear with  
20 greater than 10 percent through-wall indications. Nine  
21 percent.

22 On Unit 2, 12 percent of the tubes showed  
23 wear greater than 10 percent through-wall indication.

24 Let me share with you that compared to other steam  
25 generators in the industry, those numbers by themselves

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1 are not alarming.

2 (Participant off-mic)

3 MR. dietrich: What is alarming, and the  
4 reason we are here tonight, is because of the unexpected  
5 tube-to-tube wear. We will get you the specific  
6 information with that, with those numbers. On Unit 3,  
7 we saw 326 tubes, with tube-to-tube wear, greater than  
8 10 percent through-wall.

9 On Unit 2, we saw two tubes with the  
10 unexpected tube-to-tube wear greater than 10 percent  
11 through-wall. So we will get the information out to  
12 you. I will get it to you, Mr. Hersh. But for tonight,  
13 nine percent of the tubes on Unit 3 with greater than  
14 10 percent through-wall wear. On Unit 2, 12 percent  
15 of the tubes with greater than 10 percent through-wall  
16 wear.

17 (Participant off-mic)

18 (Applause)

19 FACILITATOR DANIEL: Thank you. Thank you  
20 for your question. We are going to try to get it  
21 answered.

22 MR. COLLINS: Tonight is the Augmented  
23 Inspection Team exit meeting. I think if you have been  
24 watching NRC all over the years, you understand our  
25 processes. You might even know them better than I do,

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1 for all I know.

2 But you know that inspection process does  
3 not provide opportunity for hearing. I'm not defending  
4 that. I'm just being straightforward with you to let  
5 you know. That is the process we're in and we do intend  
6 to follow our processes.

7 I will go on further to say, though, that  
8 because we are so early on in to understanding what the  
9 exact resolution of this problem will be, I cannot say  
10 we will have a hearing and I can't say we will not have  
11 a hearing. It's possible that when we consider the  
12 actions that need to be taken by Edison that it will  
13 drive us into the hearing process.

14 And so I just don't know the answer to it  
15 tonight. But the inspection process does not send us  
16 there.

17 MR. HERSH: (Off-mic).

18 MR. COLLINS: I have been back to my  
19 superiors and with this question and we are in  
20 collaboration on whether or not such a hearing is  
21 possible. So, thank you.

22 FACILITATOR DANIEL: All right. Okay.  
23 Brian. Brian Crosby. (Phonetic).

24 MR. CROSBY: First of all, thank you for  
25 the opportunity to have these sort of discussions. It's

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1 my understanding that there is a nuclear plant in Ohio,  
2 Davis-Besse, that has recently discovered a similar  
3 pinhole leak in that facility.

4 My question is to the NRC, what effects will  
5 this have on the overall nuclear -- the overall nuclear  
6 industry?

7 And secondly, just another quick question  
8 is when this facility comes back up, is there a specific  
9 percentage capacity that it will be operating at and  
10 if so -- I know you don't want to give specific time  
11 lines, but can we expect maybe a testing period and then  
12 a shutdown and full-blown -- yes, bring it up --  
13 full-blow, bad choice of words, but full-on, 100 percent  
14 capacity startup?

15 FACILITATOR DANIEL: Thank you, Brian.

16 MR. WERNER: Again, I'll do Davis-Besse  
17 last. Again, no decision has been made for restart and  
18 those decisions haven't been finalized. I can't  
19 speculate on what the power would be.

20 But there will be, if you look at the  
21 Confirmatory Action Letter, talks about a mid cycle  
22 outage. So when we say mid cycle, that could be two  
23 months, that could be three months, that could be four  
24 months. Again, that will have to be part of the action  
25 going forward. But again, no decision has been made

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1 on start up.

2 As far as Davis-Besse, I'm not aware of  
3 that, but I know we do -- actually, Emmett might be able  
4 to answer that question better than I. But we are  
5 actually -- his office is working on what we call an  
6 Information Notice that talks about some other recent  
7 issues with steam generators.

