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PUBLIC MEETING

PG&E DIABLO CANYON DECOMMISSIONING ENGAGEMENT PANEL

August 24, 2022

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PG&E DIABLO CANYON DECOMMISSIONING ENGAGEMENT PANEL

PUBLIC MEETING

ZOOM VIDEOCONFERENCE

WEDNESDAY, AUGUST 24, 2022

6:03 - 9:41 P.M.

REPORTED BY KRISTI GARCIA, CSR NO. 9111

MR. ANDERS: Good evening, everyone. My name is Chuck Anders. And I am the facilitator for the Diablo Canyon Dimensioning Engagement Panel. I'd like to welcome everyone here in person and all of those participating online to tonight's meeting.

I want to remind everyone that information about this meeting and the agenda is on the Panel's website at DiabloCanyonPanel.org.

To open the meeting I'd like to introduce Michael Lucas one of our panel members.

MR. LUCAS: Thank you, Chuck. Welcome to all of those in person and attending online. First, a few issues about our immediate safety. If we could have our safety slide up.

In the event of an earthquake there are the safest places to drop, cover and hold, such as under a sturdy desk or table.

In the event of a fire, know your escapes; escape routes, your exits, evacuation plans. If safe to do so use your compliant fire extinguisher. Exit the house and call 911.

We're grateful to our Diablo Fire personnel in attendance tonight. Thank you.

In the event of an active shooter get out, hide out, take out. Call 911. We're grateful to our San

Luis Obispo County Sheriff Deputies here tonight in attendance as well.

In case of a medical emergency know who can perform first aid and CPR. Call 911 if you are alone, or share your location with the call leader to send help.

If you have an automated external defibrillator ensure you and others in your household know where it is and how to use it.

For your psychological safety. We care for each other. We look out for one another. Create a safe space for all. Welcome new ideas from everyone. Practice self care.

With Ergonomics. Practice 30-30; every 30 minutes move and stretch for 30 seconds. Ensure proper ergonomics. Use an update repetitive strain injury guard software. I didn't know that that was out there. And it's pretty good stuff so take a look at that.

COVID 19. Wash your hands frequently. Wear a mask where required. Get vaccinated if you are able. Follow current Cal/OSHA regulations and local county health orders.

Then I'll add one because I got my notice this week. The emergency planning zone test will be this week. If you reside in one of the 12 planning action

zones within the emergency planning zones for Diablo, you received a notice for testing of the alert and notification systems for nuclear, fire or hazardous materials accidents. It'll be tested at full volume this coming Saturday at noon and again at 12:30. Horn stands steady for three minutes.

If it was an actual emergency you would turn to local TV or radio stations for directions. Actions, including evacuations, may differ by your zone. So please see the PG&E Website, which is DiabloCanyonPublic.info, for more information on your location.

So let's get into -- can you put back the agenda? Let's look at the agenda for tonight. We should go over a few broad points before I hand off to Carol Woodward.

First, the panel is not a legislative body. We provide a forum for public comment and information. The mission of the panel is decommissioning. But recent initiatives from the Governor's office speak to that and continuing operations that impact decommission dates and sequences. And that may have additional impacts on the community, subsequent Diablo users and require an extended time horizon.

Important to document these issues that the recent proposals have raised based upon discussion inside the

panel with PG&E and from national, state and community associations.

Second, let me give you a brief timeline of events since our last decommissioning panel meeting May 25.

Do you want to go with the slide with the other organizations on it?

At the May 25th panel meeting we looked at the issue of fuel storage on site. PG&E has a new vendor with a new storage system. We do not have any panel statements on that yet, but we've had additional questions and responses in a fact finding meeting August 9th with the new storage vendor Orano.

Several collateral groups with jurisdiction and input have also met. You can get to their websites through links at the bottom of our web page. You can also see them up here on the slide.

On June 22nd and 23rd the Diablo Canyon Independent Safety Committee met.

On July 21st the Nuclear Regulatory Commission had a public meeting to discuss post-shutdown activities.

On August 9th the California Energy Commission hosted an online workshop on electric reliability needs and potential extension of operations. Over 700 people attended on Zoom. And a public comment period went well past the 7:00 PM anticipated close, and after 9:00 PM.

Kara Woodruff will give more detail about that meeting and the resultant record. It's possible the state my finalize the decision on continuing operations this week, with a recess scheduled for the end of August.

Third, let me speak to issues around time and impacts. Many, if not most, of the impacts of continuing operation and delay of final decommissioning are in relation to specific time proposed for the extended plant operations. It's been noted as little as five to ten years. The California Energy commission slides from August 9th suggest a ten-year window. And it was certainly on the minds of some commenters at the California Energy Commission meeting that it should remain open for as much as 20 years or more.

Each continuation window gathers significant questions but all the time frames entail some common impacts. Here are eight that I'd like you to consider tonight as you listen. These are my points. They are not the panel's.

First is continuing operation of the review process. Diablo Canyon at one time was submitting a relicensing application. That application required environmental impact statement. A full detailed environmental impact statement will accompany

decommissioning and is underway.

A license extension by nuclear regulatory rules bypasses the CEQA process and is differently assessed by the NRC. This, for many, is a serious issue and includes problems with public comment and additional studies with an environmental impact statement or a 20-year full relicensure may require. During this process what is lost in haste? How much material is grandfathered from the original license?

Second is safety, including seismic issues. Given the specific history of the Diablo Canyon plant, what are the safety issues around continuing operation.

Panel member Will Almas will moderate a session later tonight on this. He will be joined by Dr. Robert Budnitz of the Diablo Canyon Independent Safety Committee. That committee looks -- includes experts in nuclear operations and is supplemented by additional technical support. We look at them as partners in our key insights into technical aspects of safety. They will be joined by San Louis Obispo County supervisor Dr. Bruce Gibson who degrees are in earth sciences and a member of the prior seismic review committee. I understand we also have a Nuclear Regulatory Commission member as well.

Note in our web threat is an August 15 opinion

piece by Edward Lyman, Director of Nuclear Safety for the union of concerned scientists. It gets into a detailed history of Diablo's seismic conditions past PG&E position statements and prior NRC statements.

3. New fuel. While nuclear fuel advocates speaks of clean energy, this term is limited to carbon-free discharge and does not consider the extraction of uranium and downplays the status of spent fuel storage. At the origin point of fuel, at the opening of the plant, uranium was mined extensively in the American Southwest. Those mines have mostly shut down. And the trail of that form of extraction still has major social and environmental social justice issues remaining unsettled. New minds are challenged by Dene, Pueblo, and other indigenous groups who are concerned about surface water aquifers as well as the purity of these aquifers.

Today less than 5 percent of the uranium is domestically produced, with 49 percent coming from Kazakhstan and Russia. Over sourcing is not the direct purview of PG&E. These are indirect ethical issues for some.

At the other end of fuel life current plant operations through scheduled decommissioning will fill the current onsite storage facility located in the hill

above the plant. All parties agree storage onsite in the casks are superior to remaining in spent fuels pools. All fuel -- new fuel will have to have some kind of accommodation, perhaps with additional onsite storage and perhaps indefinitely.

While storage does not impact the initiation of continued operations it does potentially add a larger spent fuel facility site to the eventual decommissioning.

While the new vendor is exploring intermediate storage in other states, that license is not yet obtained. While spent fuel reprocessing is now happening in some parts of the world, it is not proposed for Diablo Canyon. Plans for a long-term storage site at Yucca Mountain have been abandoned.

Shutdown, startup, maintenance and continuing operations. Continuing operations mean new cycles of plant shutdown for refueling and maintenance. While the plant has a demonstrated safety record, two of the highest risk periods are when pressures and velocities in the system are changed at shutdown and startup. This is a prime factor in the need for an inflexible continuous operation and inability to modify production over the course of the day to match specific renewables generation.

Ongoing maintenance is a replace before failure kind of probable life of the component, be it valve, gasket,
et cetera. Some maintenance has been fine based on the decommissioning schedule and will need to be greatly revised. If this involves issues with supply chains and potential expanded craftspersons staff, both of which the CDC stated were reasons for renewables delay.

Cost and economics. The various proposals involve federal and state grants and forgivable loans. And the likely total cost as now unknown -- as of now unknown will be borne by a mix of taxpayers, ratepayers and passed on to those enrolled in the recent choice -- community choice aggregation efforts, an option across of much of SLO County. Determining the actual cost to produce this power may be very difficult to calculate, and the rates paid may not reflect additional subsidies.

What's the impact of continuing operations when previous payments made to local government officials were done under decommissioning? This was a concern of the letter of this last week by local mayors. Enormous cost begs the questions of time again. If the cost is significant how could a short duration pay for itself?

Loss of wind farm support, number 6. With the decommissioning, facilities of Diablo Canyon are under

study to help support the massive new wind farm proposed off our cost. With continued operations there is the loss of repurpose plant facilities such as harbor and massive machine shop that could be available to help wind farm progress to completion. Conditioned operations could inhibit this possible completion.

Environmental justice and once-through cooling. Diablo has no signature cooling towers. Continuing operations require the state change the criteria where once-through fueling is evaluated and its impact on the ocean.

8. Social justice and delay of site reuse. With decommissioning there are profound opportunities in the disposition of the 14 miles of coast and 12,000 acres that constitute Diablo Canyon lands. These have been discussed in the panel commission vision statement you can see on our website.

Issues of indigenous cultural heritage including returning lands to Chumash care, recreation, research, and other development of the plant parcel itself and their potential income streams are lost for another period of time with continuing operation and required safety zones.

Other concerns related to potential continuing operations will be noted by panel member Bruce Severance

a little bit later.

With that, I'll turn it back to you, Chuck.

MS. ZAWALICK: Hey, Chuck? Excuse me. Chuck?

Just -- thank you, Michael, for all of that. Especially the safety message. I did want to add on around the siren test for some clarification.

The sirens around the San Luis Obispo County are for all hazards, which is really important. PG&E maintains the sirens and the county office of emergency services runs that annual test and activates the sirens in case of an emergency. I just wanted to add that on. And thank you for that message and talking about the Saturday's test.

MR. ANDERS: Thank you, Michael.

Next slide, please. Just want to point out this slide which indicates how you -- anyone in the public can contact key people that are part of the decision process. And just this information will be available on the panel website. And it just indicates there's activities at the Independent Safety Committee, NRC, and in the California Legislature.

So next slide. Next item on the agenda is Item Number 3. And that is will to discuss the background and summary of the Governor's workshop on August 12th.

And I'm going to introduce Kara Woodruff, one of

our panel members. Kara.

MS. WOODRUFF: Thank you Chuck. Greetings and thank you for everyone participating in person and virtually tonight. This is what the Diablo Canyon Decommissioning Engagement Panel is all about. And we're sincerely grateful for your engagement.

A lot has been said in the news about the potential continued operation of Diablo Canyon beyond its scheduled full closure in three years. This is a great and profound debate. And what happens here in our backyard, of course, has considerable impact on the future of energy delivery across the state.

But I'd like to stress that the question we're considering now is not about pronuclear versus antinuclear. It's a question about specifically Diablo Canyon. And given its particular circumstances and particular location whether it should carry on beyond its current license term.

For those who don't know it, I'll provide a brief history leading up the great decision that now stands before this community and the State of California. The two-unit Diablo power plant began operations in the mid 1980s and under a 40-year license issued by the Nuclear Regulatory Commission. Today it operates as the only remaining nuclear plant in the state. And unit one is

scheduled to close in 2024. Unit two is scheduled to close in 2025.

In 2009 PG&E filed an application with the NRC to renew its license for an additional 20 years, 16 years before the scheduled closure. In 2016 everything changed. PG&E entered into a settlement agreement with environmental labor groups to end Diablo Canyon's operation upon the termination of the existing licenses. And the closure was approved by the State of California.

As of March of this year, a mere five months ago, the Governor and PG&E assured the public that the plans to close and decommission Diablo Canyon were on track. However, in mid-April the Biden administration announced its intention to save nuclear plants with a $6 billion federal cash infusion.

Shortly thereafter, the Governor and PG&E reversed their stance. And PG&E announced its intentions to apply for those funds, probably, and consider the continued operation of the plant beyond 2025.

Less than two weeks ago the Governor released draft legislation to continue Diablo's operation and also hosted a virtual workshop on the topic with cosponsors, the California Energy Commission and the California Independent System Operator, also known as Cal ISO. And incidentally, Cal ISO manages the flow of

electricity across the high voltage long distance power lines that make up 80 percent of California's power grid.

Almost 700 people participated in that Governor's workshop. And the comment period went two and a half hours beyond the scheduled time with an emotional and formidable split between those in favor of Diablo's extension and those opposed to it.

During the workshop the Governor's team made the case for Diablo's extension of operation. In a nutshell, they argued that Diablo's nuclear was needed as a stop gap measure for five to ten years beyond 2025 to ensure the reliability of the state's energy grid because of unexpected extreme heat, drought and wild fire events stemming from climate change, as well as supply chain disruptions due to COVID and otherwise and the impact of terrorists disputes and inflation.

In an opening statement at that workshop by Senator Laird, who represents this district, he called out a dozen issues of concern that would have to be addressed before a decision were to be made on Diablo Canyon's future, including the future of spent nuclear fuel generated at Diablo, safety and deferred maintenance, seismic issues, once-through cooling technology employed at Diablo Canyon, and the Diablo

Canyon lands.

My fellow panel member Bruce Severance will be covering these concerns in detail during his presentation later tonight.

And when it comes to the future of spent nuclear fuel storage we hope to address this in a future panel meeting. Surely future generations burdened with this radiated waste need us -- we need to make the right decisions for them today.

Under the Governor's legislative language the state would loan PG&E up to $4 billion to keep Diablo Canyon open, also included in the language was to a plan to bypass much of the regulatory framework that would normally be involved in relicensing, including the California Coastal Act.

In response to the Governor's legislative proposal just five days ago the California State Assembly issued its clean, diverse, safe and reliable energy proposal. It promoted a different vision for California's short to midterm energy challenges providing $1.4 billion, the same amount as what the Governor was proposing to go to PG&E, and monetary incentives to get zero carbon generation online faster to accelerate electric transmission projects and to reduce permit delays for new clean energy generation. The proposal was offered

in lieu of extending Diablo Canyon's operation.

In the last few days members of the public, including from academia, have offered their own views of the Governor's and the Assembly's proposal to extend Diablo's operation. I think we've seen a lot of thoughtful consideration of the Diablo question. And I encourage you to visit the panel's website to see and read some of these analyses.

And just yesterday mayors of nine Central Coast cities chimed in on the Diablo Canyon extension proposal. And in their letter they urge, among other things, that any legislation concerning the future of the plant also include assurances of plant safety; that any extension should be of limited term and tied to when the state has sufficient renewable energy online; that the Governor should partner with this region and invest now in renewal energy sources and create what Senator Laird referred to as a marshall plan for renewables.

Also that the community mitigation monies first awarded after the plant closure decision was made in 2016 would not have to be returned. And that the 12,000 acres that surround the plant known as the Diablo Canyon lands be conserved in perpetuity.

If you'd like to see the materials prepared for the Governor's workshop on August 12th, the legislative

language proposed by the Governor, and its response by the state assembly, the SLO County mayors' letter to the Governor, Senator Laird's statements, or other related materials and comments, I encourage you to visit the panel website at www.DiabloCanyonPanel.org. These materials are located under the "get involved" tab with a label "view public comments." You can also leave your own comment on the website by simply clicking that blue "submit comment" that's on the upper right-hand page on every page of the website.

So where to we go from here? This whole debate about the future of Diablo Canyon Power Plant began with the Biden Administration's launching the $6 billion initiative to save nuclear plants. The deadline for PG&E to apply for that money is in early September. And utility can't do that so unless they get the legislative authority to move forward. The legislative session ends a week from today on August 31st.

And tomorrow, when the Senate session adjourns, the Senate Committee on Energy, Utilities and Communications will be holding an oversight non voting meeting about the quote proposal to extend operations, the Diablo Canyon Power Plant. This may be the only legislative hearing on Diablo's future before new legislative language is introduced which will probably

be the day after tomorrow, Friday. And that will mean a vote next week, a week from today.

That, my friends, is a very, very large decision in a very, very short time. Thank you.

MR. SEVERANCE: My name is Bruce Severance. I'm a recent inductee. I'm sorry. Go ahead, Chuck.

MR. ANDERS: Our next agenda item is to hear from PG&E on the PG&E update. So Maureen Zawalick.

MS. ZAWALICK: Thank you, Chuck. Good evening everyone, members of the panel, and public. Appreciate the opportunity to try to update from PG&E. Go to the next slide, Chris. Thank you.

So Kara already covered this when unit one and unit two came into operations in 1985 and 1986. It just shows a two the three years remaining until the license -- the 40-year license expires for unit one in 2024 and unit two in 2025.

What I wanted to walk through and just to give the regulatory events that have occurred -- Kara covered a few of these -- actually, most all of them. But I wanted to kind of emphasize some key points here. As Kara mentioned, in August of 2016 the joint proposal was submitted. And the CPC reviewed that. And had some hearing processes. And then eventually approved that in January of 2018 for the shutting down of Diablo Canyon

after its 40-year licenses.

Also in the 2018 time frame PG&E withdrew its licensed renewal application with the Nuclear Regulatory Commission and it submitted a permanent cessation letter as part of that process.

