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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

+ + + + +

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.)

1
2
3 MR. STEINMETZ: (Joins during progress) the
4 50.90 rule. The changed tube supports should have
5 fallen under the 50.90 rule. The add flow restrictors
6 should have fallen under the changed tube report. Any
7 additional water volume, the feedwater distribution
8 ring, as well.

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

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

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

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

21 MR. RIVERA-ORTIZ: Okay. Just for
22 clarification, when we talk about 50.59, we're talking
23 about Title 10 of the Code of Federal Regulations,
24 Section 50.59. And that section of the regulation
25 establishes the threshold for regulatory review for

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1 planned changes that are applicable to that regulation.

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

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

14 And as Greg said, we still need to review.
15 We have more inspection to do in that area. But at
16 this time we don't have any indications that those
17 particular components were required to -- for a License
18 Amendment. The licensee did consider those in one other
19 process.

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

25 And that process was done in the course of the industry

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1 process that we endorse through our regulatory guide.

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

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

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

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

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

14 MR. WERNER: Yes. Yes.

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

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

24 They were severe enough to even consider
25 returning two of the generators to Japan. What were

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

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

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

18 FACILITATOR DANIEL: John.

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

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1 your understanding of that?

2 (Off-mic question)

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

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

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

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

25 But again, we did not find that those

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1 contributed at all to the steam generator tube wear.

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

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

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

23 MR. REYNOSO: So, what you're saying is if
24 there is a larger accident, a larger leak than what there
25 was, the containment dome provides no protection?

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

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

17 MR. MURPHY: (Off-mic)

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

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

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

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1 and depressurize it so the primary system is less than
2 the secondary system, so it stops the leak.

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

8 FACILITATOR DANIEL: Thank you Greg.
9 Sharon Hoffman, (phonetic) go ahead.

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

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

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

24 Are you going back to look at every other application
25 of this sort that you have approved in the last 10, 20,

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1 50 years? So that's my first technical question.

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

5 MS. HOFFMAN: All right.

6 FACILITATOR DANIEL: All right.

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

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

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

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

23 And so that falls back to the engineering design review,
24 independent verification, all those engineering
25 principles that are at stake that we all rely on for

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

6 FACILITATOR DANIEL: All right, Sharon.
7 Your second question?

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

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

19 Engineering failures do not happen in
20 isolation, and so I would ask the technical team to what
21 degree they are considering what might have happened
22 and what could happen in the future if that steam
23 generator went flying out, hit another tube, hit another
24 tube and next thing we know we have a much larger release
25 of radiation.

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1 FACILITATOR DANIEL: All right. Thank
2 you, Sharon.

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

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

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

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

18 FACILITATOR DANIEL: A logistics question,
19 final question? Right?

20 MS. HOFFMAN: Yes. The logistics question
21 is there was an opportunity to submit questions
22 beforehand. We were told there would be opportunity
23 to follow up with written questions. What are the
24 mechanics for distributing the answers to those
25 questions, and to any questions you were unable to answer

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1 this evening, to the public?

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

11 FACILITATOR DANIEL: All right, Mr. Dan
12 Hersh. (Phonetic)

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

18 We wouldn't be here today if Edison had told
19 the NRC these were significant design changes and we
20 should go through a License Amendment process that the
21 public can be part of the review and there should be
22 a thorough review. And we wouldn't be here today if
23 NRC had said we are going to do a License Amendment with
24 a full public hearing and with full review.

25 In light of that long history of things like

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

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

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

23 Through months we have been asking how many
24 tubes have you found with wear and we've been frankly
25 given the run-around.

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

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

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

11 FACILITATOR DANIEL: All right.

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

14 (Applause)

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

23 Now, there was other issues on the other
24 generators on Unit 2, have to do with any Unit 3 retainer
25 bar, which I also discussed, and those were measured

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1 and plugged to address that issue.

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

5 (Off-mic question)

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

10 FACILITATOR DANIEL: Hang on, folks. Hang
11 on. Hang on.

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

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

21 Would that be acceptable to you?

22 (Applause)

23 MR. HERSH: (Off-mic)

24 FACILITATOR DANIEL: Listen, how about
25 this. He committed to putting the information on the

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1 public website so that it's publicly available. Rather
2 than him approximating, how about he does it right?
3 He's made a commitment to do that. All right. Hang
4 on.

5 MR. DIETRICH: Thank you for the question.

6 We will get you the specific numbers. Just a second.

7 I will share the percentages with you tonight. But
8 please keep in mind that we have already mentioned that
9 we measure on each tube, on each of the 9727 tubes on
10 each steam generator, we look for -- there could be
11 several wear indications as these tubes move through
12 the tube support plates.

