

To: Members of the SONGS Community Engagement Panel (CEP)
From: David G. Victor, Chairman
Date: 5 December 2017
Subject: Comments at 2 November CEP meeting about Research on Seismic Activity in Southern California

Many unusual things were said at our most recent CEP meeting, but one stuck out as particularly troublesome. A member of the public, Mr. Robert Pope, claimed during the public comment period that research led by Professor Neal Driscoll at the Scripps Institution of Oceanography “intentionally avoided” studying the Cristianitos fault while doing work funded by Southern California Edison for the purpose of understanding the seismic risks at the SONGS site (and by extension, all of our communities here in southern California). Professor Driscoll, you will recall, joined our CEP meeting on 16 February and presented that research—the most extensive seismic study of the region ever done, with all the main results published in the leading peer-reviewed scientific journals. Since then, he has spent countless hours with Mr. Pope, other members of the public and NGOs sharing data and explaining the geological science behind the research. He is also presenting his results at several town council meetings in the area.

Mr. Pope, who has been described as a geologist, has repeatedly and erroneously implied that the real risks in the region are much larger than in the published scientific literature yet offered no robust evidence to support those claims. In this latest accusation, he appears to believe that the Cristianitos fault is a lurking danger that somehow established scientists are willfully ignoring while he knows the true dangers. This accusation is tantamount to scientific fraud—a claim that professional scientists are ignoring evidence with the goal of distorting the findings. As a scientist myself I take these accusations seriously, and I have investigated this extensively and find zero evidence that any of the claims that Mr Pope is making have any merit.

After repeated efforts to get Mr. Pope to clarify his accusations of fraud, finally last week I received a sprawling and unresponsive letter forwarded from his lawyer, Charles Langley. The letter does not actually address the accusations Mr. Pope has been making of late, and it continues to muddy the waters and mis-characterize serious scientific research. The letter, attached to this memo, claims we are “defending the suppression of scientific inquiry” and seeks to “test drive Dr. Driscoll’s computer model.”

As far as I can tell, there are two issues in play.

First is the question of the Cristianitos fault. This fault is widely known by experts, and Prof. Driscoll’s research has NOT ignored it—quite the opposite. The issue is whether the fault is active. Here are some facts:

1. The paper co-authored by Dr. Neal Driscoll of the Scripps Institution of Oceanography and published in *Marine Geology* – attached and available on the [SONGS website](#) – includes multiple references the Cristianitos Fault. PDF page 2 of 11 states the “minimum age of the last rupture has been placed at 125 ka” (meaning 125,000 years);

2. A reference to the Cristianitos Fault on PDF page 9 states “evidence suggests that there has been no slip younger than 125 ky (Shlemon, 1992) implying the fault is inactive.”
3. In California, movement within the last 10,000 years is the threshold for an active fault. The Cristianitos fault has been inactive far longer than 10,000 years.
4. Because the Cristianitos Fault is inactive, it is not part of the Third Uniform California Earthquake Rupture Forecast ([UCERF3](#)), and is not classified as active by the California Geological Survey.

Second, Mr. Pope and Mr. Langley are seeking access to the data and the computer models behind Dr. Driscoll’s research. All of that information is openly published—there is nothing to seek, as the information is readily found. The algorithms are published in the peer-reviewed scientific literature. The data—the largest three-dimensional seismic record ever compiled in the scientific literature, totally about 10 terabytes of data—are published on widely known repositories for scientific data precisely so that this information, funded with public dollars, is available to the public. In advance of the CEP meetings last spring we in the CEP worked with Dr. Driscoll to make sure all of this information was public—and following the scientific tradition, as soon as the key papers were accepted through peer review for publication all the information was released.