Then there was four years of active decommissioning that we've been doing and we continue to do today and yesterday and last week as we still are on the plan to decommission the plant since no energy policies of the State of California have changed.

Kara has outlined what the next week may look like, but I want to take us back to April of 2022 when the Biden administration did allocate $6 billion for the civil nuclear credit program and gave a deadline initially in May for those plants that have stated that they will be retiring and have stated that before 2016, which we have.

The Governor's office submitted comments regarding Diablo Canyon's continued operations. And in May also sent a letter to the US Secretary Granholm on the criteria to apply for that program and asking also for an extension for that program.

At this point up to this time PG&E -- this is not being given by PG&E. This is being given by the State of California the Governor's office around a compound

reliability risk that is out there for the energy in California and the demands that are there, coupled with extreme drought, extreme heat, wild fires, tariffs, sanctions, inflation, supply chain and other things that were discussed by the California Energy Commission during the August 12th workshop that Kara was talking about.

In June PG&E did send a letter that we did support. The Governor's office letter that he sent in May regarding the DOE program. And at the end of legislative cycle -- I'm sorry. At the end of June during of the California legislation they approved Assembly Bill 180 which included $75 million for plants in the State of California that have announced their retirement to work with the DWR, Department of Water Resources, to take interim actions to preserve the option to continue to operate. We have not been directed -- PG&E has not been directed by the State of California, the Governor's office, to submit a license renewal application, pursue license renewal or make any change in course with decommissioning.

So then also in June of 2022, a couple months ago, the DOE did change the criteria for being -- changed the criteria for the first, um -- the first tranche of that application process and also change the deadline to

September 6th.

So let's go to the next slide. So what are the anticipated next steps? So we need direction from the Governor's office and legislation to be passed prior to September 6th. And we know this legislative cycle ends August 31st, next week. So we need that as part of our application of the DOE to show that we have a sustainable plan to move forward with continued operations of Diablo Canyon. Not having that legislation, we cannot show the DOE that we have than kind of plan and regulatory pathways that are needed to continue to operate Diablo Canyon.

We have some short-term needs that I talked about already that's part of the $75 million on the Assembly Bill 180 regarding fuel procurement and spent fuel tax that are needed. Those have two-year manufacturing, procuring and contract efforts that are needed. So we would need that. And that's why we needed that now to get going.

Just so reemphasize -- Kara already talked about August 31st. I feel like I'm repeating a lot of that. And the Senate Energy Utility and Communications Committee tomorrow at 8:45. But if it does pass then we would take immediate actions to be working with the Nuclear Regulatory Commission on the license renewal

application and restarting those efforts. And we would be submitting the Civil Nuclear Credit Program application to the Department of Energy before the deadline of September 6th. If there is no legislation, then we will not be applying for the Civil Nuclear Credit Program and we will not have the opportunity to have that federal funding.

Next. And then what I wanted to show here if California does change their energy policies we would be continuing on concurrent paths. We can't stop the efforts that we've been doing for decommissioning because there's tremendous efforts there. And so if something were to change in three years and then we haven't been doing active decommissioning, then we would find ourselves in a situation where we'd have a risk of going into safe store; not being able to go right into decommissioning. And we want to avoid that.

So we would continue with important things such as, you know, the engagement panel and the topics that we have on spent fuel management and other things that are related. We would continue with San Luis Obispo County on the decommissioning development planning. We would continue with all of the regulatory actions or license amendment requests we have with the Nuclear Regulatory Commission for decommissioning.

And regardless if we're operating or shut down, we always have an every three-year nuclear decommissioning cost training proceeding. And we would continue in that cycle as well as the next one would be in 2024.

And then absolutely continue on the Diablo Canyon lands activities. A lot of those activities are, regardless, again, if we are operating or if we are decommissioning.

Then concurrent -- mentioned on the previous slide. If California legislation is passed and revised then we would immediately start that license renewal application, standing up a project team, working with the regulator, conducting studies, and all the other activities that are needed.

So, again, I just want to emphasize on the last slide -- if you want to -- is that, you know, we are a state-regulated utility. And we will abide by the regulatory path set by the State of California. We have done so to date. And we will continue to do so.

We are very proud of the clean, reliable, safe operations of Diablo Canyon and what we do provide for almost 9 percent of Californians. And with that, I will turn it back over to Bruce.

MS. WOODRUFF: Maureen, I had a quick question for you. I think you said that the energy committee

meeting -- the Senate and Energy Committee meeting is at 8:45 tomorrow. My understanding it will start sometime between 11:30 in the morning and 12:30, after the Senate sessions adjourns.

MS. ZAWALICK: Oh, I don't know. I've heard both. I've heard 8:45. I've heard 9:05. I've heard 11:30. I'm not an expert in that area. That's more in your area, Kara.

MS WOODRUFF: Well, I certainly don't understand it.

MR. ANDERS: Thank you, Maureen. Our next agenda item is item -- agenda item number 5. And as many of you have heard since the announcement of potential extended operation, a number of concerns and issues have been raised. They were raised in the August 12th joint agency workshop. And they are -- also additional issues have been raised outside of that process.

And one of our members Bruce Severance is going to provide an overview of the issues that were raised at the workshop and other issues that may not have been discussed at this point. Bruce.

MR. SEVERANCE: Thank you. Sorry, Maureen, for that false start earlier.

My name is Bruce Severance. I'm one of the panel members. I want to summarize some of Senator Laird's

comments that were given on the August 12th California Energy Commission and Governor's office presentation, as a number of the panelists felt that they were extremely relevant and concise. Though following that, I'm going to give a few additional comments.

First, from Laird's comments. Can we complete the deferred maintenance in time? These are quoted from his script -- excerpts from his script. Bottom line is we are faced with a situation where everything that would have been done to renew Diablo Canyon's operation beyond 2025 during the last six years is now being collapsed into a three-year window.

Item 2, safety requires experienced staff. This issue has been raised by Diablo Canyon and Safety Committee and requires full diligence by the state, including support for training and retention so the skilled work force needed to deliver plant safety can be assured for years to come.

Item 3, who pays? Existing rate system puts major costs on rate payers in a manner that stresses lower and middle income rate payers and -- who are already shouldering the cost of the state's climate efforts. How will we know who pays and how much before we make a commitment to go forward on the extended life of the plant?

Item 4, spent nuclear fuel storage. The existing facility onsite at Diablo Canyon where the spent nuclear fuel is stored is large enough to accommodate the waste generated by the plant until 2025. The capacity question must be answered now as there is today no place that can accept Diablo's radioactive waste.

Item 5, seismic concerns. Serious questions have been raised in the community about the completeness of existing seismic studies and their possible lack of full review by neutral third parties. We need to explore the state of existing seismic analyses and get answers as to where there may be gaps and whether retrofitting is required to reduce risk if the plant's life is extended.

Item 6, once-through cooling. Diablo Canyon is permitted to use once-through cooling technology only until 2025. And that technology either needs to be replaced or the right to continue using OTC would have to be extended. If an extension is in order it needs to be done in a manner that adequately mitigates for the significant environmental impact of releasing warm water into the marine environment over an extended time.

Item 7, permitting. There would likely not be sufficient time to complete permitting before the plant life would be extended, yet the engagement process that involves stakeholder involvement and agreement on the

previous decision to decommission would only have happened around possible extension if environmental processes are completed. There is a fine line between overriding processes and speeding them up.

Item 8, community transition funding. The state legislature passed SB 1090 shortly after the settlement agreement was completed which allowed $85 million for community funding to ease the transition away from Diablo Canyon's revenue and labor base. Assurances are needed that those funds, much of which have already been spent, will not need to be returned to Sacramento. And, further, that additional mitigation will be available in future years when the plant would close.

Item 9, Diablo Canyon lands. The community has fought hard for the conservation of and public access to the Diablo Canyon lands which were expected to be transferred away from PG&E upon Diablo Canyon's closure in 2025. This process need not be delayed. It is not only good for the community it implements the Governor's 30-by-30 biodiversity initiative in one of the richest ecological regions in the state.

Number 10, retirement date certainty. The uncertainties regarding Diablo Canyon's future causes significant anxiety and interferes on many levels with sound planning in

San Luis Obispo County for this reason I believe there must be a date certain on the final closure date if the lift of the plant is to be extended.

Item 12, offshore wind. San Luis Obispo County will be opened to offshore wind development. One of the allures of this location is the existing transmission lines from Diablo Canyon. How do we ensure that an extension of the life of the nuclear power plant does not hinder the ability to onboard and transmit new renewable power on the grid using local transmission.

That ends our summary of Senator Laird's comments at the August 12th Joint Energy Commission and Governor's office presentation.

The following are additional concerns not raised by either Laird or the CEC CAISO Governor's presentation.

Reactor vessel embrittlement. The reactor vessel of unit one was found to be among the most embrittled in the nation in 2002. Although the NRC has allowed continued operation and waived further testing, embrittlement could inhibit rapid shutdown of the reactor in an emergency and should be evaluated by the Diablo Canyon Independent Safety Committee as well as other independent experts.

Second item, incomplete contamination and

monitoring records. There was a historical site assessment published by PG&E which cites numerous likely contamination points at the plant that should be routinely checked for radioactive contamination. But PG&E did not make records available to fully complete the report with actual monitoring data. Any further discussion of and operations extension should be predicated upon access to these records and a properly completed historic site assessment. The public deserves to know.

Item 3, rate payer and taxpayer equity. Proposed legislation seeks to offer $1.4 billion forgivable loan from the state's general fund to PG&E to fund the cost of license extension and deferred maintenance and continued operations. Costs will also be transferred to community choice aggregators, also known as CCAs, statewide. This will affect both -- place a disproportional burden on low income families as well as undermine the efforts and financial solvencies of CCAs that are the primary competition to investor-owned utilities and are run by local government agencies to speed the transition to 100 percent renewables on the grid.

PG&E has suggested that CCAs should pay the additional operating cost through the PCIA, that is the

Power Charge Indifference Assessment.

20-year license extension. PG&E has suggested, although not confirmed, that they may apply for a 20-year license extension. This is in direct conflict with the Governor's plan to extend the life of the plant for five to ten years. There is a very low probability that a five-to-ten-year life extension would make economic sense given the level of investment needed to operate the plant safely.

There doesn't seem to be a low capitalization alternative to allow continued operation for the few years between 2025 and 2029 during which the projected shortfall on the grid is anticipated. We're stuck making a 20-year investment to solve a five-year problem.

Item 5. A further discussion of the grid shortfall is needed. Senator Laird suggested that there should be further discussion about whether there will, in fact, be a periodic shortfall of power in the 2025 to 2030 time frame. And that other options for meeting resource adequacy should be explored. I would suggest reexamination Loretta Lynch's study of August 2020 -- of the August 2020 blackouts which suggests that CAISO had the capacity online but was contractually obligated to export it to other states. This would suggest that

better modeling and protections and possibly a higher resource adequacy requirement may have solved the problem.

Item 6, peak demand is intermittent. Diablo is a constant source of power. There is an inherent mismatch in the strategy to solve a periotic peak demand problem with large continuous generation. Peak demand is driven by residential HVAC. And exceptional peak demand events are driven by heat waves that occur once in five years. There seems to be an obvious mismatch between the problem and the proposed solution. A further indication that continuation of DCPP operations cannot be more cost effective than other strategies that are suited to address the intermittent problem.

Items 7, study is needed. Economics safety issues and alternatives should be fully explored before the legislature elects to mandate life extended operations at the plant. There are better technological solutions to provide grid stability. For example, electric vehicle batteries feeding into the grid during peak demand hours would have prevented the 2020 blackouts.

Hydrogen peaker plant turbines with flexible fuel that can run on both natural gas and hydrogen are now commercially available and can facilitate gradual decarbonization of gas peaker plants. This would solve

all long term grid storage problems and harmonize renewables on the grid while avoiding all possible stranded asset scenarios that pose a much larger economic risk with continued Diablo Canyon operations.

Senator Laird calls for a marshall plan for California energy. And we feel that a further study is needed before Diablo Canyon extension is approved. If PG&E rushes head long into applying for license extension we may face consequences that will not serve a higher public good.

MR. ANDERS: Thank you, Bruce.

MR. LATHROP: Chuck, could I ask for some clarification?

MR. ANDERS: Yes.

MR. LATHROP: In reference to these other concerns, just for the house and also for the general public it would be good to state where these other concerns came from or who they are actually representing. I know there's been a lot of discussion --

MR. SEVERANCE: I said they were my additional concerns that were added to Laird's. But I did work on those in collaboration with some of the other --

MR. LATHROP: And the last statement as far as "we," who are "we"?

MR. SEVERANCE: You know, that's a really good point. I meant to take "we" out. And I apologize if I left it in. I did take it out one other place. I should correct that now for the record and say "I" instead.

MR. LATHROP: Okay. Thank you.

MR. ANDERS: Thank you very much. And thank you, Bruce, for your work in compiling that list. Thanks for the clarification, Scott.

Now is the time for a ten-minute break. We have agreed to be biologically friendly in this meeting. And recognizing we tend to go on a little long in previous meetings. So we've got two breaks scheduled. And let's plan to be back at 6:55. We'll start on time 6:55. Thank you.

(Brief recess.)

MR. ANDERS: Time's up. Before we proceed I would like to ask Kara to recognize a guest that we have here in the audience.

MS. WOODRUFF: Yeah. I just want to take a moment. We have a special guest this evening, Congressman Salud Carbajal has come a long way to be with us tonight. So greetings. Welcome. And thank you for being here. I know you are very involved in this issue. So we appreciate you showing up. Thank you.

MR. ANDERS: Okay. Our next item on the agenda is a discussion of the safety issues related to the Diablo Canyon Power Plant's potential continued operation.

And one of our panel members, Will Almas, is going to introduce this topic and moderate a couple of speakers that we have here. Will, are you online?

MR. ALMAS: Yes, I am. Can you hear me?

MR. ANDERS: Yes, we can. We can see you too.

MR. ALMAS: Well, good. Well, that's a plus. Thank you, Chuck.

Well, as we've heard there are many arguments both pro and con for the future operation of the Diablo Canyon Plant. But there is one issue that elected officials, PG&E, California Energy Commission, Nuclear Regulatory Commission and oppositions group all agree on. If the Diablo plant life is to be extended, safe operation is to be first priority.

But how is safe defined? Not an easy question. And one that requires involvement and discussion by all parties. Please, as public, stay involved with this process. There's going to be a lot happening over the next year, I guess, if the plant -- if PG&E goes ahead with applying for a new -- for relicensing.

In an attempt to shed light on the process for

engagement going forward, we have invited several experts to speak briefly on several of the most important issues and be available for questions from the public.

First, Dr. Budnitz is a member of the Diablo Canyon Independent Safety Committee. Dr. Budnitz is a nuclear engineer and spent a career dealing with nuclear safety issues. He will talk about how the Diablo Canyon Independent Safety Committee will proceed in considering the important safety issues related to the extension of the Diablo Canyon Nuclear Plant.

Then Dr. Bruce Gibson has joined us. Dr. Gibson is a geophysicist by training and experience in an earlier career and has been involved in the seismic review of Diablo Canyon. He is best known to us, though, on the Central Coast as a County Supervisor for San Luis Obispo County.

Dr. Gibson will summarize the current state of knowledge regarding seismic conditions affecting safe operation of the Diablo Canyon Power Plant.

Also available for questions related to Diablo Canyon are two staff members of the nuclear regulatory commission. The -- I may remind you that the nuclear regulatory commission is the federal regulatory agency with the sole jurisdiction related to nuclear operations

and materials at the Diablo plant. So they are a very important part of this whole scenario.

Dr. Clifford Munson is senior technical advisor for the Office of Nuclear Reactor Regulation.

Loren Gibson is a branch chief for license renewal projects with the Office of Nuclear Regulatory Regulation -- or Reactor Regulation. I'm sorry.

Lastly, and this is something I am adding from my viewpoint, not as a panel necessarily. But I do want to draw your attention to the issue not included in this discussion tonight, that is top safety concerns, but one that is certainly on the list of these top safety concerns. That is, the handling and storage of spent nuclear fuel onsite. Should there be a plant life extension?

This is a process that requires multiple steps and involves storage in water pools as well as dry casks. Although not dealt with in tonight's discussion, it is an issue that will evolve quickly once the relicensing process begins. And will require continued regulation, political and public attention.

So with that, Dr. Budnitz, or Chuck, take it away.

DR. BUDNITZ: Is it to me. Chuck, are you all set?

MR. ANDERS: Yes. Go ahead, Dr. Budnitz.

DR. BUDNITZ: By the way, I've got a couple of slides. I don't want to show them now. Yeah. Just don't show them now. I'll come to them in a few minutes.

I want to start off by a disclaimer, which is: I am a member of the Diablo Canyon Independent Safety Committee. By the way, it says chairman but I -- the chairman is a rotating thing. I rotated as -- I'm no longer the chairman as of July 1st. Peter Lamb is the chairman. But I am still a member. So that slide there isn't up-to-date, but that's okay.

I need to start out by saying that I can't speak for the Diablo Canyon Safety Committee here. I'm speaking for myself. And I have all of this experience. And a lot of what I'm going to say I know my colleagues agree with. But this is not an official position of the committee. It's my own. It's just how we operate.