13 Rough numbers, rough percentages on Unit
14 3, nine percent of the tubes in the Unit 3 steam
15 generators, so 19,454 tubes in the Unit 3 steam
16 generators, nine percent of them showed wear with greater
17 than 10 percent through-wall indications. Nine
18 percent.

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

21 Let me share with you that compared to other steam
22 generators in the industry, those numbers by themselves
23 are not alarming.

24 (Participant off-mic)

25 MR. dietrich: What is alarming, and the

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1 reason we are here tonight, is because of the unexpected
2 tube-to-tube wear. We will get you the specific
3 information with that, with those numbers. On Unit 3,
4 we saw 326 tubes, with tube-to-tube wear, greater than
5 10 percent through-wall.

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

14 (Participant off-mic)

15 (Applause)

16 FACILITATOR DANIEL: Thank you. Thank you
17 for your question. We are going to try to get it
18 answered.

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

24 But you know that inspection process does
25 not provide opportunity for hearing. I'm not defending

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1 that. I'm just being straightforward with you to let
2 you know. That is the process we're in and we do intend
3 to follow our processes.

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

11 And so I just don't know the answer to it
12 tonight. But the inspection process does not send us
13 there.

14 MR. HERSH: (Off-mic).

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

19 FACILITATOR DANIEL: All right. Okay.
20 Brian. Brian Crosby. (Phonetic).

21 MR. CROSBY: First of all, thank you for
22 the opportunity to have these sort of discussions. It's
23 my understanding that there is a nuclear plant in Ohio,
24 Davis-Besse, that has recently discovered a similar
25 pinhole leak in that facility.

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1 My question is to the NRC, what effects will
2 this have on the overall nuclear -- the overall nuclear
3 industry?

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

12 FACILITATOR DANIEL: Thank you, Brian.

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

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

24 As far as Davis-Besse, I'm not aware of
25 that, but I know we do -- actually, Emmett might be able

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1 to answer that question better than I. But we are
2 actually -- his office is working on what we call an
3 Information Notice that talks about some other recent
4 issues with steam generators.

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

12 Emmett, do you know specifically about
13 Davis-Besse?

14 MR. MURPHY: (Off-mic)

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

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

22 FACILITATOR DANIEL: Mr. Campbell, do you
23 have a question about steam tubes?

24 MR. CAMPBELL: So, first of all, I want to
25 say that Southern California Edison is a privately owned

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1 company and if they made a decision that didn't produce
2 the most profits for their shareholders, then they would
3 be removed.

4 FACILITATOR DANIEL: Is this about steam
5 tubes, though?

6 MR. CAMPBELL: It's getting there.

7 FACILITATOR DANIEL: All right.

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

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

24 And regarding the steam generator tubes,
25 there is supposed to be a difference in the vibration

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1 bars between Units 2 and 3. Now, Edison installed one
2 of the reactor vessels 180 degrees backwards, discovered
3 some months later, and decided to rewire the control
4 room and turn other things around to fit the backward
5 reactor.

6 Is the difference in the tube wear possibly
7 related to one of the reactor vessels being installed
8 180 degrees backward, or what accounts for the
9 difference? Thank you.

10 MR. WERNER: I'm sorry. I never heard
11 about a 180 degree backward reactor vessel. Can't
12 comment on that.

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

20 FACILITATOR DANIEL: We'll try to look into
21 that. Okay?

22 MR. COLLINS: Well, at the risk of speaking
23 for the team, I don't think that's been identified as
24 one of the causes. The installed configuration of the
25 steam generators was compared and looked at between Units

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1 2 and 3 and they didn't identify any configuration
2 differences in the units as a likely, or even prospective
3 cause, I think, for the issue.

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

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

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

21 MR. WERNER: As Elmo indicated earlier,
22 yes. Again, it is based on ground acceleration, not
23 magnitude. They are somewhat related, but not related.

24 So, the steam generator tubes, again, during initial
25 design, seismic is taken into consideration. And

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1 that's, again, why the tubes are tested to ensure that
2 they can maintain a tube integrity through all accident
3 condition situations.

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

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

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

25 So, it's a major, important question here

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1 in Southern California that we get this right. So thank
2 you.

3 FACILITATOR DANIEL: All right. Thank
4 you.

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

10 And I'm not so sure about whether safety
11 is the first consideration here, especially for Edison.

12 I think that profit is.

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

20 FACILITATOR DANIEL: Thank you.

21 MR. WERNER: Well, again, no decision has
22 been made for restart, and we don't know what that level
23 of power is going to be, but it will have to be evaluated.

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

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1 I just want to make things clear.

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

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

11 And again, if it was right now, if you asked
12 me right now, again, that's why they are shut down,
13 because right now it's not safe.