8 So again, just to reemphasize, where does  
9 occurring steam generators -- the idea is not to have  
10 unexpected wear and make sure when you do have wear,  
11 you monitor it so it doesn't cause an issue of where  
12 you have a leak. And that's why there is an inspection  
13 program, because it is a mechanical system, and you do  
14 get wear.

15 Emmett, do you know specifically about  
16 Davis-Besse?

17 MR. MURPHY: (Off-mic)

18 MR. WERNER: Okay. Did you hear that?  
19 Emmett is not aware of what's going on with Davis-Besse.

20 So I'm sorry, can't answer that. But again, there are  
21 several -- I want to say three or four sites, that have  
22 had recent steam generator tube issues that are  
23 being -- an Information Notice that described what  
24 occurred is being put out in industry.

25 FACILITATOR DANIEL: Mr. Campbell, do you

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1 have a question about steam tubes?

2 MR. CAMPBELL: So, first of all, I want to  
3 say that Southern California Edison is a privately owned  
4 company and if they made a decision that didn't produce  
5 the most profits for their shareholders, then they would  
6 be removed.

7 FACILITATOR DANIEL: Is this about steam  
8 tubes, though?

9 MR. CAMPBELL: It's getting there.

10 FACILITATOR DANIEL: All right.

11 MR. CAMPBELL: This guy, Salzman -- I went  
12 to the Diablo seismic hearings in the fall of 1980 and  
13 Salzman headed the three-man atomic safety and licensing  
14 appeals board panel, note that safety and licensing are  
15 on the same board. They have approved all licenses,  
16 to my knowledge, and to my knowledge, haven't granted  
17 any appeals. So, and then Chairman Salzman got  
18 appointed to a federal judgeship shortly before he ruled  
19 Diablo was seismically safe, we can rest assured.

20 And then the Dietrich fellow with Edison,  
21 I guess, he mentioned that over the longer term life  
22 of the plant, as if it's an assumption that we're going  
23 fire it up and have a longer life of the plant, and then  
24 Dietrich introduced the fellow who mentioned, prior to  
25 re-start, as if that's the obvious conclusion of where

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1 this process is heading.

2 And regarding the steam generator tubes,  
3 there is supposed to be a difference in the vibration  
4 bars between Units 2 and 3. Now, Edison installed one  
5 of the reactor vessels 180 degrees backwards, discovered  
6 some months later, and decided to rewire the control  
7 room and turn other things around to fit the backward  
8 reactor.

9 Is the difference in the tube wear possibly  
10 related to one of the reactor vessels being installed  
11 180 degrees backward, or what accounts for the  
12 difference? Thank you.

13 MR. WERNER: I'm sorry. I never heard  
14 about a 180 degree backward reactor vessel. Can't  
15 comment on that.

16 MR. CAMPBELL: At the San Clemente hearing  
17 I asked the question -- I mentioned that and the guy  
18 said, "Well, it is true one of the reactors had the  
19 out-of-design orientation." So it is not a backward  
20 reactor. It's an out-of-design orientation. Anyway,  
21 talk to the guy that answered that question in San  
22 Clemente.

23 FACILITATOR DANIEL: We'll try to look into  
24 that. Okay?

25 MR. COLLINS: Well, at the risk of speaking

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1 for the team, I don't think that's been identified as  
2 one of the causes. The installed configuration of the  
3 steam generators was compared and looked at between  
4 Units 2 and 3 and they didn't identify any configuration  
5 differences in the units as a likely, or even prospective  
6 cause, I think, for the issue.

7 PARTICIPANT: Thank you for answering the  
8 questions as best as you can tonight. There was one  
9 that was asked about the damage that was done to the  
10 steam generators and so forth, and how that might be  
11 affected by the level of seismic activity that could  
12 be expected in California, just as it was expected in  
13 Japan when they were planning for a 7.0 quake and had  
14 a 9.0 quake.

15 We had a 4.2 one last week in Whittier.  
16 That's not too far from here, and there is a big one  
17 expected sometime in the future, whether it happens  
18 precisely in San Onofre or nearby, it is going to affect  
19 those steam generators and all the other fragile  
20 equipment here and it's going to affect the lives of  
21 eight million people.

