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NUCLEAR REGULATORY COMMISSION

Title: Petition to Suspend Decommissioning
Operations at the San Onofre
Nuclear Generating Station

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PETITION REVIEW BOARD

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RE: PETITION TO SUSPEND DECOMMISSIONING OPERATIONS
AT THE SAN ONOFRE NUCLEAR GENERATING STATION DUE TO
OPERATION OF THE INDEPENDENT SPENT FUEL STORAGE
INSTALLATION IN AN UNANALYZED CONDITION.

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PETITIONER: PUBLIC WATCHDOGS

+ + + + +

WEDNESDAY

JUNE 24, 2020

+ + + + +

The meeting convened via teleconference
at 3:00 p.m. EDT, Kevin Williams, Petition Review
Board Chair, presiding.

PETITION REVIEW BOARD (PRB) MEMBERS PRESENT

KEVIN WILLIAMS, Office of Nuclear Material

Safety and Safeguards; Chair

STEPHANIE ANDERSON, Region IV

PERRY BUCKBERG, Office of Nuclear Reactor

Regulation

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1 ROBERT CARPENTER, Office of the General Counsel

2 MARLAYNA DOELL, Office of Nuclear Material

3 Safety and Safeguards

4 DARRELL DUNN, Office of Nuclear Material Safety

5 and Safeguards

6 LATIF HAMDAN, Office of Nuclear Material Safety

7 and Safeguards

8 NATREON JORDAN, Office of Nuclear Reactor

9 Regulation

10 JON WOODFIELD, Office of Nuclear Material Safety

11 and Safeguards

12 NRC STAFF PRESENT

13 CHRIS BAJWA, Office of Nuclear Material Safety

14 and Safeguards

15 WILLIAM ALLEN, Office of Nuclear Material Safety

16 and Safeguards

17 ANDREW AVERBACH, Office of the General Counsel

18 ANDREW BARTO, Office of Nuclear Material Safety

19 and Safeguards

20 YEN-JU CHEN, Office of Nuclear Material Safety

21 and Safeguards

22 YOIRA DIAZ-SANABRIA, Office of Nuclear Material

23 Safety and Safeguards

24 SUE GARCIA, Office of Nuclear Material Safety

25 and Safeguards

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1 CHRISTIAN JACOBS, Office of Nuclear Material
2 Safety and Safeguards

3 ANDREA KOCK, Office of Nuclear Material Safety
4 and Safeguards

5 JOHN McKIRGAN, Office of Nuclear Material Safety
6 and Safeguards

7 CHRISTOPHER REGAN, Office of Nuclear Material
8 Safety and Safeguards

9 AMY SNYDER, Office of Nuclear Material Safety
10 and Safeguards

11 JOHN WISE, Office of Nuclear Material Safety
12 and Safeguards

13

14 ALSO PRESENT

15 NINA BABIARZ, Public Watchdogs

16 FATON BACAJ, Sempra Energy

17 ALBERT BATES, Southern California Edison

18 DOUG BAUDER, Southern California Edison

19 VINCE BILOVSKY, Southern California Edison

20 PAUL BLANCH, Public Watchdogs

21 DEREK BRICE, Southern California Edison

22 DONNA GILMORE, San Onofre Safety

23 RANDALL GRANAAS, Southern California Edison

24 CARLYN GREENE, UxC

25 GARY JENKINS

1 C.D. LADD
2 CHARLES LANGLEY, Public Watchdogs
3 SERGE LaRONDELLE
4 MARK MORGAN, Southern California Edison
5 JERRY STEPHENSON, Southern California Edison
6 ALLEN TRIAL
7 KALENE WALKER

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

3:13 p.m.

MR. BAJWA: I apologize for the delay and the technical issues. Again, just to mute your phones on the system you can do star 6, or you can use an alternative method if your phone has a specific mute capability.

We are on tap here. I have multiple windows going at once. If I sound at any point in time distracted, I apologize for that. It's because I'm monitoring a couple of different things at once so I'm having to multi-task here.

Anyway, my name is Chris Bajwa. I'm a senior mechanical engineer in the Division of Fuel Management here at NRC. I would like to welcome you and thank all of you for attending this meeting.

The purpose of today's meeting is to provide petitioner in this case, Public Watchdogs, an opportunity to address the NRC Petition Review Board for the petition that was submitted on February 5th of 2020 regarding the petition to suspend all the decommissioning activities at SONG to an unanalyzed condition related to flooding at the SONG ISFSI.

I already introduced myself. The chairman for the Petition Review Board is Kevin Williams.

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1 Kevin is the Deputy Director in the Division of
2 Material Safety, Security, State, and Tribal Programs
3 in the Office of Nuclear Material Safety and
4 Safeguards.

5 This is a Category 1 meeting so the public
6 is invited to observe the meeting. Obviously we're
7 doing this remotely and observe is used in this case
8 by phone and Skype. We'll have an opportunity to
9 communicate with me after the business portion but
10 before the meeting is adjourned.