Mr. Pope and Mr. Langley have, repeatedly, been provided links to those data and copies to the papers along with massive, extensive additional background information. Astonishingly, they continue to make false claims about secrecy and a fresh accusation that “the science is being censored by a corporate entity.” Even more astonishing is their claim that I am complicit in this effort to muzzle the true voice of science. It is possible that this is rooted in a misunderstanding about how modern geological sciences operate. There is no single “model” that sits ready for a test drive like a Ford Pinto parked at the roadside. The studies that Dr. Driscoll presented are based on a series of statistical studies as well as “first principles” models of geological behavior. Those studies and models—a whole suite, not one Ford Pinto—are then tested and calibrated with the terabytes of data collected and published openly. Strangely, Mr. Langley and Mr. Pope have demanded that Prof. Driscoll provide the names of the anonymous reviewers that evaluated all this work for the world’s leading scientific journals—by definition, those names are not known to Prof. Driscoll because the best peer review is done anonymously to help reduce bias and raise the quality of published research. It is precisely because of that rigorous review process that we in the CEP did not have Prof. Driscoll’s briefing until AFTER his work was peer reviewed and released. That is how science works.

We in the CEP have an obligation to listen to all views and help deliver on our mission of opening a two-way conduit between Edison and the communities affected by decommissioning of the plant. At the same time, people who make accusations shrouded in science have an obligation to look at the facts and the analysis and help us understand why they may disagree. This kind of grandstanding does not serve the public interest and obscures reality with pseudo-facts and fake news.

Sorry to burden your inboxes with such a long memo, but these malicious and wrong-headed accusations have been brewing for some time, and I thought you would want to know the facts.



November 27, 2017

David G. Victor
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Dear David,

This letter is my response to your emails of November 8th and November 23rd.

I believe my public statement at the last CEP was brief and clear. I believe my sole question, still unanswered, was also brief and clear.

I wonder, "why is it that you publicly interpreted my statements as an accusation of scientific and corporate fraud, rather than allowing the guest speaker to simply answer my sole question?" I am making simple scientific queries that have not been answered. What's more, Southern California Edison appears to be preventing Dr. Driscoll from answering these questions about the science, by replying on his behalf (Most recently, with Manuel Camargo cancelling our second meeting and cancelling the test-drive of the seismic model that were both offered and promised by Dr. Driscoll on May 12, 2017). It begs the question "Are answers to simple questions posed to Dr. Driscoll being muzzled by his corporate sponsors?"

This situation is especially ironic, given that you have been a vocal supporter of public scientific debate. In a recent [November 1, 2017 Union Tribune story](#),¹ you defended a study you co-authored that is the subject of a libel suit by Stanford Professor Mark Jacobson.

"It is unfortunate that Mark Jacobson has decided to pursue this legally as opposed to openly, in the scientific tradition," you said.

In this study, you critiqued the math behind a predictive model developed by Dr. Jacobson.

Our concerns about Dr. Driscoll's study are similar. We want to critique the math on the predictive model that he employed. The only realistic way to do this is to adjust the data inputs (i.e the constraints on the data) that were used in the model, by *using and testing the model*. Dr. Driscoll repeatedly assured me, on the record, that he would allow me to

¹ See Stanford Professor sues critics of his 100% renewables article, *San Diego Union Tribune*, November 1, 2017 at <https://goo.gl/eL3j58>

do this. Yet now, almost a year later, Southern California Edison is refusing to let Dr. Driscoll honor the scientific tradition.

We assert that this study, which was paid for by \$12 million in public money, is not the intellectual property of Edison nor Scripps. It is public property, and Dr. Driscoll must honor his promise of allowing Public Watchdogs to evaluate the computer model in situ, and to modify the input values as he agreed to do. The fact that an executive at SCE is preventing this review of his publicly funded science suggests that the science is being censored by a corporate entity.

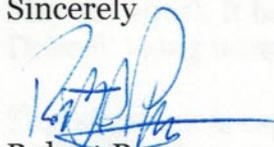
This suspicion is compounded by the use of "anonymous" peer reviewers for Dr. Driscoll's peer-reviewed study.

I further note that Dr. Driscoll has not responded to the Public Watchdogs' PRA request dated February 15, 2017, requesting the identities and correspondence of the "anonymous" peer reviewers, along with communications Dr. Driscoll has had with his corporate sponsors at Edison.

In other words, I am simply asking that you and Scripps honor the "scientific tradition" by allowing Public Watchdogs to test drive Dr. Driscoll's computer model.

I hope this provides you with the clarity you seek. Please let me know if you intend to continue defending the suppression of scientific inquiry, or if you will join us in evaluating the constraints on the data that were used by Dr. Driscoll.

Sincerely



Robert Pope
Geologist and Board Member
Public Watchdogs

In the study, you criticized the math behind a predictive model developed by Dr. Driscoll.