22 Don't you know what capacity of earthquake  
23 in this area this plant is built for?

24 MR. WERNER: As Elmo indicated earlier,  
25 yes. Again, it is based on ground acceleration, not

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1 magnitude. They are somewhat related, but not related.

2 So, the steam generator tubes, again, during initial  
3 design, seismic is taken into consideration. And  
4 that's, again, why the tubes are tested to ensure that  
5 they can maintain a tube integrity through all accident  
6 condition situations.

7 MR. COLLINS: I'll add to that answer. You  
8 know, at the original licensing of the plant the seismic  
9 hazard was established, and it did take into  
10 consideration the faults and the potential movement of  
11 the faults and the energy in the faults, which would  
12 translate into a magnitude earthquake.

13 But then you have got to build the plant  
14 to something. And so how would that translate over what  
15 distance, what's the soil, what are the characteristics  
16 of that, to translate that energy to ground acceleration  
17 at the site.

18 And so that's what determined the 0.67 gs  
19 acceleration that the site is designed for. Then in  
20 addition to that, though, because of the accident in  
21 Japan, the NRC right now is requiring all nuclear power  
22 plant licensees to go back and reestablish that seismic  
23 hazard characterization based on the best, the latest  
24 and maybe even have to go get some new information about  
25 the seismic hazard, so we can make sure we understand

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1 the hazard, make sure the plant is built strong enough  
2 to protect against it.

3 So, it's a major, important question here  
4 in Southern California that we get this right. So thank  
5 you.

6 FACILITATOR DANIEL: All right. Thank  
7 you.

8 MS. GREENBERG: Lenore Greenberg  
9 (phonetic). It's become obvious to everybody here that  
10 these tubes are horrendously dangerous, unreliable,  
11 unpredictable and represent a tremendous threat to our  
12 lives and the lives of our families.

13 And I'm not so sure about whether safety  
14 is the first consideration here, especially for Edison.  
15 I think that profit is.

16 And when it comes to these tubes, one of  
17 the articles in the newspaper, I know this is some of  
18 the propaganda of Edison, was that they were  
19 talking -- the young man started to mention it -- they  
20 were talking about opening this facility 50 percent,  
21 or some level like that. What I want to know from the  
22 NRC people is would that make those tubes safe?

23 FACILITATOR DANIEL: Thank you.

24 MR. WERNER: Well, again, no decision has  
25 been made for restart, and we don't know what that level

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1 of power is going to be, but it will have to be evaluated.

2 So, again, the decision could be no restart or the  
3 decision could be to restart. So that hasn't been made.

4 I just want to make things clear.

5 So again, we don't know what power level  
6 it will be, but clearly if they reduce power, there will  
7 be a reduction in the steam flow velocity that we talked  
8 about, but again, that's not the only thing that's  
9 causing the issue with the vibration.

10 So there's multiple causes and multiple  
11 corrective actions that have to be taken, and again,  
12 we are waiting to see what they are before we can make  
13 a safety decision because we can't make it yet.

14 And again, if it was right now, if you asked  
15 me right now, again, that's why they are shut down,  
16 because right now it's not safe.

17 MS. GREENBERG: I realize you would not  
18 know the level, the percentage at which it would reopen.

19 But would any reduction in the percentage make those  
20 tubes safe, is what I'm asking.

21 MR. WERNER: Well again, without looking  
22 at multiple corrective actions, I can't answer that  
23 question. But if it was right now, with no other  
24 changes, again, my inclination would be no. But again,  
25 don't have all the information yet as far as additional

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1 corrective actions.

2 FACILITATOR DANIEL: Okay. Richard  
3 McPherson. (Phonetic)

4 MR. McPHERSON: Earlier, in talking about,  
5 I think it was Emmett that answered the question, there  
6 are some people here that are actually trying to  
7 understand everything that's said. And the term was  
8 used LOCA rarefaction pressure wave.

9 Well, LOCAs and those sort of things I  
10 understand a little bit, but some of the people around  
11 go, huh? And so, when you are giving a technical answer  
12 to something, please try to explain yourself in  
13 something that the people can understand.