11 As part of the Petition Review Board's
12 review of this petition, Public Watchdogs has
13 specifically requested this opportunity to address the
14 PRB.

15 We were scheduled to start at 3:00.
16 Obviously we're starting a little late because we had
17 some technical difficulties. After these introductory
18 remarks we will give Public Watchdogs the agreed-to
19 amount of time to address the Board followed by a
20 brief question and answer phase.

21 A couple of housekeeping items. This
22 meeting is being recorded by the NRC Ops Center and it
23 will be transcribed by the court reporter. I would
24 like to give an opportunity for the court reporter to
25 let us know that they're on and that they have what

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1 they need to record the transcription for the meeting.

2 Because the transcription will be taken
3 and it will be made publicly available, I would like
4 to emphasize that anyone who speaks on the line needs
5 to speak clearly and loudly and slowly if possible to
6 make sure that the court reporter can accurately
7 transcribe the meeting. If you have anything that you
8 would like to say, please also first state your name
9 for the record. If you have an organization that
10 you're with, that would also be helpful.

11 I think I mentioned this, that if you need
12 to mute your phone through the system and you do not
13 have a mute button, you can use the key star followed
14 by 6. Then in order to unmute your phone, which you
15 don't want to forget to do if you'd like to speak, you
16 do star and 6 again.

17 I would like to do some introductions over
18 the phone. We have a number of participants, over 30
19 currently, logged into the meeting. I think what I'd
20 like to do is have the members of the Petition Review
21 Board introduce themselves giving your name and your
22 position. Then, after that, NRC participants. Then
23 next we will have the people from the petitioners,
24 Public Watchdogs introduce themselves.

25 Finally, we have a number of members of

1 the public who are also on this call. It is not
2 required for members of the public to introduce
3 themselves. However, if they are on the phone and
4 they wish to do so, they can do that.

5 First we'll start with the PRB members.
6 I would ask those members to quickly unmute themselves
7 and introduce themselves.

8 (Music playing.)

9 MR. BAJWA: Okay. It appears to be gone.
10 All right. Let's stay muted and I will go ahead and
11 go to the list that I have of the PRB members.

12 Stephanie Anderson from NRC. I have Perry
13 Buckberg, also NRC. Rob Carpenter, Marlayna Doell.
14 I have Darrell Dunn. I have Latif Hamdan. I have
15 Nate Jordan. I have Kevin Williams who is our PRB
16 Chair, as I mentioned. And I have Jon Woodfield. If
17 I missed anyone from the PRB, could you please unmute
18 yourself and introduce yourself.

19 Hearing no one, I would like to --
20 Charles, if you could introduce yourself and anyone
21 who is representing Public Watchdogs.

22 MR. LANGLEY: Yes, this is Charles
23 Langley. I'm the Executive Director of Public
24 Watchdogs. I'm here today to present with our subject
25 matter expert and engineer Paul Blanch.

1 MR. BAJWA: Okay. Thank you, Charles.

2 Are there any other members of the public
3 who would like to introduce themselves? If you could
4 unmute yourselves one at a time and introduce
5 yourself.

6 MS. GILMORE: Donna Gilmore, San Onofre
7 Safety.

8 MS. GREENE: Carlyn Greene, UxC.

9 MR. BAJWA: Okay. Thank you for that.

10 The agenda for today's meeting after this
11 introduction we'll have --

12 MR. BATES: Excuse me.

13 MR. BAJWA: Yes.

14 MR. BATES: Chris, hi. This is Al Bates.
15 I'm with Southern California Edison. I'm the
16 regulatory manager of San Onofre, the licensee. With
17 me today I have Mark Morgan who is the Senior Nuclear
18 Regulatory Affairs engineer, as well as Derek Brice
19 who is our Chief Legal Counsel for SONGS
20 decommissioning. Thank you.

21 MR. BAJWA: Okay. Thank you. I think I
22 left off with Perry.

23 Perry, did you introduce yourself or did
24 I mention you before?

25 MR. BUCKBERG: You did mention me before.

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1 Thanks, Chris.

2 MR. BAJWA: Okay. Didn't want to leave
3 you out.

4 All right. So any other introductions
5 before we move on? Okay. Hearing none, as I
6 mentioned, the agenda for today's meeting is to
7 provide the petitioner an opportunity to provide any
8 information to the PRB for the PRB to consider in its
9 review of the petition that's been submitted.

10 It was agreed that an hour would be
11 provided to the petitioner for this presentation.
12 After that presentation, we'll enter a brief question
13 and answer phase where either the licensee may ask the
14 PRB questions related to the issues raised in the
15 petition and/or the petitioner and the licensee may
16 ask the PRB questions related to the 2.206 petition
17 process in general.

18 At this time I would like to turn it over
19 to the PRB Chair Kevin Williams for some opening
20 remarks.

21 CHAIR WILLIAMS: Okay. I just want to
22 verify that you can hear me.

23 MR. BAJWA: Loud and clear.

24 CHAIR WILLIAMS: Okay, good. Thank you.

25 So welcome to this meeting regarding the

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1 2.206 petition submitted by Public Watchdogs. I would
2 like to first share some background on our process.
3 Section 2.206 of Title 10 of the Code of Federal
4 Regulations describes the petition process.