The committee only takes formal positions in writing or at public meetings that we -- formal public meetings where we speak. And, by the way, our next public meeting is going to be in Avila Beach on September 28th and 29th. And every member of the public that wants should come and join or join us remotely. You can find it on our Website.

Now, let me describe the committee structure and

how we work. There are three of us. We serve three-year terms, rotating. One each year gets reappointed or a new member. One is appointed by the Governor. One is appointed by the chair of the California Energy Commission. And the third one is appointed by the Attorney General. I'm the Attorney General's appointee.

Now these aren't political appointments, you know, Republicans or Democrats. These are appointments in which in order to qualify you have to be a nuclear engineer, an expert in this stuff. And all three of us are. And I'm proud to be able to say I'm one of them.

The committee operates with three of us and also two consultants part-time who -- there are really five of us together working on this -- on this committee. And we hold three public meetings every year, every four months for two days in Avila Beach. And then in the -- in the intermediate months, nine of the other months, we go to the station -- a small group, one -- two of us, let's say. We go to the station. We spend time. And we go around. And we look at things. And we interview people. And we read documents. And we ask questions. And we probe around. And we have nine of those so called fact-finding visits every year. I'm going on one in a couple weeks, another one. And I was on one a

couple months ago.

And in the course of that, we review all sorts of different programs in order to understand the safety status of the plant. Because our remit is to review the safety status of the plant, the operational safety, and to write reports about it, which we do. We have an annual report. You can find it on our website.

We write intermediate reports, so-called fact-finding reports in between on all sorts of different topics. And so in writing you can find out what we think about all sorts of different things.

Now, our particular role of reviewing the safety is -- it goes on all the time. But when we come to the question -- and it's a crucial question of -- of the safety of the plant as it goes forward past 2025, if it were to happen, we find ourselves forced to be in a reactive mode. Because nothing has happened yet. And when it does, PG&E is going to do certain things and take certain decisions and make certain plans and -- and do certain analyses. And we're going to review them.

We're not in a position to do any of that. We can't order anybody to do anything. We're going to review them. And our plan and approach is to be very active in reviewing all the different things that go on so as to make sure that our coverage and the scope is

thorough so that we can come to an independent evaluation about the safety of the plant. And then we'll write it up. We'll write a public report about it or maybe more than one. And share it with everybody. And, of course, you can come to our public meetings in between and hear what we think and say.

Now, the problem is very complex. And it's very, very diverse. And I'm going to try to describe that diversity in the next slide. Put up my first slide. And then -- I just have two slides here. There, can you see it? Everybody see my first slide? That's the title side. It just shows my name. If you can see that slide -- and I hope people can -- no, the second one with all -- with all that -- all those things on it. That's an eye test. You're not supposed to be able to see that because the print is too small.

But I put on one page something that we call our open items list; list of systems. And what I'm going to describe here is that in the course of our work we periodically, but systematically, review about 30 different plant systems. They are listed there on the left-hand side. And I'm going to show you an example in a minute.

And we also review about 50 plant programs. The difference between a system and a pro -- a system is,

let's say, a DC electrical bus system. And a program is -- let's say, a program to make sure all the fire doors work or a program to make sure that the -- that fire safety is assured. So we review about 50 programs and about 30 systems periodically. And we have a -- some of them we review every few months. And some of them we review every two or three years, because it's not so urgent or nothing is changing or we don't have any reason to -- to do it more frequently.

So now go to the next slide. And I'm going to show an example to show how complex this is. And the next slide, if you can see it -- and I hope everybody can see it -- you'll just see what I mean. Of the 30 systems that we review I just extracted five of them just to show on the list -- they are just examples. And it shows the last time we reviewed this. There's refueling equipment. There's control rod equipment. There's safety injection pumps. If you lose water in the system you have to inject new water. And those pumps have to work. And if they don't it's a real safety compromise.

There are steam generators. And steam generators are a real crucial piece of safety equipment. If they don't work the plant is going to get in real trouble and real fast.

The special protection system is a system that the grid -- offsite grid uses to assure that offsite power is available to the plant. Because the plant, it crucially depends on offsite power. And its loss can initiate an accident.

Those are just five of the 30 things that we review every -- some of them we review twice a year and some of them we review every two years or more. And I just showed that as an example of these things. Because when I can come to the work we're going to do I'm going to come back to this.

Now we also review, as I said, about more than four dozen programs. And these are such things as -- look at the second one -- the notification review program. What happens is every time something goes wrong at the plant, every single thing -- let's suppose, you know, a valve is leaking. The person that finds it writes it up, puts it into the system. And then they put together a plan to fix it. Sometimes it's fixed, you know, ten minutes later. Sometimes it takes two weeks to fix it and they have to get a spare part.

Every one of those is called a notification. In a big complex plant like Diablo Canyon they have 50 or 75 or 100 notifications every day. 50 or 75 or 100. And there's a review team that every day reviews all of

those several dozen notifications and makes sure that nothing falls through the crack. And that's a program. You understand? And we review that program and makes sure it works. Because if that program isn't working properly, the plant isn't going to be safe enough. It's just an example of a program.

Another one. Online maintenance. It's the fourth one on that list. They do some maintenance online while the plant is running. And they do some maintenance -- a lot of maintenance when they shut down to refuel. But imagine the plant is running, something gets in trouble or maybe it's not in trouble, and it's routine, and they maintain it while the plant is running. And they have a program for making sure that that online maintenance is done sensibly and it doesn't cause a safety concern. And that program has procedures and training and reports and benchmarking with other plants to see how they do it to make sure that Diablo is doing it -- you know, using the best practices and so on. And we review that program every year or so.

You can see we reviewed that one just as recently as last May as a way of making sure that the plant is actually doing the work that it needs to do.

Now, I'll leave this up while I go back to the components one. Because now we're going to come to the

issue -- the crucial issue about life extension.

When they announced, what, half a dozen years ago, that the plant was going to shut down nine years hence -- it's now three years hence for the second unit. But it was nine -- eight, nine years back then. When they announced that, every single one of those items of equipment and every single one of those programs adjusted their work with the knowledge that 2025 was the end.

So I'll just give you an example. Look at the third one down, safety injection pumps under -- that's a system. It's an important system. Let me suppose here -- I'm not sure this is true. But let me suppose to you that every ten years they have to take that system all apart and refurbish it and make sure it's fine. And let's suppose that the last time they did that was 2013. Okay? And the next ten-year thing is going to be 2023. Well, the plant is supposed to shut down in 2024 and 2025. And a system like that -- I'm just making this up because I'm not sure that's the schedule. But in a situation like that, they may decide that they are not going to spend several million dollars in 2023 to refurbish it for another ten years. They are just going to let it go not ten years but 12, but to watch it like a hawk to make sure that that extension is not a

problem.

And for every one of these systems and components they have done an evaluation to see whether or not there is something special they have to do to get to 2024 and 2025, or whether they are going to run right through anyway. And then they have arranged their work to make sure that they get to 2025 -- or 2024-5 safely.

Now, all of a sudden, suppose a month from now they are told we're not going to 2025 we're going to go to 2030. A whole lot of those things -- someone is going to have to reevaluate them. In fact, every one they have to reevaluate and ask the question: Is the decision we made six years ago or two years ago going to get us there, or is there something new that we have to do? Do we have to now go order spare parts to replace something in 2026 that we didn't have because it was going to shut?

Is there some new method of doing something that we didn't want to implement because it was going to shut anyway? And every one of those things is a decision by the plant about what they are going to do for every system and every program in this list. And we have 30 systems and 50 programs. And the PG&E staff have to run all of that and get it done right.

And for every one of those, Diablo Canyon

Independent Safety Committee has been reviewing them right along in a periodic way. And we're going to be -- I hate to say stuck because it's a big job. We're going to be reviewing them too. We're going to be seeing if we can agree with -- or if we don't, we'll tell them -- the decisions they make about how to assure -- not that they can get to 2025. We've already been doing that. But if they can get to 2030 or whatever it happens to be.

And for a lot of these they are going to have to order new equipment. For some of them they are going to have to do enhanced maintenance. For some of them they are going to do a partial replacement. All sorts of different strategies to get to 2030 instead of 2025. I'm just pretending that that's what it is.

And for some of the programs they are going to have to readjust the programs and the people and so on to make sure that they get there. And that's the bulk of the work that PG&E has got to do really fast if this is going to happen between now and 2025. Because they not only have to write up all the stuff, but they've got to convince the Nuclear Regulatory Commission that that program is going to work. And the NRC is going to be reviewing it like a hawk.

And I'm telling you that the Diablo Canyon

Independent Safety Committee, we're going to review it like a hawk also. And it's going to be -- that's what we mean by -- when we talk about deferred maintenance. It's more than just deferred maintenance. It's all sorts of schedule and different things. And we're going to ask the question -- we've already asked the question can they get to 2025 safely? We're suddenly going to have to ask the question can they get to 2030 -- I don't know whether it's going to be 2030. It might be some other day -- safely?

How much margin is there? Are there any particularly sensitive components or things that should be really high on everyone's list because they are really important and really difficult? If so, what are they? And are they giving them proper priority? Now that's one whole program, but there is a second part. And you'll understand it as soon as I say it.

We also have to assure that the staff remain and remain competent. When they first announced -- you know, six years ago they announced that they were going to end in 2025, we were concerned; they were concerned; everybody was concerned that some of the crucial staff might just -- you know, just say well, heck with this. I'm going to move to Kansas where there's a plant that's running for 40 more years. I'm just making that up.

Move to somewhere else to another nuclear plant. We have 60 sites in the US and 100 plants running -- almost 100 plants running. Move somewhere else.

Well, they had a program, which seems to have worked, which has assured that they are going to maintain -- a vast bulk of the staff is staying to the bitter end to 2024, 2025. God bless them. They have a bonus program, an incentive program. The staff has great morale. And we're watching it carefully. And that's a great thing.

Now all of a sudden they say no, it's not 2025, it's 2028 or 2030, or whatever it happens to be. They have to make sure that staff remains competent and the best ones stay. Not everybody, but most of them. Because there's a lot of them leave and they are replaced by neophytes, it doesn't work. Everybody knows that. They know it. The NRC knows it. We know it. Everybody knows it. Well, it's another thing we're going to do. And we have to look.

Now, there are formal programs to look at this stuff. One of the programs that they have is something called an Aging Management Program in which they look at equipment that ages. And they want to make sure that they are on top of it. And we've been reviewing it right along. And we're going to continue to review it.

Now there is one whole area that's a bright light in this -- in this area. I'll just explain. Way back about 2009 when they initiated the process to get a 20-year extension -- this is PG&E. You know, they were looking for a 20-year extension from 2025 to 2035 -- to 2045, 20 years. They submitted documentation to the NRC to support a 20-year extension. And it covered every one of these programs. Every one of them. You know, the pressure vessel and the fire safety and the -- and all sorts of things. And the NRC was in the process of reviewing that. And had almost completed their review of all of those many, many systems to decide whether or not they would give them a 20-year extension.

And then, as you know, in 2016, 2017 they pulled the plug and the NRC stopped that. But all of that documentation is there. The NRC saw it before. They don't have to review it all again. But they do have to review every item to make sure that there's nothing new that would make their previous review invalid.

A lot of things probably won't be. Some things there might be. Some new information. And they are going to have to go back and do that again. But the NRC's review process for the 20-year extension or 10 years, I don't know what it would be.

But having gone through that process already, they

-- the NRC staff is going to go back to that document. And they are going to look at every single one of those decisions that they were ready to indorse and say: Is it still true six years later or -- well, they were doing in 2011. It's already ten years later. Or if not, what do we have to ask them to do or what do they have to commit to do? Or what isn't going to work? And there's a whole lot of -- it's a long list.

Well, all of that documentation is going to be developed by PG&E or it will have to. And our committee is going to review it too. We're going to do an independent review. And if we see anything, we'll raise our hand and blow the whistle or whatever. And if we don't see anything well, okay, we'll see what we see.

So our remit is going to be -- we've been doing these routine reviews for 30 years. But it's going to be very intense and very, very compressed. We're going to have to do a lot of review in a short time in a way that is going to be much more difficult and burdensome than it used to be. We're up to it. We'll do it. We're going to do it. We're going to do an item by item review. And we're going to see what we learn. And if we learn something that's a problem, we'll say so. And if it isn't, we'll say that. That's our pledge to you because we're a State of California committee. And we

hope that -- that if it comes to it that we'll be up to it. We think we're up to it. And we expect that we're up to it. And we'll see.

Just to repeat, the committee itself has three of us. But we have two consultants. And we're about to hire a third one. And the five -- or it will be six of us will do this as a team. And jump right in and see how much -- how much documentation there is.

And by the way, there's one more thing that I need to ask. Let's pretend that system number 22 is absolutely fine, but the documentation is inadequate. And we won't be able to tell whether it's fine or not. You can't tell without documentation. So one of the issues is -- and PG&E has got to develop documentation that will support the judgments and the evaluation that the NRC has to make and that we'll make too. So they have got a big burden in front of them. And then we're going to have to do all we can to review it.

That's the end of my report. And, of course, I'm happy to answer any questions that you might -- you might have.

MR. ANDERS: Thank you, Dr. Budnitz. Will, we'll turn it back over to you.

MR. ALMAS: Well, I would throw it to the board -- to our panel for any questions that you may have for

Dr. Budnitz.

MR. LATHROP: Yeah. I have a couple questions in reference to the overall maintenance schedules.

My experience with setting maintenance schedules, there's a couple of drivers that set those schedules. It could either be the vendor of the item, the owner themselves, or any kind of regulatory agency mandating a certain time period.

So using the example that was given about a ten-year life or maintenance schedule, I was just curious if whether or not that was driven by the owner or actually driven by some regulatory agent? Because quite often, especially -- I guess if you are in this type of business, it seems to me that potentially the owner would be wanting to build in safeguards; meaning, the item may be rated at 20 years but they choose to set a maintenance schedule at ten. So I'm just curious with that. Because I think when you look at everything that needs to be reviewed, I would think that there would be a priority set based on what really needs to be taken care of first. I'm just curious about that; if anyone knows who sets that maintenance schedule.

DR. BUDNITZ: Yes. That's an excellent question. And I can tell you the answer which is -- it's sort of obvious. It depends.

Some of the -- some of the maintenance schedules are not set by the Nuclear Regulatory Commission, but they are set by an international code or a standard. For example, the American Society of Mechanical Engineers, ASME, has inspection codes and standards for large pressure vessels. And everybody in the world follows them. The NRC endorses them. And PG&E follows that.

But it's not set by the NRC. They endorse something that was set by a national code or standard. The same thing with fire protection. Some of the fire protection things are set by the National Fire Protection Association, NFPA, and codes and standards that everybody uses them. And they use them also.

It is also so -- sometimes they have a six-year schedule in the code. And they do it every four years, as you said. Sometimes it's a six-year schedule and they do it every four years. And sometimes they're -- if, in fact, not infrequently. The code has an exemption in which you can get an exemption this is so, this is so, and this is so. And then you can get an extension and still say that you met the code. Of course, that has to be carefully something. So it depends. There's a lot of different -- every year is different. There are dozens of different codes,

standards, regulations and so on. Each area carefully tuned to its own needs.

That's a good question.

MR. LATHROP: Thank you for that clarification.

DR. BUDNITZ: I think you probably knew the answer to that, but I'm glad --

MR. ANDERS: Well, we have a question from Kara.

MS. WOODRUFF: I just have a quick question. Thanks, Dr. Budnitz. What happens if, during the course of your analysis, that you come across a safety issue; either discovered by documentation or a site visit? What happens then? What do you do with that information and how does the public learn about it?

DR. BUDNITZ: Depending on its urgency we would -- we would go straight to the plant people right there including, you know, the plant manager, if you have to, right away, depending on what it is and find out more.

We have over the years called attention to a safety issue in writing, actually, you know, in our -- in our reports we'll -- we'll -- we'll call attention to a safety issue and make a recommendation. And then we'll -- we'll also make sure that the Nuclear Regulatory Commission knows about it too. And then we'll follow up to make sure that it hasn't just fallen through the cracks. So, yes, that happens from time to

time. And often -- I won't see little stuff, but not as important as crucial. But, you know, you've got to fix the little stuff so it doesn't get to be big stuff. Anybody doesn't understand that doesn't, you know -- the way equipment fails and the way the world works. Okay? You bet. We write it up. That's the answer.

MR. ANDERS: Any further questions of Dr. Budnitz?

Yes, Bruce.

MR. SEVERANCE: Yes. I had a couple of related questions. It might be easier to state all the questions because they kind of merge.

Is there a comprehensive deferred maintenance list that is public facing that can be made available to the panel?

And is there -- is there any scheduled maintenance that was supposed to occur in the 2020 to 2025 range or time frame that is being delayed by one to five years until closure?

And are there any safety implications to any of that deferred maintenance?

And then a fourth question that's separate is: Has the Independent Safety Committee reviewed the historic site assessment which was published in 2018 and reviews a number of potential contamination points that

would likely occur in a nuclear power plant such as sump pumps and areas where waste water might collect?

And I'm curious to know if you've seen that document because there's probably a dozen places where it cites that detailed records were not available as they normally are for that type of site assessment.