14 And when you talk about LOCA, a lot of us  
15 have lived with those for four years and thought about  
16 them for more \*\*\*12:59:03 (phonetic). But a lot of  
17 people here that are serious people haven't, and they  
18 would like to know what things like that mean. Thank  
19 you. And thank you to the people that work at SONGS  
20 for what you do. You do a great job.

21 FACILITATOR DANIEL: Thank you.

22 MR. COLLINS: Thank you for your comment.  
23 We live and work in this business every day. And  
24 sometimes these things just slip out of our mouth. We  
25 don't even really realize we're not using plain

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1 language. So we appreciate your patience and your  
2 listening and your understanding tonight, as we do try  
3 and will try to convey it in plain language so you can  
4 understand. So, thank you.

5 MR. WERNER: And again, a LOCA is a loss  
6 of coolant accident.

7 PARTICIPANT: Just briefly, I wonder  
8 before Edison tries to fix these -- looking like huge  
9 problems -- before ratepayers get asked to pay for this,  
10 can you provide an honest cost comparison with, say,  
11 solar panels, solar energy or alternative energy?

12 FACILITATOR DANIEL: That might be a little  
13 off the subject, ma'am, but that's something -- well,  
14 I know it may not be for folks here tonight. We are  
15 on a certain topic. That's a question that might be  
16 forwarded --

17 (Off-mic response from participant)

18 FACILITATOR DANIEL: I understand, but,  
19 okay. Okay. All right. Thank you.

20 (Applause)

21 MS. GILMORE: Hi. Donna Gilmore  
22 (phonetic). I'm a close neighbor of San Onofre. In  
23 the newspaper -- to answer your question about  
24 alternatives, we don't need any alternatives because  
25 we have about 40 percent surplus in every alphabet soup

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1 government agency and electric grid operators have said  
2 we have plenty of power, we will not have a blackout  
3 this summer. So, you know, to answer that question.

4 So then that raises the other question, why  
5 do we need to take this risk, but, maybe that's off topic,  
6 I don't know. Anyway, in 2009 when they  
7 installed -- you're holding that, I don't need to hold  
8 your hand -- when they installed the first generator,  
9 there was a quote in the newspaper, "The new steam  
10 generator is designed to last longer," said Mike Warden,  
11 manager of the steam generator replacement project.  
12 "They are designed for 40 years," he said. "We expect  
13 we'll actually be able get 60 years out of it. Better  
14 materials, better designs. You learn over the course  
15 of the year what works well and what doesn't and you  
16 try to build that into the next generation."

17 And then we had a special team of NRC  
18 inspectors, and specialists in steam generators. And  
19 I'm thinking about this quote, as I'm listening to all  
20 these experts that we brought in and all the different  
21 ones that Edison said they are bringing in, and I, you  
22 know, I have a lot of respect for your skills and  
23 everything.

24 But there's a limit and there's still a  
25 risk. There's probabilities. And then you're talking

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1 about earthquakes even. Earthquakes is just a freaking  
2 guess, you know. They come on suddenly.

3 So I'm listening to this, experts, and when  
4 I see what happened, where it leaked radiation after  
5 a year, and we were just lucky it wasn't a bigger  
6 accident, why are we taking these risks for energy we  
7 don't need? And I just can't have faith, you know?  
8 I mean, that's the bottom line. Why would we boil water  
9 with something that could destroy California, destroy  
10 our food supply, also get to your house in Texas. You  
11 know, why are we taking this risk for energy we don't  
12 need? And I know you guys are working hard and you're  
13 putting in a lot of time on this. And I appreciate all  
14 your hard work.

15 But I feel like Alice in Wonderland here,  
16 you know, dropped down some hole, and this is just  
17 craziness.

18 (Applause)

19 FACILITATOR DANIEL: Thank you, Donna.  
20 Elmo?

21 MR. COLLINS: I think this -- I really  
22 appreciate your sentiment, you know. I can convey to  
23 you the Nuclear Regulatory Commission, we are  
24 established by law. We have a certain job to do. But  
25 we are not advocates or opponents to the use of nuclear

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1 energy to generate electricity. What the law charges  
2 us to do is, if it is going to be done, if that decision  
3 is made, and it's implemented, to make sure it's done  
4 safely.