5 The primary mechanism for the public to
6 request enforcement action by the NRC in a public
7 process. This process permits anyone to petition NRC
8 to take enforcement type action related to NRC
9 licensee or licensed activity.

10 Depending on the results of its
11 evaluation, NRC could modify, suspend, or revoke any
12 NRC issued license or take any other appropriate
13 enforcement action. The NRC staff guidance for the
14 disposition of 2.206 petition request is Management
15 Directive 8.11 which is publicly available.

16 The purpose of today's meeting is to give
17 Public Watchdogs an opportunity to provide any
18 relevant additional explanation and support for the
19 petition after having received the PRB's initial
20 assessment.

21 This meeting is not a hearing, nor is it
22 an opportunity for Public Watchdogs or other members
23 of the public to question or examine the PRB on the
24 merits or the issues presented in the petition
25 request. No decisions regarding the merits of this

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1 petition will be made at this meeting.

2 Following the meeting the PRB will conduct
3 its internal deliberation. The outcome of this
4 internal meeting will be provided to Public Watchdogs
5 in a letter. The PRB typically consist of a chairman,
6 usually a manager at the senior executive service
7 level at the NRC.

8 It has a petition manager and a PRB
9 coordinator. Other members of the Board are
10 determined by the NRC staff based on the content of
11 the information in the petition request.

12 The members have already introduced
13 themselves. As described in our process, the NRC
14 staff may ask clarifying questions in order to better
15 understand Public Watchdogs' presentation and to reach
16 a reasonable decision on whether or not to accept
17 Public Watchdogs' request for review under the 2.206
18 process.

19 I would like to summarize the scope of the
20 petition under consideration and the NRC activities to
21 date. On February 5, 2020 Public Watchdogs submitted
22 a petition to the NRC under 2.206 regarding concerns
23 about decommission activities at SONGS.

24 The petition requested that the NRC order
25 Southern California Edison to (1) immediately halt

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1 decommissioning activities at SONGS, (2) report to the
2 NRC that SONGS ISFSI is operating in an unanalyzed
3 condition, take immediate action to preclude flooding
4 of the SONGS ISFSI, and (3) suspend all fuel transfer
5 actions from the spent fuel pools to the ISFSI at
6 SONGS, among other requests.

7 On April 20, 2020 the petition manager
8 contacted Public Watchdogs to inform them of the PRB's
9 initial assessment that the petition does not meet
10 management directive 8.11, Section 3.c.1 criteria for
11 petition evaluation because NRC staff had continued to
12 carefully regulate the licensee's decommissioning
13 activities at SONGS including through its review of
14 the fuel storage facility design inspection
15 encompassing the physical facility as well as the
16 licensee's operation performance and appropriate
17 enforcement action.

18 The primary safety concerns stated in the
19 petition was the unanalyzed risk and imminent threat
20 or the effects of inundation of the SONGS ISFSI with
21 floodwater or burial by debris that would result in
22 rupture of multiple casks due to thermal shock with
23 results of leaving the public at large vulnerable to
24 a radioactive release and permanent dislocation from
25 their residences and livelihood.

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1 The effects of the inundation of the SONGS
2 ISFSI floodwater or burial by debris, and specifically
3 the impact of such conditions on the spent fuel
4 canisters, have been evaluated and addressed in the
5 final safety analysis report for Holtec HI-STORM UMAX
6 dry cask storage system. That is found at ADAMS ML
7 No. 18192B094.

8 The NRC staff reviewed the SR for the UMAX
9 system and found that the system meets all applicable
10 NRC regulations. The petition manager offered Public
11 Watchdogs the opportunity to address the PRB to
12 clarify or supplement the petition in response to this
13 assessment and Public Watchdogs requested to address
14 the PRB in this form.

15 As a reminder for all participants, please
16 identify yourself if you make any remarks as this will
17 help us in the preparation of the meeting transcript
18 that will be made publicly available. Thank you.

19 Public Watchdogs, I will now turn over the
20 meeting to you to provide additional information for
21 PRB consideration as part of the petition. At this
22 moment we've allotted 60 minutes for your
23 presentation.

24 MR. LANGLEY: Thank you, Mr. Williams, and
25 Chris Bajwa. This is Charles Langley of Public

1 Watchdogs.

2 Mr. Bajwa, are you able to -- it looks
3 like you're loading our presentation right now. While
4 that's going, I would like to talk about something
5 that I think is kind of pertinent and germane to what
6 we're going to be talking about today.

7 That is that yesterday a 7.4 Richter scale
8 earthquake shook the west coast of Mexico in a town
9 called Oaxaca. The earthquake triggered a tsunami
10 alert for the pacific coastline for Central America.