DR. BUDNITZ: On that last one we -- we're aware of and have reviewed that. I'll go to your first broad question. I don't know of any comprehensive list because every group and every area has its own. And we have been reviewing them one by one. In our fact-finding reports we cover them one by one, you know, over the years. But I'm not sure that there's a comprehensive list like that in the form that the questioner was asking for in terms of, you know, I've got this list of deferred maintenance.

For some of the issues it's more subtle than just deferral. Sometimes they -- they were going to replace but they don't replace but they don't defer maintenance. They do the maintenance on the regular schedule. But they were going to --

I'll just give you the example of my car. If I replace the tires every 30,000 miles. But maybe I'm going to sell the car next year and I just got to 30. And so I'm not going to buy new tires. I'm just going

to watch it closely.

Well, there's some of that too in which you watch it closely. You are not deferring maintenance. You're doing it on the regular schedule. But you've exceeded some guidance. In that case you want to be -- keep expecting that all the time. And make sure that you haven't got yourself in trouble by just exceeding a little bit. So the word "mixed bag" is really -- I don't want to insult anybody, because that's really jargon.

But it's a very, very diverse and diffuse and -- and just different collections of all these different programs. I said that we have 30 different categories of systems and components. And we've got 50 different programs. And every one of them has its own differences.

You can read about them in our fact-finding reports in our annual reports. Anyone that wants to read about it just read our last annual report. And you can it's all in there. Does that help?

MR. SEVERANCE: Yes. Yes, it does. I have to ask one additional question. And that is, whether or not -- I -- it sounds like you have lists of lists in terms of the maintenance and the ongoing safety protocols and --

DR. BUDNITZ: That's fair. That's fair.

MR. SEVERANCE: -- crosschecks. You have so many complicated systems that have to be overseen.

You know, one could imagine a lengthy spreadsheet that had all of those line items by category on it with a ballpark guesstimate of what the cost would be for each one of those items, even if it's a ballpark figure. It seems to me that having a public document that allows government agencies to understand what refurbishment of the plant would cost in order to operate safety, even for a five-year period of time -- the reason I -- I guess at this point is that -- you know, I'm sure PG&E is not used to doing that. These are generally internal documents.

But at this point we're talking about trying to operate for a five-year window. The projected shortfall on the grid for CAISO is occurring between 2025 and 2029 or 2030. And if we're talking about keeping the plant open to operate in that window of time but the number of systems that have to be completely rebuilt amount in the billions of dollars, why would we do that for a five-year operating window? It seems to commit us to a much longer amortization schedule to recover those investments.

So I'm thinking about this from a strictly

business standpoint as well as a safety standpoint. Understanding that if we're making safety first we're probably going to have to invest a great deal of capital. And I believe PG&E should be forthcoming about how much capital we're talking about on the front. And this was hinted at in Laird's comments. And I think it's an extremely relevant point we're talking about a large -- yeah, it's going to require 20 years to pay the debt on it is my point.

DR. BUDNITZ: Well, I don't know. You put your finger -- you put your finger on a question that's outside of our remit. Um, we -- we're going around reviewing every one of these things one by one. And we're -- we're going to seek assurance that if a particular pump needs to be refurbished or replaced that they have committed to do it. And we don't ask the question does it cost X dollars or Y dollars? We just ask have you committed to do it? And is it in the budget? And are you going to do it? And are you going do it on time?

Our committee has not been concerned with whether that's going to be costly or not. That's not our remit. If you want to get the cost information, you'd have to ask -- well, ask PG&E. We haven't -- we have carefully tried to stay out of the cost side except to assure that

it gets done, if you know what I mean. Okay?

MR. ALMAS: Okay. Thank you, Dr. Budnitz. I think in the interest of time and letting the --

MR. ANDERS: Well, we do have one -- Linda has her -- had hand up for some time.

MR. ALMAS: Okay. Can we make that the last so that we have time -- okay.

DR. BUDNITZ: I can see who it is. How are you, Linda?

MS. SEELEY: Good. Thank you.

DR. BUDNITZ: This is Linda Seeley who -- with whom -- we've known each other for a long time. Go ahead.

MS. SEELEY: I think that's something we need to know because we're talking about this date uncertain, like, five years. Are we -- you know, what are we planning for? I think we need to get an answer from PG&E about -- what kind of license will they apply for? Are they going to apply for a 20-year license extension? Are they going to apply for a five-year license extension? That's something that we don't know. And it's something that's critical to this conversation. And I'd like to know the answer to that.

DR. BUDNITZ: Linda, you put your finger on a key issue for -- let's imagine we have all these many, many

systems. Whether or not they've got to make it run to 2030 is different than if they've got to make it run to 2045. And they would make a different investment decision, perhaps. Because if they are going to 2045 they might replace the whole thing rather than refurbish.

We all understand that. They understand it too. We can't evaluate what they are going to do or plan to do until they tell us what they plan to do. And that plan depends on that answer to the question you just asked which we don't know and that they don't know. So it's at the present time up in the air. But that's got to be pinned down pretty soon before this evaluation can have validity that we want it to have.

Yes, ma'am. You bet.

MS. SEELEY: Thank you.

MR. ANDERS: Maureen, you had a comment from PG&E?

MS. ZAWALICK: Yes. Thanks, Linda, for the question. As I mentioned earlier, we are a regulated utility. And we will comply with the energy policies and the direction of the State of California and the Governor's office. We're not driving this. The Governor's office and the State of California is, with the compounding reliability risk that we face.

So we do not know. We need to wait to see what the legislation says, if it's five years or ten years or 20 years. So we'll evaluate it after we see that.

MR. ANDERS: Thank you very much. Will, turn it back to you to introduce our next speaker.

MR. ALMAS: Yes. I think I've introduced him already. Dr. Gibson will now discuss the current state of knowledge concerning seismic risk at the Diablo Canyon site.

DR. GIBSON: How about that? I'm going to sort of discuss that. I'm Bruce Gibson. I'm the Second District Supervisor for the County of San Luis Obispo. And as you've heard from a number of sources and is probably your mantra, the safety of the operation of Diablo Canyon is the primary issue that we all -- that we all deal with.

And as we know, seismic safety at the plant surround the areas surrounding the plant has been a very big issue for a very long time.

What I'm here to discuss is not so much a specific analysis of the seismic safety. I won't do that because that subject is deeply technical. It would require 50 slides full of grafts, maybe a few equations. Now I find that particularly exciting at 7:30 in the evening. But, in fact, grinding through that information would

probably not be productive. And it's not -- I don't mean to suggest that you are incapable of understanding it. It's just that it is a big, big topic.

What I would like to do is talk a little bit about the structure of the analysis of the seismic risk to the plant which goes back a long time. In particular I want to talk about some of the recent histories.

And since I was introduced as Dr. Bruce Gibson, I think I should make a clear statement about my qualifications. I have a bachelor's degree in physics. I have a masters and a Ph.D. in geophysics. And I had about a 15-year research career as an exploration seismologist. That's the use of seismic techniques to try to deduce the structure of the earth.

I'm going to be talking about an Independent Peer Review Panel that I was part of representing San Luis Obispo County. And what I should emphasize is that my research experience was not in seismic risk analysis, but it was in the techniques -- some of the techniques that are used to evaluate seismic risk analysis and, specifically, the business of reflexion seismology and other form of exploration seismology to deduce the structure of the earth.

I should also say that I am speaking for myself. I'm not speaking for the County or the Board of

Supervisors. And I'm not speaking on behalf of the Independent Peer Review Panel that I'll talk about in a little bit.

I will speak -- I think -- what I'd like to speak to is the necessity for independent peer review as we consider any issues surrounding Diablo Canyon. Issues that are pertinent now in it's continued operation to 2025, and certainly pertinent as we consider the possibility of extending that -- that operating period.

We hear a lot about the possibility of seismic retrofits that would be done to the plant. Those have not, to my knowledge, been very much specified nor has the specific motivation for doing them be specified. But I think those are absolutely fundamentally important issues to be concerned with as we consider whether the plant's operation should be extended.

So, as I said, I'm not going to be making any specific pronouncements of whether Diablo Canyon Power Plant is safe or not. Nor much specific analysis of the actual determinations of seismic safety. Those judgments as to whether it's safe to operate Diablo Canyon rests with others, specifically the Nuclear Regulatory Commission.

But I'd like to go back and talk a bit about the 21st century history of assessment of seismic risk. And

that goes back to 2006 when then Assemblyman, later state Senator, Sam Blakesley authored and got passed AB 1632, which -- the intent of which was to evaluate all the base load plants in the electric system of California to seismic risk. And it specified the use of some of the most -- well, the most advanced evaluation techniques available at the time. They wanted to do certain kinds of seismic surveys to study the risk again of all. But there was, of course, a considerable emphasis on Diablo Canyon because of the potential impact of an accident due to earthquake.

In 2007 the California Public Utilities Commission, the CPUC, directed PG&E to address the issues that were raised in AB 1632 and incorporate them into a feasibility study about the possibility of relicensing, which in 2007 was just being -- starting to be considered. That would be the normal relicensing of another 20 years after 2025.

In November of -- well, out of that then came various other rate cases in front -- before the CPUC as a means of figuring out how this gets paid for. It was going to be paid for by the rate payers.

So then we jump to November of 2009, PG&E actually does apply to the NRC for relicensing -- to extend the

license. And more PUC CPUC rate cases follows. They started in January of 2010.

As part of that process, the PUC in August of 2010 -- well, before that -- during those rate cases of 2010 the PUC directed that it should convene an Independent Peer Review Panel. That panel met for the first time in August 31st of 2010 and was composed of relevant technical experts from the California Energy Commission, California Geological Survey, California Seismic Safety Commission, and the PUC. Excuse me.

In November -- somewhere after August of 2010 the California Emergency Management was -- agency was added to the IPRP, Independent Peer Review Panel. And in November of 2011 San Luis Obispo County was added as a formal member of the IPRP. And I took the -- took the seat. I represented the county in the IPRP meetings.

The biggest effort of the IPRP was to review a very large project that PG&E undertook called the Central -- California Central Coast Seismic Imaging Project, which was an effort to characterize the seismic thread -- the seismic hazard, as we would call it. The geologic structure, the tectonic structure as we sometimes call it of the fault system surrounding the plant. And from that, then, to review the seismic risk analysis. And we'll talk a little bit about seismic

risk in a bit.

Those reviews were conducted in September through November of 2014. The IPRP wrote in the end a total of 13 or 14 specific reports. After, we would meet. PG&E would present. Other technical experts might present. And then the IPRP as a group would consider as its review of the technical information presented the conclusions drawn; again, our charge to review the plans, the methodology and the findings of PG&E's effort to characterize the seismic risk.

That effort continues. I'll go back and talk a little bit about some of the specific things we undertook. But just to finish up the -- sort of the history of the IPRP itself. In September of 2016, AB 361 was signed, which was a bill that established the IPRP in existence and active on making commentary on the seismic situation for as long as Diablo Canyon Power Plant operates.

PG&E runs a -- you may well have had a presentation on it -- what they call the long-term seismic program. This is an effort to further refine the understanding of seismic risk at the power plant. It's been in operation since the inception of the power plant, I think, in the early 1980s. And continues to this day addressing indeed a couple of the issues that

IPRP has raised that have not been fully resolved.

Along the lines there, there were two events that occurred that were significant. First in November of 2008, early in the process, the Shoreline Fault was discovered. That was, you may recall, the fault that runs very close to the power plant directly along the shoreline. And PG&E went ahead to analyze that fault as to its seismic risk.

They completed that analysis and submitted that in January of 2011. And their conclusion with which the IPRP, after analysis of a number of datasets concurs with, is that the Shoreline Fault does not pose any extra seismic threat to the power plant. The main seismic threat -- the main seismic hazard still rests with the Hosgri Fault, some -- about three miles offshore, which is capable of a much bigger earthquake. And I'll go into just a couple of the basics of seismic risk analysis here in just a second.

The other major event, as I'm sure you know, was the Fukushima earthquake in March of 2011 in Japan. And a year later in March of 2012 the NRC issued a request for information from -- for all the power plants that were subject to seismic risk to understand exactly -- to, basically, reconfirm their -- their analysis of the seismic risk of each power plant.

And Diablo Canyon is not alone in being subjected to seismic risk, actually. There's -- and I won't get off on a wonderful tectonic anomaly which is in the center of our country along the New Madrid Fault near New Madrid, Missouri. There is a fault capable of an earthquake comparable in size to the one that we could expect in the Hosgri Fault. They are in the middle of the country, thought to be stable in a variety of different ways.

In fact, in historical times there have been earthquakes of a size that have changed the course of the Mississippi. But that is a story for another evening, perhaps around the campfire or something like that.

So I think it's fair to say what happens is that the effort to pursue the seismic risk surrounding the normal relicensing sort of merged with the effort to do the evaluation post Fukushima. And this was, then, a large effort to really totally go in again with modern techniques, a fresh look at what the seismic risk of the -- of the -- to the plant would be.

I should say that what the NRC asked for in March of 2012 was a probabilistic seismic risk analysis. And that's an important piece of information to know. Because in the manner of assessing risk, the methodology

that's used by the NRC in judging whether to go ahead and license a plant is to ask: Is there more than a certain very low probability that an earthquake damaging enough to cause a serious critical safety-related failure was capable? And, typically, that risk is expressed in a probability -- an annual probability. What's the chance that this bad event might happen within a year?

And depending -- again, it takes a while to sort all of this out. But that probability might be -- the threshold of that might be below one in a 10,000 chance or one in a million, somewhere in that range. And, again, would take a minute to sort out exactly.

So -- but let me -- again, we're dealing with probabilities here. And that's, I think, in general a difficult issue for people to wrap their heads around to decide is something safe. What level of risk are you -- are you willing to take?

I would observe a side bar that that's -- that's a particularly important question when you deal with the safety of the nuclear power plant. Where we could say that the risk of a serious accident -- an accident, for instance, that might release radiation is very, very low. But the consequence of that -- of that -- you know, if that did happen, the impact is very, very high.

That's a difficult situation to process. If the -- if the probability of something, like, a fender bender, you know, is high and the consequence is, you know, not so high -- or the impact is not so high, you can sort of deal with that.

But when you deal with the issues of -- of probabilistic risk analysis for very large impact events that -- there is -- there is -- there are a set of criticisms that have been lodged that that's a difficult thing to make public policy off of.

Let me just briefly run through the -- just the very basics of seismic risk analysis and then talk a little bit about a couple of items that in one of the last IPRP reports we left open as important issues that need to be studied. And then talk a little bit about -- a little bit about the future.

So the question of probabilistic seismic risk analysis is what -- you know, what is the chance that an earthquake will shake the plant hard enough to cause a concerning sort of failure? And the question can be broken down into a number of parts. One is, what determines how hard the plant's going to shake? Well, that's quite clearly the size -- the maximum -- the size of the biggest expected earthquake or the size of the earthquake that might do it; the distance away that that

earthquake is generated, how far away, for instance, is the epicenter? And then the conditions around the plant, the specific geologic conditions. What kind of rocks? What kind of material does the plant rest on?

So when those seismic waves arrive at a site, the question is: How does that site respond? Does it create large ground motions or not? And it depends, again, on the materials there.

The chances of an earthquake of a concerning size occurring are related to the size of the earth -- well, let me -- let me back up. The size of the earthquake depends on a number of physical parameters; the length of the fault; the depth of the fault; basically, the size of the fault; the -- how fast the two sides of the fault move past one another and in what directions do they slip along, like, we tend to think the San Andrea's does or do they go in more vertical motions like other -- other faults do; and then the material that the fault is -- is located in.

So that determines the basic parameters of the size. And that's why the seismic imaging techniques were really important to try to understand how long is, for instance, the Hosgri Fault? What other faults does it connect to? Very particularly how long was the Shoreline Fault? How deep was the Shoreline Fault? And

what other faults did it connect to?
And the conclusion was reached that the Shoreline Fault didn't pose extra seismic risk because it wasn't that long. It didn't connect that far. And it wasn't that deep. So it just didn't have the spacial size to really create an earthquake even though it was very close to the plant it could pose a bigger threat than the one in the Hosgri.

Again, the chances are related to size. That's an empirical relationship that we find, that very large earthquakes are very much less likely to occur. So the probability of the concerning earthquake is related to the size of the concerning earthquake. And that's where we get into, then, the probabilistic risk analysis of how often?

And then what actually happens at the site? How does the site respond? Again, there are empirical relationships that have been studied. Earthquake seismology says, you know, we've studied earthquakes of this size from this distance and we've seen these kind of motions to the ground. Those are averages. But there's other ways of analyzing that which is explicitly to do a detailed analysis of what those materials are; what direction the waves come in and model exactly how strong the ground motion is going to be.

The -- the first approach this averaging approach is called an ergotic approach. And, you know, again -- and I would let folks from NRC, you know, correct or refine what I have to say. The analysis of risk that the NRC goes through is based on an ergotic approach to what happens at the -- at the site. And I promise that's as technical as I'm going to get with this.

Again, the IPRP -- and I have IPRP report Number 11. Again, I think there are 13 of them. When PG&E was asked to study the -- study the, you know, revised probabilistic seismic risk analysis post Fukushima that report was actually filed with the NRC in April of 2018. So that was post the agreement to close. But that's an issue that still quite relevant. That's relevant today to the operation of the plant.