5 And we're set up as an independent agency,  
6 and that was for a reason, because back in 1975, the  
7 wisdom of Congress said we don't want the safety question  
8 to really be compromised to the extent that it can.

9 So, once that national policy decision was  
10 made and the laws are put in place, you know, the agency  
11 then is charged to go out and carry out that. And so  
12 that's where we are at today.

13 We have got to make sure the regulations  
14 are met, and I think even beyond that, I have worked  
15 with licensee enough to know, that they are working to  
16 reduce the risk.

17 And the question, your question is why do  
18 you accept the risk using this method of generating  
19 electricity. You know, that's a decision that is not  
20 mine to make. Mine is to follow the law. I understand  
21 your concern.

22 MS. GILMORE: (Off-mic)

23 MR. COLLINS: Exactly. I agree with you.

24 MS. GILMORE: (Off-mic)

25 MR. COLLINS: That was a key factor, we

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1 think, from the steam and that issue has to be understood  
2 more fully and resolved before the unit is returned to  
3 power, clearly.

4 That resolution has not been given to me,  
5 and it is a difficult technical issue, I would offer  
6 to you, or the answers would have already been evident.

7 But they are not. A lot of analysis, a lot of  
8 engineering evaluation is left to be done before the  
9 answer is produced. So we will take a look at it when  
10 we get it.

11 FACILITATOR DANIEL: Thank you, Elmo. We  
12 had a question, a clarification for Toni Iseman here.

13 MS. ISEMAN: Hi, earlier in the evening  
14 there was reference to the decommissioning of Unit 1  
15 and what happens to the old generator. And the comment  
16 was that because it has more radioactivity, it's sent  
17 to another facility.

18 I was on the California Coastal Commission  
19 when Unit 1 was decommissioned and a lot of time was  
20 spent on how to get this generator on a raft, on a barge  
21 to go around the tip of South America to go to the  
22 Carolinas.

23 I found out after five hours on the web and  
24 asking probably 10 people from Edison where it was.  
25 They all assumed that it ended up in the Carolinas.

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1 It's buried on-site. The earlier reference was that  
2 because these are more radioactive, they should be  
3 moved.

4 MR. WARNICK: There was a  
5 misunderstanding. That is not what I said. I was not  
6 talking about Unit 1. I was talking about Units 2 and  
7 3 replacement, the old steam generators. So Unit 2 and  
8 3 is what I was talking about, and this is all happened  
9 within the last couple of years. So I'm not talking  
10 about Unit 1. It's something that happened years ago.

11 MS. ISEMAN: It wasn't that long ago. But  
12 the question comes up and the question, I think, is  
13 communication between Southern California Edison and  
14 the NRC. I wonder if you are aware of the fact that  
15 it was buried on-site.

16 MR. WARNICK: It's actually not buried.  
17 It's in a vessel above ground, and I see it every day,  
18 as I walk by.

19 MS. ISEMAN: Okay. Why did you spend a lot  
20 of -- why did Edison go to the trouble of these hearings,  
21 and lobbying the way they did, to move this, if, in fact,  
22 it was all right to leave it on-site? What happened that  
23 you didn't follow through with the approvals that were  
24 granted?

25 FACILITATOR DANIEL: Thank you, Toni.

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1 MR. WARNICK: It was years before my time.

2 FACILITATOR DANIEL: Peter?

3 MR. DIETRICH: The question, thank you for  
4 bringing it up. We're conflicting issues. What you  
5 were speaking about is the Unit 1 reactor vessel, which  
6 is from the original Unit 1 reactor. There is only one  
7 of those. It is still located on-site at San Onofre.  
8 We are working with shipping specialists for being able  
9 to secure a safe and insured and viable shipping  
10 alternative. That work continues.