11 Now, tsunamis which could easily slug the
12 independent spent fuel installation, or ISFSI at San
13 Onofre, are caused by blind thrust earthquake faults.
14 SONGS is located fewer than two miles away from
15 something called the Oceanside blind thrust. This
16 earthquake fault has been extensively documented by
17 more than 30 peer-reviewed geological studies.

18 A few years ago Southern California Edison
19 commissioned a \$12 million study to "prove" that there
20 is no blind thrust fault system off the coast of San
21 Onofre and that it would be impossible for an
22 earthquake to exceed the structural limits of the
23 SONGS ISFSI.

24 Yesterday's tsunami merits special
25 attention because at 7.4 on the Richter scale it could

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1 have easily caused serious damage to the SONGS ISFSI
2 if it had occurred off the coast of California.

3 Now to get back to the presentation. I'll
4 just introduce myself. Again, I'm Charles Langley.
5 In terms of my background, I have 24 years of
6 experience as a public advocate regulating California
7 IOUs, or industrial-owned utilities. I got my start
8 in this field in 1996 as a public advocate for UCAN,
9 the Utility Consumers Action Network.

10 Then in 2016 I founded Public Watchdogs,
11 a 501(c)(3) public benefit charity to protect
12 electricity ratepayers from the California Public
13 Utilities Commission and to represent Californians
14 before a regulatory body such as the Nuclear
15 Regulatory Commission.

16 Next slide, please. What we are here to
17 talk about today is what we believe is an unanalyzed
18 flood condition. The San Onofre Nuclear Generating
19 Station, SONGS, has a history of flooding. Today we
20 intend to prove that this history represents an
21 unanalyzed or under-analyzed condition that must be
22 addressed by the NRC immediately.

23 Next slide, please. Severe floods from
24 rain. The site has a history of flooding.

25 Previous slide, please. According to the

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1 NRC Event Report dated January 22, 2010 even the high
2 ground on the Mesa has been subject to severe flooding
3 according to the Event Report No. 45634. According to
4 this report, on January 18, 2010 the access road to
5 the SONGS Mesa facility was flooded by rain blocking
6 the vehicle access to the San Onofre Emergency
7 Operations Facility.

8 According to the report, in the event of
9 an emergency of San Onofre, Southern California Edison
10 would have had to direct emergency responders to
11 travel to the alternate Emergency Operations Facility
12 located 30 miles away in Irvine.

13 Two days later on January 20th the access
14 road to the SONGS Mesa was again flooded. Again, San
15 Onofre Emergency Operations was inaccessible to
16 vehicles and emergency responders who were directed to
17 travel the 30 miles to Irvine.

18 Next slide, please. This is a tsunami
19 inundation map. It shows Northern -- excuse me,
20 Southern Orange County and Northern San Diego County.
21 That line down the middle of the map is the border
22 between the two counties.

23 Go to the next slide, please. San Onofre
24 is located near that border. That little notch in
25 there is a close-up of where San Onofre is located.

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1 This is the tsunami inundation map from the California
2 Geological Information Services.

3 It shows that this little notch in here,
4 this divot, is where the San Onofre Nuclear Generating
5 Station ISFSI is located including the domes and all
6 the outbuildings. Most of the facility is located
7 within this tsunami inundation zone meaning, of
8 course, that if there was a tsunami, this facility and
9 the ISFSI, the spent nuclear fuel dump, would be
10 inundated.

11 Next slide, please. One thing I'd like to
12 talk about is the vocabulary that's been used in some
13 of Edison's rebuttals to concerns that we've expressed
14 about SONGS.

15 Next slide, please. In its rebuttal,
16 Edison encountered public concerns by stating, "The
17 outside shell of the warmest spent fuel storage
18 canister on site is approximately 225 degrees
19 Fahrenheit, not an average of 452 degree Fahrenheit."

20 We looked everywhere to find what was
21 being defined as the outside shell and nowhere in any
22 of the Holtec documents relevant to the MPC-37, which
23 is the brand of canister used at Holtec, is there a
24 reference to an outside shell.

25 Next slide, please. Okay. So what we're

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1 looking at is a cutaway of a Holtec multi-purpose
2 canister and this isn't the canister at San Onofre.
3 It's MPC-100, I believe, inside a concrete overpass.
4 It's the only reference, if you look at this red
5 circle, where we can find reference to an outer shell,
6 an outside shell.

7 We, therefore, advise the NRC to carefully
8 examine any claims that Edison is making regarding the
9 temperature of various components of the MPC-37
10 because it appears that between Holtec and Edison the
11 definition of the different parts and components of
12 these vertical ventilation modules, canisters, fault
13 systems, whatever you want to call them, are kind of
14 slippery and flexible.

15 We would just like to state that when they
16 specify what a temperature is, you need to be very
17 specific in determining what part of the system
18 they're talking about because right now we're not very
19 clear on that.

20 Next slide, please. We would also like to
21 point out what we believe is a faulty assumption. In
22 its public response Southern California Edison said,
23 "The water would enter the inlets of the vertical
24 ventilated module lids and flow down the annular
25 region between the cavity enclosure container and the

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1 divider shell."