And in wrapping up our analysis of the -- of the California Central Coast seismic imaging project the IPRP spoke to a couple of things that it thinks would be worthy of future study. We have a diagram -- again, I promised no slides. But we know that there are various components to the seismic risk, the length of a fault; the slip rate of a fault; conditions at the plant; and a number of other things.

There are certain of these components of the risk that have greater uncertainty than others. And that --

our effort has been to narrow the uncertainty. That's the effort of the long term seismic program that PG&E runs. It is the desire of the -- of the IPRP to address the analysis of each study that attempts to, again, narrow these.

What we saw as important points are: One, is the complexity of the site response. And we've suggested and PG&E has been pursuing over the years -- I haven't checked in recently with that -- a more detailed analysis of the physical structure around the site.

The other is the earthquake potential in the Irish hills. You may remember as part of this funny looking trucks trucking around the Irish hills vibrating the ground. That was a means of putting seismic energy into -- like, medical ultrasound to create an image.

The geology of the Irish Hills is notoriously complex. And trying to get an image of that is incredibly difficult. And those images did not produce definitive answers as to exactly where the faults were and how they ran in the Irish hills. Again, history suggests there have not been historic -- I don't recall significant historic earthquakes in the Irish hills. But because of their proximity to the plant the IPRP thought that this was a field for future study.

Let me just conclude by saying my experience with

the IPRP confirms for me that in any analysis of safety and in particular the seismic safety, which is a subset of the much wider mission that Dr. Budnitz described for the Independent Safety Committee, that ability to have independent experts review technical data and confirm or critique conclusions is fundamentally important.

And, again, as we move forward considering whether extension of the operating license is appropriate, I think it is absolutely fundamentally important to have independent review at every stage.

With that, I would be happy to answer your questions.

MR. ANDERS: Linda -- Bill, Linda has her hand up right now. Linda?

MS. SEELEY: Thank you very much, Supervisor Gibson, for your presentation. I wanted to ask -- I was looking online for the IPRP reports. And the last one I could find was from 2018. And I'm wondering if you have met since then.

DR. GIBSON: I believe the IPRP has met within the last year or so. There was one COVID meeting. I wasn't able to attend that one. And I'm not sure exactly of the -- well, I did get the slide deck of it. But I have not seen a report coming out of it. I have been talking to the PUC. And the IPRP is working to set up a meeting

for late September this year to continue its considerations.

MS. SEELEY: Thank you.

MR. ANDERS: Thank you. I'll turn it over to you, Bill, for any conclusions.

MR. LATHROP: Chuck, could I -- Chuck, could I ask a question?

MR. ANDERS: Oh, I'm sorry. I missed that, Scott. You are going to have to throw something at me.

MR. LATHROP: Sorry about that.

Just kind of curious. At the beginning of your presentation you talked about seismic techniques as far as evaluating. And so I got to thinking is that if you are saying techniques -- as far as the current evaluation that has happened at Diablo Canyon, I would assume that it's been done by the latest greatest technique; is that correct?

DR. GIBSON: It has been done by the latest greatest technique that could receive a permit from the Coastal Commission. So the initial vision PG&E had would be to do what's call a marine seismic reflection survey.

MR. LATHROP: Okay. And not -- and not others -- other areas?

DR. GIBSON: Well, a major -- a large -- a high

energy seismic survey. The consideration there is that compressed air sources generate a tremendous amount of marine noise. And the Coastal Commission didn't permit it. The alternate was to use lower power, higher frequencies that only imaged the near surface. But through some geologic deductions many of the same conclusions can be approached with detailed analysis of the very near surface.

MR. LATHROP: Okay. So based on the information gathered and the design that's in place right now for the power plant, I'm assuming that it's based on the worst case scenario as far as the faults are concerned. I think you mentioned a couple of faults. And I think the one that everyone is aware of is what the plant is designed for, right?

DR. GIBSON: Right. The Hosgri Fault.

MR. LATHROP: So that would not need to be changed unless we found a new fault or we have a new technique that discovers maybe a different probability or it needs to be designed.

DR. GIBSON: Or what the IPRP -- again, there is a range of uncertainty in the amount of hazard for conditions around the plant. The IPRP would like that nailed down.

MR. LATHROP: You want -- you want the criteria

refined even further.

DR. GIBSON: Yeah. So we want to know what the site response is what it's called.

MR. LATHROP: Understand.

DR. GIBSON: And -- and -- you know, which is -- has been analyzed and evaluated by NRC, decided to be okay.

MR. LATHROP: Understood.

DR. GIBSON: There is a range of uncertainty. I won't speak to whether the upper range on the bad size is going to cause a problem. But that's the -- that's the -- one of the issues we'd like to investigate.

MR. LATHROP: Yeah. It seems to me that we're talking about somebody's degree of criteria for making that design. I mean, your -- your position may be different than mine as far as what that should be designed towards. And so that's what I'm trying to point out. It seems to me that based on your analysis or studies you can come to a conclusion that it needs improvement, or you could come to the conclusion that it's fine the way it is. It's just curious to me as far as who would actually determine that.

DR. GIBSON: Well, that's -- that's the NRC. And, again -- and I think the NRC would speak to this. Their concern is the reactor part of the plant.

MR. LATHROP: Yes. Yes.

DR. GIBSON: The seismic retrofits could be more broadly considered to other aspects. And you looked at Dr. Budnitz's list. Incredibly complex. And so there might be seismic retrofits there that are important to plant safety that could be evaluated on a different basis.

MR. LATHROP: Understood. Thank you.

MR. ANDERS: Kara. And I think Maureen wants to speak.

Also, we need to point out that we are past our time on this agenda item.

MS. WOODRUFF: Okay. Quick question then.

Supervisor Gibson, do you know what year Hosgri Fault was discovered about?

DR. GIBSON: I think it was 1974, if I remember correctly. It was in the -- it was in the seventies.

MS. WOODRUFF: And then you mentioned the Shoreline Fault was discovered in --

DR. GIBSON: 2008.

MS. WOODRUFF: -- 2011. 2008?

DR. GIBSON: Yeah.

MS. WOODRUFF: Are there any other faults out there that people are aware of?

DR. GIBSON: Yes. I mean, there are a number --

it's a complicated tectonic area. But in terms of faults that are big enough to affect seismic risk, the Hosgri is the main one. The Shoreline was considered and then decided it's not the controlling source of potential seismic risk.

MS. WOODRUFF: Okay. Because I hear sometimes people talk about four faults off the coast of the plant. Is that sort of a simplistic characterization?

DR. GIBSON: Well, other faults exist. Again, it's a question of how big are they and what do they connect to? And the Hosgri extends a bit north. And I'm reading from notes because I had to refresh my memory, frankly. It's been some years since I was deep into the details here.

But there is a fairly significant fault running up the coast of the California. The question is: How does the Hosgri connect with that and is there any way of isolating, you know, geologically the Hosgri from that? But yes, other faults exist.

There's a fault in Avila Bay, the name of which escapes me right now. But there -- this is a tectonically active area. There are faults all over the place. It's, again, the question of scale.

MS. WOODRUFF: Thank you.

MR. ANDERS: Thank you, Kara. Maureen?

MS. ZAWALICK: Actually, Felipe is going to introduce the next. Go ahead.

UNIDENTIFIED SPEAKER: Yeah. So as was mentioned we do have a couple of members from the Nuclear Regulatory Commission on the line here. So what I'd like to do is introduce Cliff Munson for -- as introduced earlier as a senior technical advisor on the engineering and external hazards.

And as Supervisor Gibson brought up, if there is any clarification from the Nuclear Regulatory Commission on that process if you could briefly mention how new seismic information is handled. And if there were to be concerns, how those could be raised to the Nuclear Regulatory Commission. So if I could turn it over to Mr. Munson.

DR. MUNSON: Okay. Yeah. Supervisor Gibson gave a great overview of the seismic hazard reevaluation that PG&E did following the Fukushima disaster in 2011. And I just wanted to point out that we have, um, produced a new reg, KM. It's an extensive document that, um, provides an overview of each of the hazard -- reevaluated hazards at each of the nuclear power plants. And Section 3.3 describes our reevaluation of the Diablo Canyon plant in terms of the seismic hazard.

Um, going forward, um, again, there was a --

earlier in the meeting there was a website link that people can go to to, you know, um, post their concerns or any issues that they have.

The NRC staff has it's own internal processes for constantly evaluating new seismic information that becomes available. And we're currently doing that for several plants in the central eastern U.S. And so as, you know, we evaluate studies from the U.S Geological Survey and other researchers to determine if -- if more information about these faults off of the Diablo Canyon plant -- um, if the slip rates for those faults or the fault geometry or fault links are reevaluated or reassessed and we need to go in and check those numbers and re -- redetermine what the hazard is.

So we do have processes. We are keeping on top of that and, um, constantly assessing their seismic risk that, um, occurs from the hazards. So, hopefully, that answers the question.

And, again, if you are interested in looking at that new reg KM, it's new reg KM 017. And it's a 600-plus page document that describes the hazard as all the U.S. nuclear power plants.

MR. ALMAS: Any other comments you would like to make, Dr. Munson?

DR. MUNSON: Just one thing I'd like to point out

a factor that was -- that we evaluated that was previously not evaluated in the deterministic analyses that Supervisor Gibson referred to. For example, for the Shoreline Fault in 2011, we look at fault's slip rate now in the probabilistic seismic hazard analyses. One of the main factors we look at is the slip rate on these faults. So what is a slip rate on the Hosgri Fault? What is the slip rate on the Shoreline Fault? The Los Osos Fault? The San Luis Bay Fault? These are faults that surround the site. And so a critical parameter is the fault slip rate.

And all that great seismic data that Supervisor Gibson referred to was used to determine that fault slip rate. And then, again, that plays a big factor in determining which fault -- faults control the hazard at the site. And as Supervisor Gibson pointed out, it is the Hosgri Fault which has a slip rate of about two millimeters per year which dominates the hazard at Diablo Canyon.

So, um, I just wanted to point that out. And, um, that we did an independent analyses to verify those slip rates at the NRC. And we also performed an independent analyses to verify the final ground motion models and ground motion response spectra that was developed by PG&E.

MR. ALMAS: Could I ask when that analysis was done? Is this relatively recently or in the past?

DR. MUNSON: So PG&E submitted it's reevaluated seismic hazard in 2015 to the NRC. And we completed our analyses of that -- our review of that analyses in 2017. So it is fairly recent.

Once that analyses was complete, PG&E went ahead and performed a seismic probabilistic risk assessment, seismic PRA of the plant, that evaluated the ground -- the updated seismic hazard that they performed following the Fukushima disaster.

So they took into account the updated ground motion and its impact on the plant. And that was completed in 2018. And I believe the review by the NRC staff was completed in 2019. So all of that information is fairly -- I would say fairly recent.

MR. ALMAS: Thank you. Chuck, should we conclude or -- do we have some additional questions?

MR. ANDERS: Yes. Please do so. There are no hands up right here so --

MR. ALMAS: Okay. I'm just --

MR. ANDERS: I'm sorry, Bruce. Didn't have your light on.

MR. SEVERANCE: Yeah. My question was Dr. Gibson had suggested that the risk assessment

includes conditions at the plant. And I just wanted to go back to the embrittlement assessment that was done. There was something called a coupon analysis where they take a piece of metal that's left inside the reactor vessel. This was assessed in 2002. The reactor vessel in unit one was found to be among the most embrittled in the nation. It's a radiation embrittlement. It's a known effect. And, apparently, it's due to metallurgical specifications that were probably slightly off to begin with.

Subsequent to that the NRC decided that the embrittlement was not an issue, although embrittlement -- you know, so they kind of changed the standard. Embrittlement is not a condition that goes away. There is an article about the Palisades Nuclear Power Plant that kind of describes embrittlement as something that would distinctly inhibit rapid shutdown of a reactor in an emergency.

So in my mind combine that condition or conditions like that with the possibility of a large seismic event.

And, you know, a large seismic event followed by the inability to shut down a reactor as quickly as you might otherwise is something that should be evaluated and of concern. And I hope that the Independent Safety Committee considers the seismology in conjunction with

conditions like that in the plant. And I would hope that, you know, PG&E is -- is discussing openly -- they refer to some data and documents that the NRC has provided that indicate why embrittlement is not an issue. I would hope that the Independent Safety Committee is investigating that very carefully to see whether or not they agree. And I would suggest that, you know, additional independent experts might be brought in to -- you know, consultants might be brought in to weigh in on that kind of analysis.

So I appreciate the concern about seismology, including conditions at the plant and some open discussion about that. Thank you.

And if you could comment on whether or not you think that that is the type of condition that you would consider to increase risks at the plant. And maybe this is something
Dr. Gibson would like to respond to. But I would appreciate, you know, comment from those that want to field that question.

DR. BUDNITZ: Maybe -- this is Bob Budnitz from the DCISC. You can rest assured that we're going to revisit that in this next round. Let me describe.

PG&E's submittal a bunch of years ago seeking the 20-year extension documented why at the time they

thought that that was -- that was not a safety issue. And the NRC was in the course of reviewing it when that whole process was interrupted.

Now, if they go back into the NRC asking for an extension, you know, soon -- a five-year extension or 20-year -- none of us know what it will be. They are going to have to submit the latest information that they believe -- they have measurements and analysis and the like. And when they submit it, the NRC is going to review it. And when they submit that latest information and the analysis to support extension we will review it too.

You just asked whether the Independent Safety Committee will review it? Yes, we will. It's on our list. And there's no way it's going to escape our attention because it's an important issue.

But there is something important that I want to say technically that you should know. The pressure vessels are ductal, which means that they -- I want you to imagine a stick of black licorice that you could buy -- that my grandkids buy in the store. You can bend it and twist it. That's called ductal.

Then I want you to imagine a piece of spaghetti. You can't bend it and twist it. It's brittle. You understand the distinction, right? Metal, when it's

very hot -- and those pressure vessels are very hot when they are running -- is -- is highly ductal. And it is not very susceptible to breaking. It's when it's cooled down that it is more susceptible.

Well, when the plant is running, it's hot. So the most important threat is when it's cooled down. For example, during an extended shutdown or an outage. Or if, inadvertently, it's running and it's hot and inadvertently very cold water is injected into the plant that then suddenly cools a vessel that had been hot. We call that pressurized thermal shock. Pressurized thermal shock is a phenomenon that would threaten the vessel. Pressurized thermal shock at the Diablo vessels has been looked at extensively.

And the NRC -- the plant submitted a submittal about it. The NRC reviewed it. Our committee reviewed it too. But that was a half dozen years ago, maybe even seven or eight years ago. I'd have to look it up.

And whether there's any new information -- or if there isn't, whether there's a more advanced methodology or in any event whether there is extra data, all of that will be the sort of grist for the mill for the analysis that we'll do; that I know the NRC will do again, on that specific question. Okay?

But rest assured that when the bristle is hot it's

real -- there's not a threat of it being brittle when it's hot. The threat is when it's being cooled down.

MR. ANDERS: Thank you. Bill?

MR. ALMAS: Yes. To summarize, I guess -- I think that I want to thank all of the participants, all of the experts that have presented today. I think that was an excellent presentation. I know I've learned some things. And I would also take away from this that we -- should the plant life be extended, there's a lot of work to be done from a lot of different people and in a relatively short period of time. That's stating the obvious, but I'll end with that.

DR. BUDNITZ: Bill and Chuck, I just want to add one more thing. Again, this is the Bob Budnitz from the DCISC. When the engagement panel was new a few years ago we met with you people and we pledged to support you whenever you asked. So far whenever you've asked we've supported you. I want to just make that pledge again. If you need technical support or you have technical questions to ask or you want somebody like me to come and do what I've just done, you can count on us to respond. That's part of our charter. And we'll try to be as responsive as we can be. Thank you.

MR. ALMAS: Thank you.

MR. ANDERS: Dena, you have --

MS. BELLMAN: Just real quick. I know we had a little bit of an abrupt transition there. I want to make sure we thank Dr. Gibson for being here. He -- you did a great presentation. And we really appreciate that you, you know, dumbed it down a little for us. No. It was wonderful. I learned a lot, so I thank you very much.

MR. ANDERS: Thank you, Dena. That brings us to our break. And in thanking people too we have to recognize the folks from NRC and some of the other folks online are back east. And it is approaching 11, 12:00 right now. So thank you very much for being out -- making the extra effort and being with us.

Our agenda calls for a break right now. So I'm going to ask the panel if you want to take a break. Afterwards we have a panel discussion period. We've eaten into a little bit of that discussion time. And what's your preference? Pardon?

MS. WOODRUFF: Five minutes.

MR. ANDERS: Five-minute break. Okay. So it is -- let's be back at 8:25. We'll give you seven minutes.

(Brief recess.)

MR. ANDERS: Okay everyone. I think we're ready.

The final topics of our meeting are panel questions and comments where the panel will have an

opportunity to discuss -- ask questions and discuss amongst themselves the information they have heard so far. And then public comment, which we want to begin at 8:40.

This is a community engagement panel. And this issue has drawn attention throughout the State of California and the country, if not internationally. And there may be many that want to make a comment. We want -- and the panel has decided that they would like to have the community to have the first shot, so to speak, at providing comments. Because, again, this is a community engagement panel around Diablo Canyon.