11 We have not concluded, nor is it our plans  
12 to leave that reactor vessel on-site. But we have run  
13 into over the years numerous problems with proposed  
14 manners of shipping that original Unit 1 reactor vessel.

15 So that is what the issue that you're  
16 bringing up specifically relates to, and we are working  
17 quite diligently to continue to move that reactor vessel  
18 to its final storage location.

19 FACILITATOR DANIEL: Thank you, Peter.  
20 I'm going to go to the back here. These poor folks back  
21 here have been neglected all night. I was only back  
22 here once. Why don't you give us your name?

23 MR. McDOWELL: It's Chris McDowell  
24 (phonetic). My question is on Unit two. I heard some  
25 different language between the NRC and SoCalEd on sort

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1 of the restart.

2 And my question is, the NRC, will you  
3 discuss Unit 2 as segmented from Unit 3 as far as the  
4 restart? Are you separating that process?

5 And then the second question is, will you  
6 allow temporary fixes? I heard a little bit of language  
7 on long-term solutions versus the NRC saying we are  
8 looking at the final solution. What's NRC's  
9 perspective on both the long term and short term and  
10 what's the NRC's perspective on Unit 2 versus Unit 3?

11 FACILITATOR DANIEL: Thank you.

12 MR. WERNER: I'll take that question.  
13 Actually, the Confirmatory Action Letter does have  
14 different actions for Unit 2 and Unit 3, and that was  
15 based upon the tube degradation different.

16 The wear was very significant in Unit 3  
17 compared to Unit 2. So there are actions that are  
18 different. Now it is important, if you look at the  
19 Confirmatory Action Letter, one of the steps was to  
20 actually -- you have to determine what happened in Unit  
21 3 and take actions to make sure that same mechanism  
22 doesn't show up on Unit 2.

23 So, does that answer your question there?

24 MR. McDOWELL: So, are we going to see a  
25 resolution on Unit 2 before we are going to see a

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1 resolution on Unit 3 or are they going to happen at the  
2 exact same time?

3 MR. WERNER: Well, we anticipate, and we  
4 can let Southern California Edison answer that also,  
5 but we anticipate to have them come in with Unit 2 first  
6 and then Unit 3. But again, that hasn't been finalized.

7 It could change. I don't know what the final will be.

8 But we do anticipate Unit 2 before Unit 3 because of  
9 the severity on Unit 3.

10 FACILITATOR DANIEL: Thank you.

11 MR. KIRCHNER: Good evening. My name is  
12 Jeremy Kirchner. I am the emergency services  
13 coordinator for the city of Dana Point, located right  
14 next door to San Juan Capistrano. I'd just like to say  
15 a couple of things really quick.

16 First, thank you to the Nuclear Regulatory  
17 Commission for all the inspection process that's been  
18 going on with the steam generators and the routine  
19 inspections that happen at San Onofre every day.

20 Also, I'd like to just briefly mention the  
21 communication that we have as the City of Dana Point  
22 between Southern California Edison.

23 On numerous occasions, Mr. Dietrich and his  
24 staff have met with our city management, our elected  
25 officials, our emergency staff to update us on what has

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1 been going on throughout the steam generator process  
2 and this whole issue.

3 And we have routine discussions with other  
4 San Onofre staff also regarding what is going on with  
5 the plant, the status of inspections, and everything  
6 that is going on currently.

7 And that's not just something that has just  
8 happened in the last few months or since January, but  
9 those discussions have been ongoing since the city's  
10 incorporation in 1989 and even before that with the other  
11 jurisdictions.

12 So, from our position, the city of Dana  
13 Point, we are prepared to respond to any type of  
14 emergency, whether it's San Onofre or not, whether the  
15 plant is operating or not, and we hope that you would  
16 all do the same. Thank you all for being here tonight.

17 FACILITATOR DANIEL: Thank you.

18 (Applause)

19 MS. RIOKO: Hi, my name is Rioko  
20 (phonetic). I'm a naturalized citizen. I am born and  
21 raised in Japan. And I have a couple of questions.