2 In other words, they're saying the
3 canister inside the silo that holds them would be
4 filled up with water. Now, what's interesting is that
5 Edison has actually argued that flooding things with
6 water will actually improve the cooling capacity of
7 the canisters. Let me say that again.

8 Edison has argued that flooding the
9 canisters will actually improve the cooling capacity
10 of the canisters. This is what they say. It would be
11 more akin to heating a pot of water for spaghetti.
12 Plus, the temperature of the canister's surface would
13 begin cooling immediately since water is a better
14 conductor of heat than air.

15 We respectfully submit that this is a
16 false assumption. The reason is that tsunamis rarely
17 consist of pure sparkling ocean water. A more likely
18 scenario is tons of semi-liquid mud, rock, and
19 biological debris completely blocking the convection
20 cooling function of the canisters.

21 In fact, it's entirely likely that ISFSI
22 could be covered under many, many feet of mud and
23 rock. In fact, as Mr. Blanch will explain later,
24 convection cooling could also be hampered by other
25 factors.

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1 Next slide, please. Now, this is my last
2 slide. I would just like to observe that the NRC has
3 a history of ignoring flood risks at nuclear reactors.

4 I know this is a new Nuclear Regulatory
5 Commission but I would just like to observe that in
6 2012 an NRC employee named Richard Perkins with NRC's
7 Division of Risk Analysis wrote to the Office of
8 Inspector General that the NRC was intentionally
9 classifying, in other words keeping secret, flooding
10 analyses at US nuclear reactor sites by claiming that
11 these analyses were "sensitive security information in
12 an effort to conceal the information from the public."

13 In the case of SONGS, similar flood
14 information is being withheld on the grounds that
15 disclosure threatens the intellectual property of
16 Holtec International, the vendor of the system used at
17 SONGS. Now, when public safety is at stake, the
18 public's right to know the facts must not be
19 subordinated to the protection of corporate process.

20 One hundred and six years ago Supreme
21 Court Justice Louis Brandeis wrote that the people
22 have a right to know how the people's business is
23 being conducted. Sunlight, he said, is the best
24 disinfectant and electric light the most efficient
25 policeman.

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1 For years San Onofre has provided us with
2 reliable electric light but now the people have a
3 right to know how the public's money, more than \$4
4 billion of it, is being spent on nuclear cleanup.

5 I thank the Petition Review Board for
6 listening to my arguments today and I now turn you
7 over to our engineer Paul Blanch for the remainder of
8 this presentation. Thank you.

9 MR. BLANCH: Okay. This is Paul Blanch.
10 I want to thank you, Charles and thank you, Chris. I
11 just want to clarify one thing that Charles said to
12 make sure we're all on the same page. That is that I
13 don't disagree with Edison.

14 If the VVM is totally covered with water
15 there will be proper heat removal as long as there's
16 no obstruction and it's totally covered and remains
17 covered up to 125 feet of water, I don't have a
18 problem as far as cooling goes, but that won't occur.

19 Again, I want to thank members of the
20 Petition Review Board for listening to me. I have
21 additional information, new information, that I've
22 come upon that I deem to be very, very significant.
23 I'm on slide 1 which is just the title slide. Now I'd
24 like to go to slide 2.

25 We've all -- all the NRC PRB members have

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1 introduced themselves and I have two questions. It
2 was mentioned at the beginning that there is a member
3 from the Senior Executive Service. Could you please
4 identify who that member is?

5 MR. WILLIAMS: Kevin Williams.

6 MR. BLANCH: Kevin Williams is SES?

7 MR. WILLIAMS: Yes.

8 MR. BLANCH: Okay. Do we have any
9 professional engineers from the NRC?

10 MR. BAJWA: Yes. This is Chris Bajwa. I
11 am a professional engineer registered in the state of
12 Maryland.

13 MR. BLANCH: Okay. How about reactor
14 operator authorization licensed power operator. Okay.
15 All right. My professional background is I am a
16 professional engineer. I am an authorized reactor
17 power operator from the United States Navy. I have a
18 degree in electrical engineering. I've worked in the
19 nuclear industry for well over 50 years on regulatory
20 and safety issues. I think I'm well respected by most
21 of the people within the NRC.

22 All of my following slides are in
23 accordance with Management Directive 8.11. I'm
24 following the guidance there. Just to confirm that
25 we're all on common ground, again on slide 2 I mention

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1 the documents that I'm using as a reference which is
2 UMAX Revision 5 and NUREG 1536 which is the standard
3 review plan.

4 I'm also referencing now, it might not be
5 on your slide, 10 CFR 72.128(a)(4) and (5). What this
6 says is you must demonstrate that you have a heat
7 removal capability, have testability and reliability
8 consistent with its importance to safety.

9 Certainly cooling heat removal of 100 to
10 150,000 BTUs per hour is important to safety. If we
11 lose that capability, we will have major problems.

12 Next slide, please. Okay. If we get
13 flooding through whatever means, and whether it's
14 permanent or long-term flooding or short-term flooding
15 we have a disaster on our hands. When water enters
16 above the vents at San Onofre, each of the 72 vertical
17 ventilator modules that store the nuclear waste will
18 be flooded to above the outlet vents.