And so the procedure that we're going to follow is anyone in the -- here in person that wants to speak, please fill out a blue card and hand it to Donna or bring it back up here. And the folks that are here in person will be provided the first opportunity to speak.

Those online that reside in Ventura, Santa Barbara,
San Luis Obispo, or Monterey Counties -- in other words, Ventura up to Santa Cruz County will have the opportunity to speak online next.

And those within the State of California will have the opportunity to speak after that.

Those people outside of the State of California --

we're not going to take any public comments from those outside of California tonight. However, we encourage you strongly to submit your comments in writing on the panel website at DiabloCanyonPanel.org. As was previously stated just click on the big blue box in the upper right-hand corner. That "submit comment" box never goes away regardless of where you are on the site. It dogs you. And please click on that and submit comments. And all of the panel members will receive those comments. And they will also be part of the public record.

So with that, what we're going to do is we're going to lower everybody's hand. And I'm asking only those people who live in the Central Coast, that is Ventura to Santa Cruz, raise your hand.

Those people in the State of California, not including those previous counties, raise your hand. Great. Thank you very much. And we'll take the presentations in order.

So we will determine how much time everybody has based on the number of hands that are raised and the number of comment cards that we received.

So let's go ahead and begin with the public comment period -- or not public comment period, I'm sorry, the panel discussion. Any panel members have any

comments, observations that they would like to make? Any questions of some of the experts or the participants that have contributed to this meeting?

Kara.

MS. WOODRUFF: I just have a quick comment. A lot of things are happening in the very short term. Tomorrow, again, to remind you, the Senate Energy Committee will be meeting. I believe anywhere from 11:30 to 12:30 in the afternoon they will begin. We expect there's a decent chance that legislative language will be released on Friday and go into print. And there will be a vote on that legislative language, if it is produced, probably by the very last day of session which is August 31st, next Wednesday. A lot of things are happening quickly. And so if you want to keep track of it -- we're going to try to keep the engagement panel website very up to date. So if you want to know what's happening, periodically check back. And we'll do our best to keep things posted so that you can follow the issues.

As I mentioned, things are moving quickly. So please check our website DiabloCanyonPanel.org. Thank you. And thanks to all the speakers too. I thought it was a great presentation today.

MR. ANDERS: Thank you. Tim and then -- oh, and

then Mariam.

DR. AURAN: I may be blind sighting Maureen or Tom on a question like this. But I think I have heard a number of people ask -- there have been extensive preparations for the decommissioning of the plant at this point. And if there is a plan to eventually extend the life ten years or so -- of the work that's been done up until this point, is much of it applicable to a delayed decommissioning or is this effectively kind of lost -- lost work that has been done up until this point?

Mr. JONES: Thank you, Dr. Auran. Tom Jones with PG&E. Almost all of the work that the panel has done and that the utility has done is still applicable. So when you think about decommissioning the nuclear facility we still have the same volumes of things to deal with, the exception of fuel. Right? So two containments still to dismantle, a break water to still repurpose. So the bulk of the work is the same.

Concepts like land conservation won't change. Right? We know what the expectation is which matches the company's. And when you go down the list the issues get very narrow. And it's, essentially, an evergreen list of items at this point for the analysis that we've done.

Things will have to updated along the way, certain processes. For instance, like NIFA. If you don't have your information within the last five years, it's considered stale and you start over. So we might have to do additional characterizations. For instance, if we did biological assessments that found California red-legged frogs, we may have to assess where they are in five or ten years or whatever duration is there. But the scope is really well defined and the bulk of the work is done.

DR. AURAN: Great. Thank you very much.

MR. ANDERS: Miriam.

MS. SHAH: Yeah. I just had a procedural question. I get a lot of questions from the public. And I really appreciated all the background -- extensive background tonight about all of the steps that take place for safety and assessing seismology. But what about when I just get questions from people at the gym or out in the community when they are asking me: How are you going to make sure it's safe? What would be your, you know, 1000 foot answer for that?

Like, if it's extended five years; if it's extended ten years, how would you like us to just explain that to someone without going into well, first, we're going to go to this and that -- I want to know how

to communicate this to the public.

MS. ZAWALICK: I think I'll start here. It's Maureen Zawalick from PG&E.

So first and foremost one way I would answer that is that Diablo Canyon is a top performing plant in the United States as the Nuclear Regulatory Commission has concluded and also other industry evaluators and so forth.

The other thing I would emphasize is Diablo Canyon is the only station in the United States that has an Independent Safety Committee like Dr. Budnitz is on. And that's another -- so those layers of independent oversight ensuring that we're staying safe will be in place if we have extended operations. Those are just a few things I would add.

Tom, do you want to add anything more? No? We're good.

Does that help?

MS. SHAH: Yes. Thank you.

MS. ZAWALICK: Tom?

DR. JONES: The Nuclear Regulatory Commission has something called resident inspectors. And they are in contact with local decision makers. But they are on site at the station. And they have access to anything. They attend meetings. They surveil work being done in

the field by employees. And the NRC has the ability to immediately shut down the plant if they see something unsafe that causes them concern or is outside the bounds of our license. So they are a very intrusive by design regulator.

I think of them as akin to the one that the public is most familiar with, which is the FAA, which can ground a plane or reroute the planes flight. Right?

So the NRC has at least two resident inspectors on site during all operations. And when there's infrequent evolutions they invite other experts from their shop; might come from Maryland, might come from region four, which is in Texas. But we'll have addition experts -- subject matter experts across Nuclear Regulatory Commission come and investigate the site in addition to the Independent Safety Commission.

MS. SHAH: Thank you.

DR. BUDNITZ: This is Bob Budnitz. Maybe I can answer -- I can't answer for our Independent Safety Committee, the whole committee, but I'll give you my perspective.

Many members of the public come to our public meetings. And they want the plant shut down that afternoon, because they don't judge that it's safe enough. I'm not going to argue with them about what

they think is safe enough, because people have different views about what's safe enough. And that's a really difficult problem.

But I want to respond by saying that right now we have judged that the plant is one of the top performing -- our committee has, and we put it in writing -- is one of the top performers in the industry, as Maureen Zawalick said. And she can say it proudly. We just say it as evaluators.

And our, sort of, criterion is that we're looking to make sure, in our evaluations, that if they go forward that there will be no degradation in the safety at all. That every safety parameter that matters will be maintained at the high level that it needs to be.

And there's even another criterion which I want to pass along. Many years ago the Nuclear Regulatory Commission adopted a policy in which they expected, they said, that all the plants that they regulate would gradually be safer as time went on.

And if you look at the safety performance of the almost 100 plants that are out there now, that's generally been the case. They are generally safer than they were ten years ago and safer than they were 20 years ago, because all sorts of things are better.

It is our -- Diablo Canyon Independent Safety

Committee expectation -- I can't speak for us -- this is informal but this is our idea. That when we're evaluating the -- the expectation, if they go forward for five more years or 15 or whatever, that we will expect that there will be no degradation in any of the safety parameters or indicators of importance.

And I think you can expect that if we see something, we're going to write it up and call people's attention to it. And if we see that there isn't, we'll write that up. I think that's a reasonable way to answer your question about whether it's safe enough.

MS. SHAH: Thank you. I really appreciate it. And I appreciate those ways of just being able to explain it to people in a short concise way. Because I get questions in the grocery store, at the gym, and I can't, like, pull out a report. So this is really helpful. Thank you.

MR. ANDERS: Any other comments or questions from the panel?

Okay. Let's move on to our public comment period. And I want to turn this over to Miriam Shah to moderate this discussion. Just, um, looking at the number of hands raised and the number of people here, we've got three people that want to comment in person; and approximately eight people online and within the Central

Coast; and six statewide.

So, um, doing the math, allowing a little time for comment and discussion. The folks in person would be three minutes. The folks on the Central Coast, Ventura through Santa Cruz, two minutes. And those people commenting and calling in statewide outside of the Central Coast, one minute.

Mariam?

MS. SHAH: All right. Thank you. I appreciate it. Why don't -- and I just want to do a quick reminder, we are the Decommissioning Engagement Panel. We are not here to make decisions tonight. We're here to hear your concerns. And we will try to answer procedural or operational questions as we can. I will note down your questions as you are talking. And at the end we will try to answer ones that are answerable at this time. So let's proceed. Thank you.

MR. ANDERS: So our first in-person speaker -- first person is Sam Blakesley followed by Dan See Su -- I'm sorry if I mispronounced -- and Eric Velum.

MR. BLAKESLEY: Thank you for the assist there, Tom.

Thank you panel. I appreciate the opportunity to speak to you. You represent us locally. And I've had that privilege at a prior time in my life representing

my community up in the state legislature. So I want to speak to you as an entity that represents us locally. And I appreciate you giving opportunity for those who live here to speak.

We heard a lot about probabilistic risk assessment, which all sounds great. Dr. Bruce Gibson talked about the difference between a fender bender and what you pay to fix a fender bender versus a more calamitous outcome that may be quite rare but the outcome of which would be absolutely devastating. And the challenge of trying to weigh those two.

We've seen many instances where advanced technologies have been believed to be safe. We remember the space shuttle was described as safe and could have 1000 launches without a failure. We found out very quickly that such is not the case in a complex system. We've been told that transmission lines are safe. And the people in Paradise found out very personally just how safe they were or were not. And same was true with the people in San Bruno.

So I come to you not talking about probabilistic risk assessment. Although I have a doctorate in geological sciences, a masters and a bachelors in geophysics from Berkeley. I served on the California Seismic Safety Commission and authored some of the

legislation you've heard about.

I come to you as a constituent, talking about the real world impacts of uncertainty. Why do I talk about uncertainty? Because what we're talking about here is how sure are we that we are safe or not safe?

There are a lot of elements that go into that, but there is a very important area of seismology which is still under intensive investigation around which we don't have much certainty, but which we would need to know with great precision to say that the plant is safe. And that is the behavior of strong motion seismology and proximity through very large earthquakes that are literally hundreds of meters from a complex facility.

Now, you heard Dr. Gibson talk about the time distance relationships, the distance magnitude relationships, and the probabilistic methodologies that are used to come up with the approximate levels of shaking. All of that's well and good, unless you are extremely close to an active fault.

Now we don't have a lot of data about earthquakes like that because -- in fact, you are very lucky to have that type of instrumentation right next to a fault when it fails.

There is a fairly well-known example in Parkfield, California, about 20 years ago where a magnitude 6

earthquake occurred. That's where I did much of my doctoral studies. So I am very familiar with the San Andreas Fault. And what was fascinating with the dozens of swung motion instruments surrounding Parkfield is that when they looked at the shaking, instead of coming up with a single simple number that accurately defined how a magnitude 6 earthquake would produce shaking, they found shaking as low as a tenth of a G at 15 seconds and as high as over 2.5 G.

The magnitude and range of the uncertainty and the actual measurements so far eclipse any estimate that would have otherwise have been made, you have to conclude estimates of shaking in the near field are poorly constrained. And it's doubly so in the site response.

MR. ANDERS: To be fair, all --

MR. BLAKESLEY: Thank you very much.

MR. ANDERS: -- I need to ask you --

MR. BLAKESLEY: Appreciate it.

MR. ANDERS: Our next speaker is Eric Don followed by Dan Su -- Su or Sea. And I apologize again.

MS. WOODRUFF: I think that's Eric Veum.

MR. VEUM: Good evening, distinguished panel. My name is Eric Veum. I am a resident here of San Luis Obispo and I'm co-author of the brief that was submitted

to this panel Pathways to Clean and Reliable Grid for California Without Diablo Canyon.

I wanted to come before you this evening to make just several brief points because time is short.

First is that, um, the intention of this brief is to bring together a -- to offer a perspective that starts to unpackage the complexity of the issue around the continuation of Diablo Canyon and to look at, from a system's perspective, the pieces that contribute to overall reliability and success in reducing greenhouse gas emissions.

And if you look at the sources, the -- the brief is highly sourced -- all of the sources come from either PG&E's own testimony or from agencies like the CPUC, CAISO and others. And so the intent was not to do any original work, but to analyze and integrate the picture of, um, the state's policy and resource availability that paints a different picture that's being told around the necessity for the extension of operation of Diablo Canyon.

And so in brief, several points I'd like to make. One is for those that understand how a nuclear plant operates it is not intended to be used as a reliability of resource. It is not flexible. It's a large inflexible generator that's not intended to meet the

needs under extreme cases for a few hours. It's meant to run all the time and produce a lot of electricity.

The second, in relation to the fact that it produces a lot of electricity, PG&E, in their own testimony during decommissioning, has demonstrated that PG&E does not need the plant in order to meet its goals. And that the PUC has updated the renewable portfolio standard to 73 percent by 2032. And what that means is continuing the operation of Diablo Canyon, providing eight percent of California's energy, will decrease our ability to move forward in integrating flexible resources like renewable energy, battery storage and others, to achieve our RPS goals by 2032.

So I know my time is short. But my recommendations and my co-authors' recommendations I encourage all to take a close look at. And for the legislature to seriously consider them as they move forward with considering legislation in the near term. Thank you so much.

MS. SHAH: Thank you.

MR. ANDERS: Thank you. Our next speaker is Dan See. And please state your name, your residence and any affiliation.

MR. SEE: Sure. Dan See. I'm a licensed professional engineer in the State of California. I

live here in San Luis Obispo. I have a masters from Cal Poly. I teach there part-time. I spent seven years working at Diablo Canyon as a consultant. I'm now working elsewhere for the past four years.

Diablo -- I didn't set out to work in energy. But working at the plant for seven years I grew to understand the importance of energy in our daily lives and what Diablo represents, stable base-load power.

Being a civil engineer my responsibility was seismic safety. Everything we did -- you know, we -- we, basically -- you know, it's an electrical facility. That's its purpose. It has a lot of mechanical equipment. But then civil engineers make sure stuff doesn't fall down, basically. Simplest terms I can think of, but that's what it is.

And so to Dr. Blakesley's point, certainty. Nothing in life is certain. Nothing. Not a single thing. If we want to get into engineering, the practice of engineering, engineering doesn't give you certainty in any field.

Space shuttle? Yes, you are correct.

Seismic? Do we really want to get into questioning everything?

How safe is the Golden Gate Bridge?

How safe is every sky rise in San Francisco? It

has a major fault running through the barrier. If there's an earthquake bigger than what those are designed for, there's a very immediate and certain outcome.

If there's a radiation release at Diablo -- if there is an earthquake big enough to cause a radiation release at Diablo, this whole county is flat. It's flat. Buildings are fallen down, bridges collapse, gas lines ruptured. This town is devastated if there's an earthquake large enough. And thousands of people dead in the county. If there's -- if there's an earthquake big enough to do radiation release -- to cause a radiation release at Diablo -- there's no certainties in anything.

So demanding a certainty from Diablo is -- is not engineering. It's not the practice of engineering.

Um, stable base-load power? Not going away. California wants to have all cars 2035 and after be electric vehicles. Our electric demand is going to go through the roof; through the roof.

We want to kick gas appliances out of homes and electrify homes; water heaters, you know, furnaces, stoves, et cetera. You know, gas-powered clothes dryer -- our electric demand is going to go through the roof. We need all the energy we can get.

Kicking off our safest, largest source of low carbon energy, lower than anything else that we have, is falling. It is absolute falling. Thank you.

MS. SHAH: Thank you.

MR. ANDERS: Thank you. Mariam?

MS. SHAH: And so now we will switch to our speakers by Zoom; is that correct, Chuck?

MR. ANDERS: That's right. And so the speakers online in the region will have two minutes. And I'd like you first to -- to introduce yourself; your name. If you have a complex name please spell it for our court reporter, and your residence and, um, any affiliation. And be as straight out and straight up. And if your residence isn't within this area, we're going to ask you to take your hand down and move to the end of the list.

So our first commenter is Donna Gilmore. Donna? Please unmute your computer or phone.

MS. GILMORE: Okay. Can you hear me?

MR. ANDERS: Yes, we can.

MS. GILMORE: Okay. Great. Thank you. Um, thanks. Donna Gilmore. I live in Monterey, California.

On my profession it says a system analyst on large mission critical systems. I've spent a lot of time researching for the Diablo -- for the San Onofre plant. And was involved from the shutdown point to the waste

storage. So I've done considerable research, including the transmission issues.

So on the Diablo Canyon, I researched the NRC database for downtime for Diablo Canyon for the last few years. They average 40 percent -- at least 40 percent of the time at least one reactor was down for the year. 40 percent. And that's been consistent from 2008 all the way through the year 2021. '22 hasn't finished yet. 40 percent downtime for one reactor.

And the slide that was shown in the other meeting they are expecting both reactors will be running at the same time. And so it doesn't -- it doesn't look like that -- instead of being -- helping the grid, it looks more like Diablo Canyon will actually increase our risk for blackouts. And some of it is planned maintenance and some of it is unplanned. Every year there has been something. As the plant gets older there is going to be more things.

So, you know, as a systems analyst, you have to look at the whole picture. The consequence of failure at Diablo is unacceptable. And I have some information I can send you.

MS. SHAH: Thank you for those comments.

MR. ANDERS: Thank you.

MS. SHAH: Who do we have next?

MR. ANDERS: Our next speaker is Eric Greening. Eric, please unmute your microphone.

We're going to have a tech problem here, I guess. And we're going to call on our tech specialist, Bob, to help us out.

In the meantime, let's move on to Susan Harvey. And, Eric, we'll come back to you.

