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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

PRESENT: (CONTINUED)

GREGORY WERNER

ALSO PRESENT:

PETER DIETRICH, Southern California Edison Co.

DOUGLAS BAUDER, Southern California Edison Co.

THOMAS PALMISANO, Southern California Edison Co.

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 establishes the threshold for regulatory review for

planned changes that are applicable to that regulation.

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

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

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

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

process that we endorse through our regulatory guide.

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

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

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

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

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

MR. WERNER: Yes. Yes.

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

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

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

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

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

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

FACILITATOR DANIEL: John.

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

your understanding of that?

(Off-mic question)

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

MR. WERNER: Now you could be talking about the issue that was identified in Japan on the Unit 3 steam generator where it had the divider plate weld crack, that had to be repaired in Japan. That is a true statement, as far as they had to take extensive repair. I discussed that during the AIT portion of the exit. So, that was an area that the team specifically looked at because that would be the biggest differences between the two steam generators.

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

But again, we did not find that those

contributed at all to the steam generator tube wear.

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

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

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

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

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

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

MR. MURPHY: (Off-mic)

MR. WERNER: But not double-ended sheer.

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

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

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

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

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

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

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

And I'm wondering how you are applying that. Are you going back to look at every other application of this sort that you have approved in the last 10, 20,

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

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

MS. HOFFMAN: All right.

FACILITATOR DANIEL: All right.

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

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

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

The real question is how do we know it meets its design objectives when a design is made like that. And so that falls back to the engineering design review, independent verification, all those engineering principles that are at stake that we all rely on for

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

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

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

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

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

FACILITATOR DANIEL: All right. Thank you, Sharon.

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

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

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

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

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

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

this evening, to the public?

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

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

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

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

In light of that long history of things like

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

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

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

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

We have just been told by Edison we only found two tubes of trouble in Unit 2. We know that's not true because in early February you had nearly 900. So, will you tell us today how many tubes in Unit 2, how many tubes in Unit 3 have wear of greater than 10 percent, and also how many tubes in Unit 2 and in Unit 3 have shown any indication of wear?

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

FACILITATOR DANIEL: All right.

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

(Applause)

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

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

and plugged to address that issue.

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

(Off-mic question)

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

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

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

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

(Applause)

MR. HERSH: (Off-mic)

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

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

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

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

On Unit 2, 12 percent of the tubes showed wear greater than 10 percent through-wall indication. Let me share with you that compared to other steam generators in the industry, those numbers by themselves are not alarming.

(Participant off-mic)

MR. dietrich: What is alarming, and the

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

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

(Participant off-mic)

(Applause)

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

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

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

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

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

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

MR. HERSH: (Off-mic).

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

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

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

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

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

FACILITATOR DANIEL: Thank you, Brian.

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

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

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

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

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

Emmett, do you know specifically about Davis-Besse?

MR. MURPHY: (Off-mic)

MR. WERNER: Okay. Did you hear that? Emmett is not aware of what's going on with Davis-Besse. So I'm sorry, can't answer that. But again, there are several -- I want to say three or four sites, that have had recent steam generator tube issues that are being -- an Information Notice that described what occurred is being put out in industry.

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

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

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

FACILITATOR DANIEL: Is this about steam tubes, though?

MR. CAMPBELL: It's getting there.

FACILITATOR DANIEL: All right.

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. WERNER: As Elmo indicated earlier, yes. Again, it is based on ground acceleration, not magnitude. They are somewhat related, but not related. So, the steam generator tubes, again, during initial design, seismic is taken into consideration. And

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

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

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

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

So, it's a major, important question here

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

FACILITATOR DANIEL: All right. Thank you.

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

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

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

FACILITATOR DANIEL: Thank you.

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

I just want to make things clear.

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

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

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

MS. GREENBERG: I realize you would not know the level, the percentage at which it would reopen. But would any reduction in the percentage make those tubes safe, is what I'm asking.

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

FACILITATOR DANIEL: Okay. Richard McPherson. (Phonetic)

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

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

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

FACILITATOR DANIEL: Thank you.

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

So, thank you.

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

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

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

(Off-mic response from participant)

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

(Applause)

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

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

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

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

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

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

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

(Applause)

FACILITATOR DANIEL: Thank you, Donna. Elmo?

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

safely.

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

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

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

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

MS. GILMORE: (Off-mic)

MR. COLLINS: Exactly. I agree with you.

MS. GILMORE: (Off-mic)

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

That resolution has not been given to me, and it is a difficult technical issue, I would offer to you, or the answers would have already been evident. But they are not. A lot of analysis, a lot of engineering evaluation is left to be done before the answer is produced. So we will take a look at it when we get it.

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

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

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

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

MR. WARNICK: There was a misunderstanding.

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

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

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

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

FACILITATOR DANIEL: Thank you, Toni.

MR. WARNICK: It was years before my time.

FACILITATOR DANIEL: Peter?

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

were speaking about is the Unit 1 reactor vessel, which is from the original Unit 1 reactor. There is only one of those. It is still located on-site at San Onofre. We are working with shipping specialists for being able to secure a safe and insured and viable shipping alternative. That work continues.

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

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

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

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

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

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

FACILITATOR DANIEL: Thank you.

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

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

So, does that answer your question there?

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

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

but we anticipate to have them come in with Unit 2 first and then Unit 3. But again, that hasn't been finalized. It could change. I don't know what the final will be. But we do anticipate Unit 2 before Unit 3 because of the severity on Unit 3.

FACILITATOR DANIEL: Thank you.

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

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

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

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

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

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

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

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

FACILITATOR DANIEL: Thank you.

(Applause)

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

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

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

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

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

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

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

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

MS. RIOKO: I understand milligrams.

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

MS. RIOKO: Okay. And secondly --

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

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

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

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

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

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

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

And then going from, again, I'm going from memory, the effluent that was released last year from SONGS was, and I'm probably going to be high, was no more than a 10th of a millirem to a member of the public. So that would be 0.1 millirem, and that's probably too high by a factor of 10 approximately.

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

that value.

FACILITATOR DANIEL: All right. Final question here.

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

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

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

MR. WARNICK: And iodine.

MR. WERNER: Yes, iodine. Thank you.

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

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

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

while the unit is running?

MR. WERNER: On the tube plugging, there actually a limit in tech spec, it is limited at 35 percent. Once you reach that level it has to be plugged. But again, that's a simplistic answer of course.

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

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

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

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

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

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

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

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

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

FACILITATOR DANIEL: Thank you.

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

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

line.

FACILITATOR DANIEL: Thank you, Mr. Cruz. Next question.

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

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

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

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

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

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

FACILITATOR DANIEL: Last question, from this lady.

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

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