The questions about Dr. Driscoll's study are similar. We want to critique the math or the predictive model that he employed. The only realistic way to do this is to adjust the data inputs (the constraints on the data) that were used in the model, by using and testing the model. Dr. Driscoll reportedly assured me, on the record, that he would allow me to

Public Law 88-82

AN ACT

July 30, 1963
[S. 546]

To authorize the Secretary of the Navy to grant easements for the use of lands in the Camp Joseph H. Pendleton Naval Reservation, California, for a nuclear electric generating station.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Navy be and he hereby is authorized and empowered to grant to Southern California Edison Company, a California corporation, and to San Diego Gas and Electric Company, a California corporation, and to each of them, their respective successors and assigns, upon such terms and conditions as the Secretary deems necessary to protect the interests of the United States, an easement in, over, under and upon lands of the United States of America, approximately ninety acres in area, within the Camp Joseph H. Pendleton Naval Reservation, California, for the construction, operation, maintenance, and use of a nuclear electric generating station, consisting of one or more generating units, and appurtenances thereto; and easements in, under, over, and upon such additional lands of the United States of America within the Camp Joseph H. Pendleton Naval Reservation, California, as are necessary or desirable for the purpose of constructing, operating, maintaining, and using electric transmission and communication lines, switchyards and substations, cooling water conduits, pipelines for water, gas and sewage, railroad spur tracks, access roads and other appurtenances to said facilities and to said nuclear electric generating station.

California.
Camp Pendleton,
land easement.

SEC. 2. Upon such terms and conditions as he deems necessary to protect the interests of the United States and within the scope set forth in Section 1, the Secretary or his successors in interest, may amend any such easement by mutual agreement of the parties thereto, or their successors in interest, in such manner as to change the lands affected thereby, either by substitution, addition or deletion, as well as to change the terms and conditions of the grant.

Conditions.

SEC. 3. A reasonable charge, which may be paid in installments or in a lump sum or in a combination thereof, as determined by the Secretary, or his successor in interest, based upon the fair value of each easement granted pursuant to the authority herein contained, shall be payable by the grantee or grantees thereof, their respective successors and assigns.

Charges.

Approved July 30, 1963.

Public Law 88-83

AN ACT

August 5, 1963
[H. R. 3272]

To provide for the free entry of an orthicon image assembly for the use of the Medical College of Georgia, Augusta, Georgia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) the Secretary of the Treasury is authorized and directed to admit free of duty one orthicon image assembly imported for the use of the Medical College of Georgia, Augusta, Georgia.

Orthicon image
assembly.
Free entry.

(b) If the liquidation of the entry of the article described in subsection (a) has become final, such entry shall be reliquidated and the appropriate refund of duty shall be made.

Approved August 5, 1963.

Settlement Agreement Implementation

Status Report

December 22, 2017



SOUTHERN CALIFORNIA
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Submitted in accordance with the August 2017 Settlement Agreement resolving the case *Citizens Oversight, Inc. v. California Coastal Commission*, San Diego Superior Court Case No. 37-2015-00037137-CU-WM-CTL

SCE’s Settlement Agreement Implementation Status Report #2 - December 22, 2017

I. Introduction

On August 25, 2017, Citizens Oversight, Inc. and Patricia Borchmann (together, “Plaintiffs”) and Southern California Edison (“SCE”) entered into the Settlement Agreement Regarding Coastal Development Permit for Storage of San Onofre Spent Nuclear Fuel (“Settlement Agreement”) to resolve Plaintiffs’ lawsuit regarding a 2015 coastal development permit authorizing the construction of an Independent Spent Fuel Storage Installation (“ISFSI”) at the San Onofre Nuclear Generating Station (“SONGS”). The San Diego Superior Court entered its Order dismissing the case on August 28, 2017 (the “Effective Date”).