22 You mentioned that steam amount was  
23 released 5.2 milligrams and I am not familiar with how  
24 to categorize steam to the milligrams. So could you  
25 please explain to me about the amount, the strength of

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1 the radiation at the source, \*\*\*1:12:28 (inaudible),  
2 in, millisieverts?

3 MR. WARNICK: The number that I mentioned  
4 was 5.2 times 10 to the minus 5. So that's 0.000052  
5 millirem. I can't in my head do the conversion to  
6 sieverts. I have a little conversion on my phone that  
7 I use. But I apologize. Here in the US, we use terms  
8 of rem and millirem and curies.

9 FACILITATOR DANIEL: It was 5.2 times 10  
10 to the minus 5?

11 MR. WARNICK: That's right. If you want  
12 to get with me after, I can put it into my little  
13 conversion --

14 MS. RIOKO: That was sieverts, right. And  
15 then the answer become millisieverts?

16 MR. WARNICK: Millirem. M-R-E-M. That's  
17 the --

18 MS. RIOKO: I understand milligrams.

19 MR. WARNICK: Yes, that's the unit that we  
20 use in the United States to assess radiation exposure  
21 to humans.

22 MS. RIOKO: Okay. And secondly --

23 MR. WARNICK: and the damage that it could  
24 cause.

25 MS. RIOKO: Okay. I hope I can find out,

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1 you know, the level in sievert, because I'm familiar  
2 with it. So, if you can put the answer in your website,  
3 it will be helpful.

4 And then also, secondly, I'd like to ask,  
5 it was supposed to be much lower amount than the limit,  
6 but what is the limit? Up until how much you can release,  
7 the amount of radiation?

8 MR. WARNICK: So, let me see if I understand  
9 the question. You are wondering how much the licensee  
10 can release in terms of radiation?

11 FACILITATOR DANIEL: Yes, what's the  
12 allowed amount?

13 MR. WERNER: Essentially the regulatory  
14 limit is 100 millirem to somebody, a member of the  
15 public, but there's lower limits. And I want to say  
16 it's give millirem. You have to forgive me. I don't  
17 remember the exact number. I believe it's five millirem  
18 for gaseous and three millirem for liquid. I could have  
19 it backwards. But again, it's a very low level. That's  
20 for a year.

21 And then going from, again, I'm going from  
22 memory, the effluent that was released last year from  
23 SONGS was, and I'm probably going to be high, was no  
24 more than a 10th of a millirem to a member of the public.

25 So that would be 0.1 millirem, and that's probably too

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1 high by a factor of 10 approximately.

2 So 0.1 millirem was what was released, both  
3 gaseous and liquid effluent at SONGS last year. Again,  
4 I could be off a little bit, but it's pretty close to  
5 that value.

6 FACILITATOR DANIEL: All right. Final  
7 question here.

8 MR. WARNICK: Let me just interject. To  
9 make sure we get your response back to that conversion,  
10 if you could fill out a feedback form and ask your  
11 question, that will ensure that we can get directly back  
12 to you.

13 MS. RIOKO: And the steam, what kind of  
14 radioisotopes were existing?

15 MR. WERNER: Again, without looking at  
16 specifics, I think it's argon, noble gas -

17 MR. WARNICK: And iodine.

18 MR. WERNER: Yes, iodine. Thank you.

19 MR. WARNICK: The predominant  
20 radionuclides released were argon 41, xenon 133, xenon  
21 136, I'm sorry, 135, and then there was some iodide  
22 components too, noble gases.

23 FACILITATOR DANIEL: Yes, sir. What's  
24 your name?

25 MR. JOHNSTON: Harold Johnston (phonetic),

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1 San Diego. When you talk about tube wear greater than  
2 10 percent, so what's the upper limit on tube degradation  
3 that you're going to accept before you say it's bad,  
4 and how do you monitor wear, tube wear and vibration  
5 while the unit is running?

6 MR. WERNER: On the tube plugging, there  
7 actually a limit in tech spec, it is limited at 35  
8 percent. Once you reach that level it has to be plugged.