(Zoom unintelligible talking.)

MR. GREENING: Is this Susan's turn or my turn?

MR. ANDERS: Okay. Eric, please go ahead. Please state your name and residence and any affiliation.

MR. GREENING: I'm Eric Greening from Atascadero. And I very much appreciate all of these presentations. It sounds as if there is a lot more than $1.4 billion of work to do involved with any license extension.

My question is about the senate hearing tomorrow. Normally, hearings are held about introduced legislation in committees and so on. But, of course, this is a very accelerated process. Legislation won't be introduced. But there's language circulating -- actually, two pieces of language circulating. There's what the Governor wants and then there's what's coming from the Assembly. So are both of those sort of draft languages germane to tomorrow's senate hearing? Are they both getting heard

and attention?

And then the question is: In what sequence will they be introduced and in what sequence will they be voted on? And I think the sequence could be very important. If one -- if the passage of one, essentially, preempts the other, then what happens?

My case -- and, obviously, you are not the legislature. And they are probably not listening to you right now. But I believe the assembly language should take precedence. This is the legislature's job. Not to take dictation from the Governor but to originate legislation. They make the laws. They make the policy. They make the budgets. They decide where the money will go.

The Governor's job is to execute, not to dictate to the legislature. So I would very, very strongly hope that the assembly bill gets fully heard, fully voted on before any dictation from the Governor has a chance to go through the same process. Thank you.

MS. SHAH: Thank you, Eric. Good to hear from you. Next person.

MR. ANDERS: Our next speaker is Susan Harvey. Followed by Patrick McGinthy and then Heather Hoff. Susan, go ahead.

MS. HARVEY: Hi. I'm Susan Harvey speaking for

the (Zoom inaudible) opposes (Zoom inaudible) Diablo Canyon Power Plant. The -- California has added more than 4000 new megawatts of reliable power capacity to the state's grid. That's the equivalent of two Diablo Canyons. And we need a better plan than keeping Diablo open. A better plan would -- would -- the other legislation has been presented recently, an alternative to Diablo is a good example of at least an attempt for a better plan.

But regarding the legislation that will be addressing keeping a -- continuing Diablo Canyon's operation, PG&E stated at a decommissioning hearing that the cost per hour to generate electricity at Diablo is 6.57 cent a kilowatt hour. I think it's incumbent upon PG&E to make sure that the legislators and the public know what the anticipated cost for kilowatt hour annually will be over the ten years. And how much of that is a rate payer obligation. And how much will the taxpayers be obligated to pay? How much are the stockholders going to pay? And how much, unfortunately, are future generations going to pay?

There's so many, as Dr. Budnitz made clear, moving parts to this. It's almost impossible to make a decent risk assessment. And that's another reason, just from that standpoint, that it should be closed -- that it

should be closed on time.

The other problem with the legislation -- the legislation has been looking at tomorrow and (Zoom inaudible) completely glossed over. All the problems are completely glossed over. Listen. Thank you so much for your time. I live in the Creston area. Thank you so much.

MS. SHAH: Thank you. Next?

MR. ANDERS: Next speaker is Patrick McGinney, followed by Heather Hoff and Paris Ortiz Wines.

MR. MCGINTHY: Thank you, panel, for the opportunity to speak. My name is Patrick McGinthy. And I'm a 50-year resident of Los Osos and a stakeholder of the area.

I vehemently oppose the continued operation of the Diablo Canyon Nuclear Power Plant which may be a top performing plant. I have no background to question that. But we all know the faults underneath the plant can also be top performing. It needs to be shut down as promised 40 years ago.

If you remember at that time we were told nuclear power was safe until Three Mile Island happened. And then there was Chernobyl, which wiped out a whole city. And then Fukushima Daiichi which is still polluting the Pacific Ocean and has made the surrounding area

uninhabitable.

No one in the USGS has said California is 50 years overdue for a major earthquake. Are we willing to take the risk for another 50 or five or 20 years that it won't happen again or won't happen. We were told not to worry about the storage of nuclear waste because in a few years there would be a safe depository opened. It never happened.

We were told nuclear power would be so cheap you couldn't even meter it. Not true. Or that plutonium was so safe you could put it on your breakfast cereal. Yet no one at the NRC or elsewhere would try it. They were all misrepresentations or to say it another way all big lies. Don't make the closure of Diablo another big lie.

Nuclear power only produces less than ten percent of our power. Like water, energy consumption must be used for necessities now and not for convenience or entertainment. As a society we can conserve 10 percent of our energy use. And we must be encouraged to do so.

The $1.4 billion forgivable loan the Governor wants to throw at Diablo Canyon could be put to better use for incentives, solar generation on roof tops, or whatever else would be forward thinking for a safe reliable energy. The safe and promised decision to

close Diablo Canyon in 2024 should be (Zoom inaudible). Thank you.

MS. SHAH: Thank you. And the next speaker, please.

MR. ANDERS: Our next speaker is Heather Hoff followed by Paris Ortiz Wines and Louis Umpter.

MS. HOFF: Hi my name is Heather Hoff. I work at Diablo Canyon 18 years now. I live here in San Luis Obispo. I run a non profit called Mothers for Nuclear.

I appreciate everyone being here and being curious and asking questions. That's how I changed my mind about nuclear. It wasn't easy. It took about six years of relentless investigation.

What I don't appreciate is constant throwing up of barriers and issues without listening to the answers. Many of these issues raised tonight have already been solved or are not an issue in the first place. I'm not going to rehash all the concerns that have been raised other than to say I've had all of these same concerns myself, explored all the aspects and sometimes, surprisingly, found that things weren't what they seem.

Everything points to the need for more clean energy and the value that Diablo Canyon provides, not just for California, but for humanity and our planet. I suggest we refocus our discussion on what we care about

and then what we need in order to get there. I care about reliable electricity. People die in blackouts. Cal ISO says we need more electricity.

I care about clean energy. Diablo provides 15 percent of California's emission-free electricity. I care about climate change. All history shows that when existing nuclear plants close emissions go up. I care about transitioning away from natural gas, which is currently 15 percent of California's electricity. And I care about energy security. Right now 30 percent of our electricity is imported.

All of Europe is in a worse situation right now because Germany shut down their nuclear plants and is now suddenly trying to stop using Russian gas.

I care about safety. There is no such thing as safe, only different levels of risk. Continued operation of Diablo, even assuming the worst case in extremely unlikely scenarios, is still way less risky to human health and the environment than all our other options.

The choice is clear. We will always need more clean energy not less. Some of this pivot will be hard but I think we can do hard things. I have confidence in our team at Diablo Canyon and all of you to keep driving for things that we care about. We can have it all. We

can build a Cal Poly innovation park. We can do land back for YTT. We can invest in more clean energy. And we can keep running Diablo Canyon.

MS. SHAH: Thank you. Next up.

MR. ANDERS: Next up is Paris Ortiz Wines followed by Louis Umpter and Jill Samek.

MS. WINES: Hi. My name is Paris Ortiz Wines. I'm a Goleta local, second generation Mexican American, and a millennial. And my family members are being impacted by California's energy austerity policies.

In 2021 Californians saw their electricity prices increase by nearly 12 percent. Residents pay about 66 more for electricity than the rest of the country. And as of March this year 3.6 million residents struggled to pay their electricity bills totalling over $1 billion.

Our energy austerity policies are placing the burden on our most vulnerable population. Already we pay higher electricity prices during 4 to 9 during our peak demand because we do not have enough energy. The idea to use less energy is elitist.

If we are to close Diablo Canyon, our most reliable source of power we have, this will only worsen. In fact, CAISO stated in 2025 the cape (phonetic) will have a capacity shortfall of about 1800 megawatts. They have also projected annual electricity rate increases of

between 4 and 9 percent between now and 2025.

The data is clear. When nuclear plants close they are replaced with fossil fuels. When the San Onofre Nuclear Plant was shut down emissions in California increased by 37 million metric ton of CO2 equivalent. If Diablo Canyon is lost, 15.5 million metric tons of greenhouse gas emissions will be emitted between now and 2030.

To close Diablo Canyon would be an environmental and social injustice. Why aren't we concerned about all the natural gas plants that will still exist if Diablo Canyon is closed? Of the debates, hypotheticals and uncertainties these are operating now including the air and increasing emissions.

Why wouldn't we just continue to invest in our existing clean energy infrastructure? Diablo can and should be operating for 20 years and more. Decarbonization means zero carbon energy not 100 percent renewable energy.

Thank you for my time.

MS. SHAH: Thank you. Can we have the next speaker?

MR. ANDERS: Our next speaker is Louis Umpter, followed by Jill Samek and Harvey Wasserman. And please state your name and your residence and any affiliation.

Thank you.

MR. UMPTER: Good evening. Thank you, Chuck. I believe you can all hear me. I'm Louis Umpter. I live in San Francisco. And I emigrated into the U.S. from France which is 70 percent nuclear for its energy production.

I wanted to talk about a little bit risk versus exposition. And this one is for you, Mariam, and the people at the gym. So it's very important -- a lot of people are scared about nuclear. And I think it's very important to explain the difference between the risk and exposition.

Nuclear is very risky. If you like, you know, our near (unintelligible) like, you're going to get radiated and die pretty quickly. But the thing is we are not very exposed to that. All right? I trust people like Bob and the NRC to keep us safe from those dangers.

However, I am much more exposed to, like, car traffic when I am biking. All right? And that's in the end more risky for me. All right? So explain the difference in risk and exposition is super important. You're never exposed to radioactive materials. That doesn't happen. But the safety that we just saw it allowing we can learn from historical data.

I want to talk about the work of the GRC, which is

the European Union body for science research which is Europe commission. And the report from last year section 3.5 report of severe accidents. Nuclear is on par with hydro. So if you guys want to close nuclear plants because they are risky, you should also consider closing all hydro and damns that we have, because they are the same risk in the end. Right?

Also about safety and risk, I want to talk about the story of, like, Japan and Ukraine. Japan and Ukraine are the two countries with the biggest nuclear accidents, yet they are ones most committed to nuclear today. Japan just announced today that they were going to restart, like, almost 20 reactors next summer. And they are going to build new ones.

Ukraine is heavily invested in nuclear. They are, like, one of the biggest plants in Europe today. And it's safe even with the war. I'm still not scared by that. There's better fights to pick for climate change. The fight against nuclear is just, like, nonsense. Fight against, like -- fight for your transparency. Fight for better transparency with the police and so on. There's better fights. Thank you for your time.

MS. SHAH: Thank you. Do we have the next person?

MR. ANDERS: Our next speak is Jill Samik

followed by Harvey Wasserman and James Hettle.

Jill, please unmute your microphone.

MS. SAMEK: Okay. Can you hear me now?

MR. ANDERS: Yes, we can. Thank you.

MS. SAMEK: I'm Jill Samek. I'm a member of the Board of the San Luis Obispo Mothers for Peace and a downwind resident of Arroyo Grande.

I am adamantly opposed to extended operation of Diablo Canyon beyond 2025 for any length of time. It should have closed by natural consequences in 2019 when it became economically unviable.

I'm opposed to any further negotiations, subsidies, continued and increased safety risks and environmental waivers. There is a deal to close Diablo by 2025, for good reasons. And we must not violate it.

It was well thought out. And it has benefitted all parties; PG&E, cities, schools and workers. Any attempt to renege on it shows lack of integrity and foresight. We must not continue to burden rate payers and taxpayers with the tremendous cost of resurrecting this old dirty and dangerous plant. We must not go back to 1960s technology. We must not continue to generate even more toxic waste to be stored above multiple active earthquake faults. We must not expose the region to further risks.

Remember Three Mile Island. Remember Chernobyl. And remember Fukushima. People did die as a consequence of those accidents. We must close Diablo as planned. We must spend our time and money on implementing 21st century energy clean resources, efficiency and conservation. Thank you.

MS. SHAH: Thank you. The next person.

MR. ANDERS: Next speaker is Harvey Wasserman, James Hettle and Ryan Pickering. Please state your name, residence and any affiliation.

MR. WASSERMAN: Hi. My name is Harvey Wasserman. I'm a resident of Los Angeles. And I have children and grandchildren here.

That -- the Diablo Canyon reactors are not insured for the good reason. I want to see somebody who is advocating continued operation of Diablo Canyon step forward and tell me how you will compensate me and my family for the loss of our health and our livelihoods when and -- if and when -- and I think it's more when than if -- the San Andreas or one of the many other earthquake faults takes those reactors to the ground.

Diablo Canyon One is embrittled. We asked Gavin Newsom years ago to inspect it. In 2019 we presented him with a petition signed by 2500 people. And he has refused to inspect that reactor. And here we are

after -- there were two years of very important, very credible negotiations that went on to come to the conclusion that those reactors should shut. And now he's pushing forward in less than two months to force a decision.

The 1.4 billion should go to renewables. And there is no one advocating for the continued operation of these reactors that can come forward and tell me how they are going to be insured. After all of these years the nuclear power industry has been unable to get private insurance. And now you can't tell me, as a Los Angeles resident, what will happen to my children and grandchildren when those reactors blow up. So thank you very much.

MR. ANDERS: Mr. Wasserman, we are offering one minute to folks who live outside of the Central Coast area. Our timer is broken, but I think you time is up. Thank you.

MS. SHAH: Chuck, is everyone here on out a one-minute speaker? We'll reset the clock for the next person.

MR. ANDERS: Our next person is James Hettle, followed by Ryan Pickering and Julia Duval. The rest of our speakers will have one minute to speak.

MR. HETTLE: James Hettle. The natural resources

defense counsel and other signatories to the agreement 2016, which is a legal binding contract, wrote to the California Energy Commission. And they said this: Any attempt by the State of California to force a material deviation from the letters of the agreement would violate the constitution, thus attempting to extend Diablo Canyon's operation beyond this agreement is contrary to the express terms of the joint proposal would not e only be exceedingly bad state policy, it would be unlawful and unconstitutional. That's the bottom line. Thank you.

MS. SHAH: Thank you for those comments. Next person.

MR. ANDERS: Our next speaker is Ryan Pickering followed by Julia Duval and Guido Nunez Lucia.

MR. PICKERING: Hello. My name is Ryan Pickering from Berkeley, California. The purpose of my comment is to highlight a viable plan to extend operations at the plant while achieving broad community support and restorative justice.

Diablo Canyon is located on the Pecho Coast, the ancestral homelands of yak tityu tityu yak tilhini tribe known locally as YTT. On July 27th, Mona Tucker, the tribal chair of YTT sent a letter to the Governor's office. The letter expresses unanimous support from YTT

tribal council to demand the return the Diablo lands. This land was stolen from YTT without consent, agreement or compensation. The tribal resolution lays out a pathway towards restoring the land to the tribe for conservation.

The tribe has spoken publicly that they are willing to lease these lands to PG&E for continued operation of the plant. The tribe was not consulted in the 2018 joint proposal to close the plant, making it invalid.

In June 2021 the tribe registered to acquire Diablo lands through the CPUC's new tribal land transfer police.

MR. ANDERS: Your time is up, sir.

MR. PICKERING: I call on this panel to support extended operations of and partnership with YTT tribe. This ensures prosperity for California while --

MR. ANDERS: Sir --

MR. PICKERING: -- justice to our community --

MR. ANDERS: -- in fairness to all other speakers, your time is up.

MS. SHAH: Thank you. Let's have the next person.

MR. ANDERS: Next person is Julia Duval. Followed by Guido Nunez Lucia and Lindy Dowd.

Julia, go ahead, please. Julia, go ahead. Unmute your microphone. We're not hearing Julia. So let's go to the next speaker.

Guido Nunez Lucia, followed by Linda Dowd and J. Hondu Kim.

MR. LUCIA: Good evening, honorable members of the panel. Can you hear me?

MR. ANDERS: Yes, we can. Thank you. Go ahead.

MR. LUCIA: Good evening. My name is Guido Nunez Lucia. I'm a resident of San Francisco. I'm a data scientist. I'm an immigrant. And I've been working on environmental issues for the last 32 years.

I support continuing the impeccable safety record of the Diablo Canyon. It's a question why we are discussing -- even discussing closing the Diablo Canyon. Because if some people here say we have enough power to keep the lights on, why aren't we focusing on natural gas plants? Right now are poisoning the air, are causing asthma and respiratory illness all over the state. Let's not focus on hypotheticals. Leaving that aside --

MR. ANDERS: Thank you, sir.

MS. SHAH: Thank you. Next person.

MR. ANDERS: Next speaker is Linda Dowd followed by

J. Hondu Kim and Mary Beth Bragon.

MS. DOWD: Hi. I'm Lindy Dowd. And I am local so I hope I can have two minutes. I live in Los Osos. Seven miles as the crow flies from Diablo Canyon. I'm also the San Lucia Chapter of the Sierra Club co-lead for the Governor's visionary initiative to conserve 30 percent of California's bio diverse lands by 2030, called 30 by 30.

The 12,000 acre Diablo Canyon lands are a major conservation priority for the Central Coast's participation in 30-30, as is the establishments of the Chumash Heritage National Marine Sanctuary.

Extending the operation of this aging nuclear power plant would be a major setback in this 30 by 30 effort. And it is very disappointing that the Governor is promoting this. There are bound to be bumps in the road to reduce in California carbon footprint and transitioning to a more nature-based sustainable energy future. But I believe these bumps should be heading in the right direction, not going backwards.