19 Once this flooding occurs, there is no
20 known means discussed in the final safety analysis
21 report, NRC documents, or Holtec documents to recover
22 from this event and restore cooling. Once the flood
23 waters recede below the inlet vents, we have lost all
24 cooling on all VVM modules.

25 Next slide, please. This is a reiteration

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1 of what was in the original .206 that flooding is a
2 design basis event. This is supported by the Standard
3 Review Plan 5(e), 10 CFR 72. Then I want to say that
4 if flooding occurs, damage to the vertical ventilator
5 modules may be unrecoverable in the short term and
6 possibly in the long term.

7 I show a picture of the area. This is a
8 photograph supplied by Edison which shows the area
9 that will be flooded in the event of a tsunami and a
10 tropical storm. There might be possibly other events.

11 Next slide, please. Now there is new
12 information that I have. Flooding, of course, is a
13 design basis event. That's just repetition of what I
14 said before. Water from the tsunami or storm will be
15 above inlet and outlet vents.

16 Once the water recedes from the event,
17 most water will flash to steam and be expelled. This
18 phenomena may be repetitive with waves and surges. We
19 don't know how long that last and how frequently it
20 occurs. However, once the water recedes, subcooled
21 water will remain in the VVM blocking all cooling.
22 I'll get into a little more detail as to why I believe
23 that is the case.

24 When the water remains in the bottom of
25 the VVM, all passive cooling flow will terminate in

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1 every one of the units, or a common mode failure. The
2 MPC structural integrity has not been analyzed due to
3 rapid cooling, rapid heat-up.

4 Next slide, please. I'm on slide 6. The
5 fuel and the VVM temperatures and pressures are not
6 analyzed beyond 32 hours from the reference document.
7 It's assumed in the document at 32 hours somehow it
8 magically ends.

9 The recovery from this event, the flooding
10 event, is briefly discussed and includes removal of
11 the MPC, multi-purpose canister, from the VVM and to
12 remove obstructions by washing and vacuuming if
13 required. Again, this has to be done 72 or 73 times.

14 The other thing that's not discussed in
15 any of the reference documents are the radiation
16 levels that exist around these modules when they are
17 removed when they're cleaning them, so on and so
18 forth.

19 Next slide, please. Flooding
20 considerations from NUREG 1536, which is what the NRC
21 is supposed to use when they are reviewing the
22 applicant's final safety analysis report, says -- and
23 we can all read it together -- the SAR should
24 establish a design basis flood condition. I think we
25 already have it. It's somewhere above the outlet

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1 vents.

2 If the SAR establishes parameters for
3 design-basis flood, all of the potential flood water
4 byproducts should be recognized. What they mean there
5 is debris and salt and water and so on and so forth.

6 Serious flood consequences can involve
7 things such as blockage of the vent ports by water and
8 silting the air passages. Other potentially effects
9 include scouring below the foundations and severe
10 temperature gradients resulting from rapid cooling
11 from immersion.

12 Next slide, please. So we go the FSAR and
13 we look for the analysis of what happens with the
14 flood. I took a picture of the page. I forget
15 exactly what page it is but it's from the applicable
16 FSAR. It says Section 4.6.2.5 Flood.

17 It says proprietary information withheld
18 in accordance with 10 CFR 2.390. We added text has
19 been redacted, for some reason by, NRC Holtec. This
20 is what Charles referred to is you cannot hide
21 information that impacts the public from view by the
22 public.

23 If there is something that is truly
24 proprietary, we can arrange for handling of that. If
25 it needs redaction, we can handle that. We need a

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1 complete flood analysis.

2 Next slide, please. This is from Oregon
3 State. It says if not controlled, the extremely rapid
4 cool-down rates to which the hot MPC and internal MPO
5 cladding could be subjected to during reflooding and
6 the MPC cavity could result in uncontrolled thermal
7 stresses and failure of structural limbers. Again,
8 another issue that needs to be addressed.

9 Next slide, please. Now, this is a Holtec
10 slide and I can't identify exactly where it came from
11 except that I know it's a Holtec slide and it looks
12 reasonably accurate projecting an axial temperature of
13 the Holtec multi-purpose canister.

14 If we follow the red line, we can see that
15 it goes up almost 370 degrees centigrade up four
16 meters from the bottom of the canister. The
17 interesting part is if we look at the temperatures
18 down one meter and below for the red line, or for any
19 of the lines, we can see that the temperature is in
20 the vicinity -- this is the wall temperature of the
21 Holtec -- it's a low temperature.

22 It's somewhere around 100 to 150 degrees
23 F, 50 degrees C. We can see that sub-cooled water
24 could exist up until it reaches 212 degrees which
25 might be over a meter from the bottom of the VVM.

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1 This is important as far as blockage of flow.