9 But again, that's a simplistic answer of course.

10 When they do the steam generator  
11 inspections, before they restart, they have to go ahead  
12 and do analysis to show that that won't be reached before  
13 the next outage because, again, if it happens, it's not  
14 acceptable per technical specifications.

15 So they have to go ahead and make an analysis  
16 to show that they won't have that much wear before the  
17 next time they get to the outage. I'm sorry. What was  
18 your last question?

19 MR. JOHNSTON: How are you able to evaluate  
20 degradation and amount of vibration while the unit is  
21 running?

22 MR. WERNER: Actually, there is no current  
23 way right now that you can evaluate vibration with the  
24 unit is running. It's actually being looked at as a  
25 potential method in the future.

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1           They are doing it on boiling water reactors,  
2           which is a different type of reactor. Different -- a  
3           little slightly environment, not as harsh, but it  
4           doesn't last for very long because it is a very harsh  
5           environment. And you just can't go stick that on the  
6           tubes because you may create an issue. If that detector  
7           was to fall off, it could actually cause tube wear and  
8           tube damage and cause a leak. So there are issues that  
9           have to be explored before that gets done.

10           FACILITATOR DANIEL: All right. Mr. Cruz  
11           has a question.

12           MR. CRUZ: Yes. Had there been no  
13           unexpected tube-to-tube degradation and were there not  
14           to be some major local seismic event and were everything  
15           to go as projected, what would have been the minimum  
16           extended life expectancy of this plant?

17           And I ask this to get some idea of whether  
18           Southern Cal Edison has a sound business plan.

19           FACILITATOR DANIEL: Thank you.

20           MR. WERNER: I'm not sure I totally  
21           understand your question, but the plants were originally  
22           designed for 40 years.

23           MR. CRUZ: Yes, I was thinking about  
24           approximately \$700 million already spent on the renewal  
25           and upgrading of the plant, all the additional costs

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1 which will come from modifying the flaws that have been  
2 found, and about the approximate loss of \$1 million  
3 dollars a day from lost revenue. So, this is -- these  
4 little half-inch tubes have quite an expensive bottom  
5 line.

6 FACILITATOR DANIEL: Thank you, Mr. Cruz.

7 Next question.

8 PARTICIPANT: Given the -- my  
9 understanding is that the plant originally, on its  
10 40-year licensing agreement, would end in 2014. Is that  
11 correct?

12 MR. WARNICK: 2022. There's essentially  
13 10 years left --

14 PARTICIPANT: Okay. So how did the -- this  
15 is my first question -- how did the Nuclear Regulatory  
16 Commission find it acceptable to have, as I understand  
17 it, two \$600 million steam generators approved for a  
18 plant that only had 10 years left, in the hopes that  
19 it would last 40 to 60 years, given that my understanding  
20 is that any machinery -- it's sort of like a car, I think  
21 of it as a car, where if you don't do any tune-ups on  
22 a car, beautiful muscle car that was built in, say, the  
23 '60s and then you turn around and say, "Oh, I think it's  
24 time for a tune-up," that car doesn't -- everyone  
25 probably will know it, if they don't already -- knows

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1 that that car doesn't adjust well to that tune-up and  
2 it never runs quite the same again.

3 So I'm wondering, again, how the NRC  
4 approved new steam generators that will last 40 to 60  
5 years when the licensing only goes for another 10?

6 MR. WERNER: Again, that's not considered  
7 as part of what the NRC looks at as far as the economic  
8 life, and it's based upon safety. The old generators  
9 did have some issues. They couldn't reach full power  
10 and the utility decided to go ahead and upgrade.

11 So we looked at it, again, from a safety  
12 perspective, not from an economic perspective.

13 FACILITATOR DANIEL: Last question, from  
14 this lady.

15 PARTICIPANT: I have a question about the  
16 exact design change and since I have to include it in  
17 my second question, I want to know whether the U design  
18 was changed to a V design and if any of these concerns  
19 were brought up by the whistle blower that was hushed  
20 recently by the Southern California Edison company?

21 (Whereupon, at 1:21 p.m., DVD 3 ended)

22  
23  
24  
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