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

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

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

24 FACILITATOR DANIEL: Okay. Richard
25 McPherson. (Phonetic)

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

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

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

18 FACILITATOR DANIEL: Thank you.

19 MR. COLLINS: Thank you for your comment.
20 We live and work in this business every day. And
21 sometimes these things just slip out of our mouth. We
22 don't even really realize we're not using plain language.
23 So we appreciate your patience and your listening and
24 your understanding tonight, as we do try and will try
25 to convey it in plain language so you can understand.

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1 So, thank you.

2 MR. WERNER: And again, a LOCA is a loss
3 of coolant accident.

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

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

14 (Off-mic response from participant)

15 FACILITATOR DANIEL: I understand, but,
16 okay. Okay. All right. Thank you.

17 (Applause)

18 MS. GILMORE: Hi. Donna Gilmore
19 (phonetic). I'm a close neighbor of San Onofre. In
20 the newspaper -- to answer your question about
21 alternatives, we don't need any alternatives because
22 we have about 40 percent surplus in every alphabet soup
23 government agency and electric grid operators have said
24 we have plenty of power, we will not have a blackout
25 this summer. So, you know, to answer that question.

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

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

21 But there's a limit and there's still a
22 risk. There's probabilities. And then you're talking
23 about earthquakes even. Earthquakes is just a freaking
24 guess, you know. They come on suddenly.

25 So I'm listening to this, experts, and when

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

12 But I feel like Alice in Wonderland here,
13 you know, dropped down some hole, and this is just
14 craziness.

15 (Applause)

16 FACILITATOR DANIEL: Thank you, Donna.
17 Elmo?

18 MR. COLLINS: I think this -- I really
19 appreciate your sentiment, you know. I can convey to
20 you the Nuclear Regulatory Commission, we are
21 established by law. We have a certain job to do. But
22 we are not advocates or opponents to the use of nuclear
23 energy to generate electricity. What the law charges
24 us to do is, if it is going to be done, if that decision
25 is made, and it's implemented, to make sure it's done

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1 safely.

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

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

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

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

19 MS. GILMORE: (Off-mic)

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

21 MS. GILMORE: (Off-mic)

22 MR. COLLINS: That was a key factor, we
23 think, from the steam and that issue has to be understood
24 more fully and resolved before the unit is returned to
25 power, clearly.

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

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

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

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

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

20 I found out after five hours on the web and
21 asking probably 10 people from Edison where it was.
22 They all assumed that it ended up in the Carolinas.
23 It's buried on-site. The earlier reference was that
24 because these are more radioactive, they should be moved.

25 MR. WARNICK: There was a misunderstanding.

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

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

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

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

21 FACILITATOR DANIEL: Thank you, Toni.

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

23 FACILITATOR DANIEL: Peter?

24 MR. DIETRICH: The question, thank you for
25 bringing it up. We're conflicting issues. What you

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1 were speaking about is the Unit 1 reactor vessel, which
2 is from the original Unit 1 reactor. There is only one
3 of those. It is still located on-site at San Onofre.

4 We are working with shipping specialists for being able
5 to secure a safe and insured and viable shipping
6 alternative. That work continues.

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

11 So that is what the issue that you're
12 bringing up specifically relates to, and we are working
13 quite diligently to continue to move that reactor vessel
14 to its final storage location.

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

19 MR. McDOWELL: It's Chris McDowell
20 (phonetic). My question is on Unit two. I heard some
21 different language between the NRC and SoCalEd on sort
22 of the restart.

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

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

7 FACILITATOR DANIEL: Thank you.

8 MR. WERNER: I'll take that question.
9 Actually, the Confirmatory Action Letter does have
10 different actions for Unit 2 and Unit 3, and that was
11 based upon the tube degradation different.

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

19 So, does that answer your question there?

20 MR. McDOWELL: So, are we going to see a
21 resolution on Unit 2 before we are going to see a
22 resolution on Unit 3 or are they going to happen at the
23 exact same time?

24 MR. WERNER: Well, we anticipate, and we
25 can let Southern California Edison answer that also,

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1 but we anticipate to have them come in with Unit 2 first
2 and then Unit 3. But again, that hasn't been finalized.

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

4 But we do anticipate Unit 2 before Unit 3 because of
5 the severity on Unit 3.

6 FACILITATOR DANIEL: Thank you.

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

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

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

19 On numerous occasions, Mr. Dietrich and his
20 staff have met with our city management, our elected
21 officials, our emergency staff to update us on what has
22 been going on throughout the steam generator process
23 and this whole issue.

24 And we have routine discussions with other
25 San Onofre staff also regarding what is going on with

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1 the plant, the status of inspections, and everything
2 that is going on currently.

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

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

13 FACILITATOR DANIEL: Thank you.

14 (Applause)

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

18 You mentioned that steam amount was
19 released 5.2 milligrams and I am not familiar with how
20 to categorize steam to the milligrams. So could you
21 please explain to me about the amount, the strength of
22 the radiation at the source, ***1:12:28 (inaudible),
23 in, millisieverts?