With an incentive-base push for energy conservation by all of us and investing that $1.4 billion in renewable energy and storage, we can do it.

Investing in this aging plant is throwing good money after bad and increasing the risks we've lived

with for 40 years of environmental impacts, earthquakes, malfunctions, stored nuclear waste, terrorist attacks, and on and on. I strongly support keeping the shutdown of Diablo Canyon on schedule and not extending it a minute longer. Thank you.

MS. SHAH: Thank you. Next person.

MR. ANDERS: Next speaker is J. Hondu Kim followed by Mary Beth Bragon and Tim Smythe.

Please state your name, city and affiliation.

MR. KIM: My name is J. Hondu Kim. I'm a resident of Santa Clara County. I'm a member of All Mothers for Nuclear, although not a mother. And I have generally been a supporter of this.

In general, I hope within the public comment it's important we talk about accidents or risks or uncertainty. But the certainty is that we continue to put out an enormous amount of air pollution which has known effects. If there was any -- despite enormous effects -- for example, as Harry Wasserman spoke about LA, the people -- the people of LA especially -- or go, um -- have air pollution effects that constantly affect the health. It is a known disaster. 200,000 Americans die every year early of air pollution. And yet we do not assess these risks. We are putting a much higher scrutiny on this nuclear use, fossil fuel use.

MS. SHAH: Thank you, J. Thank you for those comments. Next up.

MR. ANDERS: Next up is Mary Beth Bragon followed by Tim Smythe and Ace Hoffman. Mary Beth.

MS. BRAGON: Okay. Can you hear me?

I'm (Zoom inaudible) ecological options network in Marin County.

MR. ANDERS: Sounds, like, you have a phone or two computers on the same system.

MS. BRAGON: Can you turn off your computer?

I'm heartbroken and outraged by this rush dumb democratic stampede to continue operating Diablo Canyon with all its monumental risks. Many alternatives exist if the true motivation is to continue to adequately supply necessary electricity.

The safety of Californians and the continued viability of our gorgeous environment should not be gambled with. Major nuclear disasters have occurred on average of one every 14 years or so. We are about due for another one. Don't let it be Diablo Canyon. Estimates by Ed Lymon of the Union of Concerned Scientists for Diablo Canyon is that it's one in 800. This is a desperate full court press to continue the nuclear industry. Thank you.

MS. SHAH: Thank you for those comments. Next

up.

MR. ANDERS: Next speaker is Tim Smythe followed by Ace Hoffman and Jean Marogan.

MR. SMYTHE: Hello. Tim Smith actually, Fremont, California. I just want to speak in support of keeping Diablo Canyon open. I also think it should be mentioned that with all this discussion about it being a very old plant, Diablo Canyon is actually one of the newest plants in the country. I believe unit two opened in 1987. And if you actually look at the statistics, the data book, there is only a handful of plants that opened after 1987, primarily in the 1988 to 1990 time period.

So Diablo Canyon, in fact, is one of the newest and most modern plants in the country. And I think if people are concerned about age of plants, they should be looking at plants outside of California, some of which are almost 15 and 16 years older than Diablo Canyon is.

So I thank you for your time. And I hope -- look forward to hearing the rest of the comments.

MS. SHAH: Thank you for your comments. Next up?

MR. ANDERS: Thank you. Our next speaker is Ace Hoffman followed by Jean Marogan and Raymond Fesser.

MR. HOFFMAN: My name is Ace Hoffman. I'm calling from Carlsbad, California. First, I'd like to challenge PG&E to ensure the plant, if they are going to

run it extra time.

Secondly, I've left some comments on your website. I've been wanting to go over some of the people I've talked to in the 50 years I have studied this thing.

John Hoffman was a researcher on the Manhattan project. Ernie Sternglass worked for NASA. Carl C. Morgan founded the health physics field. Marion Falk worked at Lawrence Livermore National Lab. Helen Caldecott, Archer Marker John, Arnie Gunderson, Judith Johnson, Rosa Leibert -- I've worked with all of these people. So I hope when you read what I've written you'll pay some good attention to it.

Thank you very much. And thank you for holding this hearing.

MS. SHAH: Thank you for those comments. Next up.

MR. ANDERS: Next up Jean Marogan, followed by Raymond Fesser and Alicia Hayes.

MS. MAROGAN: Hi. This is Jean Marogan. I'm calling in from Port Costa, California. I have a follow-up question for Dr. Budnitz, because there was a question posed to him that I didn't hear a response. And it's about the 2018 historical site assessment report for Diablo. I'm curious if the Independent Safety Commission has reviewed the document. And if you

are aware of missing documents and monitoring information that are noted in the report.

And also I'm curious -- I'd like to get your comment on what the safety implications are of delaying indefinitely clean up of known radiological contamination at Diablo Canyon. Thank you.

MS. SHAH: Thank you for those comments. Next up?

DR. BUDNITZ: Should I respond or do you want to wait --

MR. ANDERS: We're going to hold any responses until the end of all of the public comment?

DR. BUDNITZ: That's fine.

MR. ANDERS: Next up, Jean Marogan, followed by Raymond Fesser and Alicia Hayes.

MS. MAROGAN: I think I just spoke.

MR. ANDERS: I apologize. That was Jean Marogan. Raymond Fesser followed by Alicia Hayes and Nina -- I'm sorry, Babzets.

Raymond Fesser, please unmute. Raymond Fesser, please unmute your mic.

MR. FESSER: Am I unmuted?

MR. ANDERS: Yes, you are. Go ahead, sir.

MR. FESSER: Yeah. My name is Ray Feeser. I'm a 13-year resident of Avila Beach. And I feel I represent

most of the citizens of Avila Beach. We were shocked a few years ago when Diablo announced that they were shutting -- or PG&E announced they were shutting down Diablo Canyon. We -- for residents of Avila Beach we considered keeping the plant open a win, win, win.

First of all, right now we have a single road in and out. If Diablo Canyon shuts down the plant and opens up to development our traffic on our one road in and out will likely increase. We're already at a bumper to bumper traffic every weekend, so traffic is one thing.

A bigger thing is the tax revenue for Avila Beach and SLO County that funds a lot of our schools and will be a huge loss if they shut down.

And the third reason applies not only to Avila Beach, SLO County but the whole -- but California and the whole country, which is the fact that Diablo Canyon is up to nine percent of the state's electrical power -- clean electrical energy. And I'd like to point out that California is currently 50 percent carbon emitting natural gas and 50 percent clean energy.

And also a third of the clean energy is nuclear at eight and a half, plus hydro at seven and a half. If you shut down our nuclear and our hydro is at risk due to the climate change already, and the Colorado River

drying up. But the -- and it's already been pointed out that when Diablo Canyon -- when San Onofre shut down it added 37 million metric tons of carbon dioxide equivalent pollution to the State of California which accelerated global warming.

I'm a local resident. I would like to have three minutes -- two minutes.

MS. SHAH: We gave you the full --

MR. ANDERS: You've had two minutes for people online within the area.

MS. SHAH: Yeah. Thank you.

MR. ANDERS: Our next speaker is Alicia Hayes followed by Nina Babiar and Eva Burn.

MS. HAYES: Good evening. I'm a Ph.D. candidate studying nuclear fusion in San Diego. So I want to address Senator Laird's concerns about waste storage discussed at the very beginning of this meeting.

I spent 22 years living in Illinois about 15 minutes away from the now decommissioned Zion nuclear site. It only took about two years to construct from scratch and prepare the pad that now stores all of the Zion nuclear waste.

Meanwhile, spent fuel at Diablo Canyon must spend five years in the spent fuel pool to cool down. So unforeseen waste from extending the plant's life past

2025 would only need to be added as early as 2030. This would give Diablo Canyon about eight years to complete an estimated two-year project to extend its storage capacity.

So if we're serious about environmental and safety concerns during a climate crisis. If we're serious about public health during drought and blackout, then we will do everything we can to protect California's clean energy assets, especially Diablo Canyon.

MS. SHAH: Thank you.

MR. ANDERS: Our next speaker is Nina Babiar followed by Julia Duval and James Hopf.

MS. BABIAR: Can you hear me?

MR. ANDERS: Yes, we can, Nina. Go ahead, please.

MS. BABIAR: Actually, it's Nina. Last name is Babiar. I'm down here in San Diego. I'm founding member of Public Watch Dogs. And, of course, we've been dogging the issue at San Onofre for over a decade now.

If you don't think the radiation leak can occur, that's what exactly shut the plant down at San Onofre for a few of your listeners that don't seem to realize that.

I'm originally from Pittsburgh. And I came in 1984. I moved to California. But in 1979 I was an

engineering news reporter from McGraw Hill during Three Mile Island, so don't tell me that this can't happen. I'll put some printed comments.

But I just want to bring up a couple of things that weren't discussed. Nowhere this evening did I hear the word tsunami in any of the seismic probability discussions, which I think is pretty ludicrous. And there is no conversation about evacuation or insurance or emergency response.

MR. ANDERS: Nina, your time is up. Your time is up. Thank you.

Next speaker is Julia Duval followed by James Hopf. Julia.

MS. DUVAL: Hi. Can you hear me?

MR. ANDERS: Yes, we can. Thank you.

MS. DUVAL: Great. Sorry about before. Given the extensive safety and seismic studies that I really appreciate everyone's time on, I'm feeling confident that Diablo is safe and reliable.

We've had more deaths due to natural gas explosions and solar panel installations than we've had from nuclear plants in the United States. Instead of replacing nuclear we should be replacing fossil fuels. By keeping Diablo Canyon online isn't getting in the way of building any more renewables in storage. But taking

it offline will mean a disastrous hit to our economy, cost of living, quality of life, blackouts and obviously carbon emissions.

If Gavin Newsome could solve California's projected electricity shortages with renewables, he certainly would. It's much more popular. But there is no viable path right now for California to replace Diablo Canyon's electricity, which counts for 9 percent of the state's generation and is carbon free. Thank you.

MS. SHAH: Thank you for those comments.

MR. ANDERS: Next up is James Hopf, followed by Eva Burns.

MR. HOPF: Hi. Can you hear me?

MR. ANDERS: Yes, we can.

MR. HOPF: Yes?

MR. ANDERS: Yes.

MR. HOPF: My name is James Hopf. I'm a required nuclear engineer who lives in Tracy, California. You know, it's hard to believe that California's planning on shutting down its largest (Zoom inaudible) in 2025 electricity shortage (Zoom inaudible). And also it's hard to believe that (Zoom inaudible) shutting down its largest carbon free power generator during the climate crisis.

There was mention of an alternative policy to simply take money for Diablo and give it to renewables and that will solve the problem. But as Cal ISO said in a recent hearing no that's not the problem. Money is not the problem. Even if procurement of renewables and storage goes perfectly there will be 1800 megawatt shortfall. The single act of keeping Diablo Canyon open would cover that shortfall. We can't get enough renewable energy no how much money we throw at it.

MR. ANDERS: Thank you, sir. Your time is up. Our last speaker is Eva Burns.

MS. BURNS: Hi. I live in San Francisco. And I work as an (Zoom inaudible) policy analyst. I'm turning 30 next week. And I'm thinking about having kids. But I worry a lot about the world that they are going to grow up in with unprecedented heat waves, droughts, wild fires.

And just be clear, I support wind, I support solar, anything to decarbonize. But we need to decarbonize now. And we can't make it any harder for ourselves than it already is.

I'm not going to talk about the technical details. You already heard the facts from Dr. Budnitz and Dr. Gibson. We heard about numerous safety and feasibility analyses that have been done, not just by the NRC but

also by independent unbiased groups.

And after all that -- for those of who you are still living in this fantasy world where you think that closing a plant is anything but a huge step backwards, I envy your blissful ignorance. Yes, it's going to take hard work and it's going to take money, but we have to keep Diablo Canyon running for the earth and for our children. Thank you.

MS. SHAH: Thank you for those comments. I believe that was our last commenter.

MR. ANDERS: That's correct.

MS. SHAH: Okay. I was taking down questions as we went. I think -- I know Dr. Budnitz is on the line, which I really appreciate you sticking with us. I know he's ready to jump in on the one question addressed to him.

The only other question I've memorialized was Eric Greening's question about the hearing tomorrow which it sounds like we were back and forth as to even what time it was. So I don't know. Do we know the answer?

MS. WOODRUFF: I probably don't know all the answers but I wanted to clarify. From everything I'm hearing there will be no voting at this hearing. And it's an oversight meeting only. And I do believe it will start anywhere between 11:30 to 12:30 tomorrow.

MS. SHAH: All right. Thank you. If we want to hear from Dr. Budnitz briefly --

DR. BUDNITZ: This can be short. One of the (Zoom inaudible). I'm getting feedback. I hope it's not difficult.

There were two questions. One had to do with contamination of the site. And Tom Jones spoke to that earlier. The contamination of the site is not -- from activities there is not a huge problem. It's not a major piece of the cost of the decontamination. And doing it five or ten years later, it doesn't seem to be adding a huge extra increment to the cost.

I'm not an expert on that. Maybe Tom Jones or somebody else from the plant could chime in. But it doesn't seem like that's a big problem to put it off.

The second question had to do with 2018 report. I thought I had replied to that before. Yes, we reviewed it. And -- if that's what you were asking. And we're looking forward to an update that we would review sometime soon, if the plant is going to be continuing it. And then we would review that. I hope that answers the question.

MS. SHAH: Thank you. Yeah. I appreciate you sticking with us. Those were all the questions that I memorialized. I don't know if staff wanted to respond

to anything they heard or -- okay.

All right. Well, then, I really appreciate all the callers. And we're an engagement panel, so thank you for engaging.

So yeah. Let's go on to just the next item which is introduction of future meeting dates and topics.

MR. ANDERS: Thank you, Mariam. Very quickly, couple of dates coming up. The engagement panel has set aside September 21st this year, about a month from now, to -- as a potential date to continue a discussion and dialogue regarding the issue of extension of Diablo Canyon's operation.

So that meeting and the details of that meeting will dependent on what happens tomorrow and going forward.

One other meeting I want to emphasize again and -- the Diablo Canyon Independent Safety Committee with Dr. Budnitz and his comrades will be meeting on September 28th and September 29th in Avila Beach. That meeting will also be broadcast online. So, again, an opportunity to participate in that process and address some of the safety concerns that you heard here tonight.

DR. BUDNITZ: Chuck, our meeting is going to be the 28th, including an evening session. And on the 29th it's going to end at noon.

MR. ANDERS: So the 28th is beginning in the morning and ending through the evening. And the following day, the 29th, it's the morning session ending at noon.

With that, any panelist have any final comments before we adjourn? I want to thank you the panel -- oh, Bruce, sorry.

MR. SEVERANCE: Yeah. I took notes on every public comment. And it just seemed like a number of public comments were addressing discrepancies in operating costs related issues. And many people saying that nuclear is affordable and clean. And I wanted to respond to that.

And that is, when you look at any system you have to look at full life cycle costs, both in terms of environmental impact and venalities as well as economic costs. And something a lot of people forget is that uranium mining is having significant social justice impact in the southwest right now. It has made a lot of people sick. And you should read the articles about that if you are going to make the claim that nuclear power is clean. So it is not as clean as other sources of energy. And look at the full life cycle.

And the second thing is that from PG&E's own CPUC filing, my understanding is -- and this came from the

Fairwinds report that was posted to the CPUC docket in 2016 that, basically, Diablo Canyon absorbs 40 percent of PG&E's operating costs and it produces 22 percent of its capacity. So comparison of those two numbers alone tells you that it's consuming a significant amount of it's off green cost. It's not as cost effective as other sources of energy.

And I do believe there are better ways to decarbonize than looking at continued operation of this plant, especially given the fact that we're looking at a shortfall for a narrow window of time between 2025 and 2030, after which this might be excessive power on the grid. But we will have already invested a billion dollars and would need to amortize that cost over a 20-year period.

And so I see no scenario for a five-year commitment. In my mind if PG&E would please disclose actual numbers it's going to end up being a 20-year amortization schedule. That's the problem. There is a mismatch here in the duty cycle that is really being discussed. So I think that the economics are critical. That people need to really evaluate those things.

And I think that responds to a whole lot of the public comments that came in. I took acidulous notes. I welcome people to contact me through the portal. And

I'd be happy to continue that conversation. Thank you.

MR. ANDERS: Thank you, Bruce.

We're not going to continue a dialogue here, in fairness to all the other participants so on.

So with that comment, I see no other hands raised, I want to thank everyone for participating in the meeting, all of the people who support this meeting that are here, and behind the scenes. And wish everyone well and thank you for participating in this very important meeting on a critical topic. The meeting is adjourned.

(Whereupon the proceedings were adjourned for the day at 9:41 PM.)

STATE OF CALIFORNIA)
)ss
COUNTY OF FRESNO)

I, KRISTI GARCIA, a Certified Shorthand Reporter of the State of California having offices located at Fresno, California, do hereby certify;

THAT said hearing was reported in shorthand by me at the time and place above stated and thereafter transcribed under my direction and control.

I FURTHER CERTIFY that I am not interested in the outcome of said action, nor connected with, nor related to any of the parties in said action nor to their respective counsel.

DATED: 6th of September, 2022

KRISTI GARCIA, C.S.R. No. 9111

G