2 Next slide, please. This is -- I've
3 annotated the data from the FSAR that shows a typical
4 cast installation maximum temperature after 32 hours
5 of flow blockage. I got these numbers from the
6 following slide which is slide 12. Going back to
7 this, it shows some pretty significant temperatures
8 here. Fuel cladding of 964 degrees, fuel basket 936
9 degrees.

10 Those are beyond the limits but, again, I
11 want everyone to remember this is only after 32 hours.
12 This could persist most likely for more than 32 days
13 or 32 weeks. We don't know the consequences. The
14 water has not been demonstrated to be able to be
15 removed. It could be tested but, for some reason, it
16 hasn't been tested.

17 Next slide which is slide 12. The
18 temperatures I annotated on a previous slide were
19 taken from this Table 4.6.7.

20 Next slide. The maximum temperatures
21 reached after 32 hours of complete blockage. Again,
22 this is a direct quote. "Short-term operations
23 including, but are not limited, to the MPC drying and
24 onsite transport. The 1,058 degrees F temperature
25 limit applies to MPCs containing all moderate burn-up

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1 fuel."

2 This last sentence is important and maybe
3 Donna -- not now but Donna might take an interest in
4 this. "The limit for MPCs containing one or more high
5 burn-up fuel assemblies is 752 degrees F." We've
6 already seen the 32 hours of blockage that brings it
7 up to 964 degrees F. We've got another problem that
8 the temperatures with a flood will certainly exceed
9 the design temperatures for a high burn-up fuel.

10 Summary, issues, conclusions, and
11 questions. These are pretty much statements.
12 Flooding of the ISFSI has not been analyzed, at least
13 an analysis that we have seen as a member of the
14 public. Flood analysis, if existing, has been
15 withheld on that redacted page.

16 Flooding above the vents will halt all
17 cooling for all VVMs. This is a serious problem.
18 This is a problem I recently recognized. Steam
19 initially when the tsunami or flood recedes will be
20 produced and will be expelled as steam until the water
21 reaches the saturated conditions for whatever
22 temperature the MPC is at. Sub-cool sea water will
23 block all cooling with no possible recovery. Flow
24 blockage has only been analyzed for 32 hours.

25 Next slide. Structural impact of multiple

1 rapid temperature changes has not been analyzed.
2 Impact of residual salts and other contaminants and
3 flood byproducts non-analyzed. Common mode failure
4 has not been considered or discussed. Radiological
5 impact has not been address.

6 NUREG 1536 says all of the potential
7 effects of flood water and ravine flood byproducts
8 could be recognized. Not done. There are no
9 emergency plans that I've seen which are discussed in
10 the FSAR for the recovery of the 72 or 73 flooded
11 vertical modules.

12 In conclusion, I want to thank the
13 Petition Review Board for listening to me and my
14 perspective pertaining to this major safety issue and
15 request the NRC bring the AFSE into regulatory
16 compliance. That means the capability to withstand
17 and recovery from a blood which is a design-basis
18 event. Again, I want to thank you for listening to
19 me.

20 I'm turning it back to you, Chris.

21 CHAIR WILLIAMS: Public Watchdogs, thank
22 you for taking the time to provide the NRC staff
23 clarifying information on the petition you submitted.
24 As stated at the opening, we will now enter the
25 question and answer phase of the meeting. At this

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1 time does the PRB have any questions for the
2 petitioner?

3 Hearing none, if present, does the
4 licensee have any questions for the PRB related to the
5 issues raised in the petition?

6 MR. BATES: This is Al Bates, Southern
7 California Edison. We do not have any questions.

8 CHAIR WILLIAMS: Thank you, Al.

9 Does the petitioner or licensee have any
10 questions about the 2.206 petition process?

11 MR. BLANCH: Speaking for the petitioner
12 this is Paul. I would like to know why the flood
13 analysis has been redacted and withheld.

14 CHAIR WILLIAMS: Well, that's a question
15 that's outside of the scope of this process. The
16 question that we're having is do you have any
17 questions about the 2.206 petition process.

18 MR. BLANCH: I don't. Charles, do you?

19 MR. LANGLEY: This is Charles Langley.
20 thank you for going through this process, Mr.
21 Williams. I'm wondering if you can tell me what
22 happens next and what is the expected time frame for
23 a response from the NRC?

24 MR. WILLIAMS: So what happens next is
25 we'll review the additional information that you

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1 provided. We will also review the transcript from
2 this recorded meeting. We, being the PRB, will re-
3 engage and discuss the additional information and make
4 a determination of whether there's any new information
5 that would warrant a change to our current assessment
6 in terms of where the PRB initial assessment came out.

7 If there is a change, we will address that
8 in our wrap-up. If there is not a change, then we
9 will convey to Public Watchdogs the outcome of the
10 petition.

11 MR. BLANCH: This is Paul Blanch. I would
12 like to make one comment. I think most of you have
13 seen the recent Inspector General's report. I think
14 it was 16-024. I believe one of the findings was to
15 encourage more of a dialogue between the petitioners
16 and the PRB. I would like to reinforce this.