24 MR. WARNICK: The number that I mentioned
25 was 5.2 times 10 to the minus 5. So that's 0.000052

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1 millirem. I can't in my head do the conversion to
2 sieverts. I have a little conversion on my phone that
3 I use. But I apologize. Here in the US, we use terms
4 of rem and millirem and curies.

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

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

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

12 MR. WARNICK: Millirem. M-R-E-M. That's
13 the --

14 MS. RIOKO: I understand milligrams.

15 MR. WARNICK: Yes, that's the unit that we
16 use in the United States to assess radiation exposure
17 to humans.

18 MS. RIOKO: Okay. And secondly --

19 MR. WARNICK: and the damage that it could
20 cause.

21 MS. RIOKO: Okay. I hope I can find out,
22 you know, the level in sievert, because I'm familiar
23 with it. So, if you can put the answer in your website,
24 it will be helpful.

25 And then also, secondly, I'd like to ask,

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1 it was supposed to be much lower amount than the limit,
2 but what is the limit? Up until how much you can release,
3 the amount of radiation?

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

7 FACILITATOR DANIEL: Yes, what's the
8 allowed amount?

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

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

21 So that would be 0.1 millirem, and that's probably too
22 high by a factor of 10 approximately.

23 So 0.1 millirem was what was released, both
24 gaseous and liquid effluent at SONGS last year. Again,
25 I could be off a little bit, but it's pretty close to

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1 that value.

2 FACILITATOR DANIEL: All right. Final
3 question here.

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

9 MS. RIOKO: And the steam, what kind of
10 radioisotopes were existing?

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

13 MR. WARNICK: And iodine.

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

15 MR. WARNICK: The predominant
16 radionuclides released were argon 41, xenon 133, xenon
17 136, I'm sorry, 135, and then there was some iodide
18 components too, noble gases.

19 FACILITATOR DANIEL: Yes, sir. What's
20 your name?

21 MR. JOHNSTON: Harold Johnston (phonetic),
22 San Diego. When you talk about tube wear greater than
23 10 percent, so what's the upper limit on tube degradation
24 that you're going to accept before you say it's bad,
25 and how do you monitor wear, tube wear and vibration

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1 while the unit is running?

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

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

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

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

15 MR. JOHNSTON: How are you able to evaluate
16 degradation and amount of vibration while the unit is
17 running?

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

22 They are doing it on boiling water reactors,
23 which is a different type of reactor. Different -- a
24 little slightly environment, not as harsh, but it doesn't
25 last for very long because it is a very harsh environment.

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1 And you just can't go stick that on the tubes because
2 you may create an issue. If that detector was to fall
3 off, it could actually cause tube wear and tube damage
4 and cause a leak. So there are issues that have to be
5 explored before that gets done.

6 FACILITATOR DANIEL: All right. Mr. Cruz
7 has a question.

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

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

15 FACILITATOR DANIEL: Thank you.

16 MR. WERNER: I'm not sure I totally
17 understand your question, but the plants were originally
18 designed for 40 years.

19 MR. CRUZ: Yes, I was thinking about
20 approximately \$700 million already spent on the renewal
21 and upgrading of the plant, all the additional costs
22 which will come from modifying the flaws that have been
23 found, and about the approximate loss of \$1 million
24 dollars a day from lost revenue. So, this is -- these
25 little half-inch tubes have quite an expensive bottom

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1 line.

2 FACILITATOR DANIEL: Thank you, Mr. Cruz.

3 Next question.

4 PARTICIPANT: Given the -- my understanding
5 is that the plant originally, on its 40-year licensing
6 agreement, would end in 2014. Is that correct?

7 MR. WARNICK: 2022. There's essentially
8 10 years left --

9 PARTICIPANT: Okay. So how did the -- this
10 is my first question -- how did the Nuclear Regulatory
11 Commission find it acceptable to have, as I understand
12 it, two \$600 million steam generators approved for a
13 plant that only had 10 years left, in the hopes that
14 it would last 40 to 60 years, given that my understanding
15 is that any machinery -- it's sort of like a car, I think
16 of it as a car, where if you don't do any tune-ups on
17 a car, beautiful muscle car that was built in, say, the
18 '60s and then you turn around and say, "Oh, I think it's
19 time for a tune-up," that car doesn't -- everyone
20 probably will know it, if they don't already -- knows
21 that that car doesn't adjust well to that tune-up and
22 it never runs quite the same again.

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

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

6 So we looked at it, again, from a safety
7 perspective, not from an economic perspective.

8 FACILITATOR DANIEL: Last question, from
9 this lady.

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

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

17

18

19

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