17 I've been through a number of 2.206
18 petitions and it always seems a monologue and very
19 rarely a dialogue where we can openly share
20 information and questions between us. I encourage the
21 PRB to establish a formal dialogue with themselves and
22 Public Watchdogs and myself to assure that we're all
23 looking at the same problem.

24 CHAIR WILLIAMS: That is duly noted.
25 Appreciate your comment.

1 Any other questions about the 2.206
2 petition process from Public Watchdogs?

3 MS. BABIARZ: Yes. this is Nina Babiarz.
4 I do have a question.

5 CHAIR WILLIAMS: Okay.

6 MS. BABIARZ: Considering that we don't
7 know what is in the report that's been suppressed and
8 withheld from the public, and considering the fact
9 that the seismic and tsunami activity has continued up
10 to yesterday, would part of this process be that the
11 NRC in addition to responding to the 2.206 would
12 consider updating that flooding report to a current
13 status. Thank you.

14 CHAIR WILLIAMS: Chris or Rob, did you
15 want to address that at all? Rob Carpenter, are you
16 on?

17 MR. CARPENTER: Kevin, this is Rob. I'm
18 sorry, I'm here. I was having trouble getting my
19 phone off of mute. So let me ask for you to repeat
20 the last part of that question once again just so I
21 make sure I understand.

22 MS. BABIARZ: Yes. Considering that we do
23 not know the contents of the report that has been
24 suppressed from the public's review, and in addition
25 to the response to Public Watchdogs 2.206, would part

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1 of that consideration be the NRC hopefully updating
2 considering that the seismic and tsunami activity as
3 recent as yesterday, would you consider updating the
4 report and, as part of updating that report, release
5 it to the public?

6 MR. CARPENTER: I'll address that in two
7 ways. The first is that the seismic and tsunami
8 activity you're referring to is what Mr. Langley was
9 talking about in Mexico?

10 MS. BABIARZ: The constant threat on the
11 west coast including the tsunami inundation zone smack
12 in the middle of the San Onofre site.

13 MR. CARPENTER: Okay. It sounds to me
14 like the question is generally given the possibility
15 of seismic and tsunami activity would we update the
16 analysis.

17 MS. BABIARZ: The probability. The
18 probability. Since we live with it on a 24/7 basis
19 out here the probability.

20 MR. CARPENTER: Okay. So the answer to
21 that question is not -- that is not something that
22 would be part of the 2.206 process. The 2.206 process
23 --

24 MS. BABIARZ: No, my question was in
25 addition to the 2.206 response to Public Watchdogs,

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1 and considering that we don't know what was in the
2 report in the first place that's been suppressed, but
3 knowing from this presentation that there is a
4 constant and upgraded seismic and tsunami threat that,
5 of course, either or both would result in flooding,
6 would the NRC consider updating that flooding report
7 to a current status of the current seismic activity
8 threatening this site and then release that updated
9 report to the public?

10 MR. CARPENTER: So I'm of the opinion that
11 question is not about the 2.206 process at all
12 actually.

13 MS. BABIARZ: Well, I guess my question is
14 actually related to the 2.206. From this exercise of
15 2.206 does the NRC consider upgrading the information
16 to a current status to reflect the threat?

17 CHAIR WILLIAMS: This is Kevin. I think
18 -- I allowed this to go forth because what I really
19 wanted to do was get to the crux of your question. I
20 think what we need to try to do is package this more
21 in terms of Public Watchdogs providing additional
22 information in that regard.

23 I believe that was the intent of
24 mentioning it in the beginning. As we go back and
25 look at the transcript and look at the additional

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1 information that was provided, it's something that
2 we'll consider as we're considering the petition.

3 MR. BLANCH: This is Paul Blanch. I have
4 another comment. We know the regulation requires the
5 ability to cool the fuel after a flood. It also
6 requires demonstration and testability and reliability
7 consistent with its importance to safety.

8 As an engineer, this is very testable.
9 One could test an actual module to see if cooling is,
10 in fact, blocked. If Cal, Holtec, or whomever, NRC,
11 can conduct an actual test replicating the impact of
12 the flood and demonstrate that cooling is still
13 adequate, then they should do that. If not, we're all
14 guessing.

15 It's very easy to flood one of those VVM
16 canisters to see what's going to happen. The NRC says
17 nothing is going to happen so there's no danger of
18 damage. I think the NRC, the licensee, and Holtec
19 should consider an actual test to see whether flooding
20 will block cooling as I content. Thank you.

21 CHAIR WILLIAMS: Thank you. If there are
22 any members of the public before I conclude the
23 meeting, do you have any comments regarding the 2.206
24 petition process?

25 Before we close, does the court reporter

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1 need any additional information for the meeting
2 transcript? You're good? Thank you.

3 We want to encourage the participants
4 outside the NRC to provide public meeting feedback to
5 the staff via the NRC public meeting website. With
6 that, this meeting is concluded and we will be
7 terminating the phone connection. Thank you for your
8 time and thank you for providing additional
9 information.

10 (Whereupon, the above-entitled matter went
11 off the record at 4:17 p.m.)

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