As set forth in the Settlement Agreement, pending development of a permanent U.S. Department of Energy repository for the Spent Fuel, SCE will use Commercially Reasonable efforts to relocate the Spent Fuel to an Offsite Storage Facility. To keep the Plaintiffs and other stakeholders apprised of SCE’s progress in fulfilling certain settlement commitments, the Settlement Agreement requires SCE to generate this report at prescribed intervals until the commitments are satisfied. Section II.B.6 of the Settlement Agreement states that

On or before the expiration of ninety (90) calendar days after the Effective Date of this Agreement and monthly thereafter, SCE shall provide Plaintiffs with a report regarding its progress in fulfilling the commitments under Sections II.B.2-5 of the Agreement. Beginning with the sixth monthly progress report and continuing quarterly thereafter until SCE’s completion of its commitments under Sections II.B.2-5 of this Agreement, SCE shall provide the Plaintiffs with a report regarding its progress in fulfilling each of the commitments under Sections II.B.2-5 of the Agreement.

Based on this requirement, the settlement implementation progress reports have been or will be issued on or about the following dates, or before them, if the date occurs on a weekend or holiday:

Update	Report Due	Date Issued
1.	November 26, 2017	November 22, 2017
2.	December 26, 2017	December 22, 2017
3.	January 26, 2018	
4.	February 26, 2018	
5.	March 26, 2018	
6.	April 26, 2018	
7.	July 1, 2018	
9.	October 1, 2018	
10.	January 1, 2019	
11.	April 1, 2019	
12.	July 1, 2019	
13.	October 1, 2019	
14.	January 1, 2020	
Calendar shown through Q4 2019. Additional quarterly reports may be necessary.		

SCE issued its first report on November 22, 2017. Updates to the November 22, 2017 report are shown in italics below.

II. Current Progress on Meeting Settlement Agreement Commitments

SCE's progress to date regarding its commitments made in Settlement Agreement Sections II.B.2-5 is described below:

a. Section II.B.2 - Develop Transportation and Strategic Plans for Relocating SONGS Spent Fuel to an Offsite Storage Facility

Requirement

Section II.B.2 of the Settlement Agreement states:

To assess the feasibility of relocating SONGS Spent Fuel to an Offsite Storage Facility, SCE shall: (1) develop a conceptual plan for the transportation of the SONGS Spent Fuel to an Offsite Storage Facility assumed to be located in the southwestern region of the United States ("Transportation Plan"), and (2) develop a strategic plan for supporting the development of a Commercially Reasonable Offsite Storage Facility ("Strategic Plan") (together, the "Plans"). Within thirty (30) calendar days of the Experts Team's formation, SCE will solicit the input of the Experts Team as to the appropriate scope for the Plans, including potential locations for an Offsite Storage Facility, and a schedule for completion of the Plans.

Progress to date

i. Retention of Expert Panel

Pursuant to Section II.B.1, SCE has taken steps to retain a team of expert consultants (the "Experts Team") to advise SCE on issues related to the proposed relocation of SONGS spent nuclear fuel to an Offsite Storage Facility. As set forth in Section II.B.1 of the Settlement Agreement, the Experts Team will include at least one expert from each of the following fields: (1) nuclear engineering (or equivalent), (2) spent fuel siting and licensing, (3) spent fuel transportation, and (4) radiation detection and monitoring. Section II.B.1.b of the Settlement Agreement requires that:

Within ninety (90) calendar days after receiving the written proposals, SCE shall retain the consultants that will serve on the Experts Team. Within seven (7) calendar days of completing the retention of consultants who will serve on the Experts Team, SCE will inform Plaintiffs' attorneys in writing of the identity and expertise of the consultants.

Consistent with this Section, SCE intends to complete the engagement of the Experts Team on or before March 8, 2018.

SCE circulated its requests for proposal ("RFP") for the Experts Team on or about October 26, 2017 (within sixty (60) days after the Effective Date of the Settlement Agreement, as required by Section II.B.1.a). The list of potential Experts Team candidates to receive the RFP was provided to Plaintiffs' attorneys and to David Victor, Chairman of the San Onofre Community Engagement Panel, for their review and comment prior to circulation.

Written proposals in response to the RFP were due December 8, 2017. SCE received written proposals for over thirty expert candidates, representing each of the four expert fields required by Section II.B.1. SCE is currently evaluating the written proposals.

ii. Transportation Plan

Section II.B.2 of the Settlement Agreement requires that:

Within thirty (30) calendar days of the Experts Team’s formation, SCE will solicit the input of the Experts Team as to the appropriate scope for the Plans, including potential locations for an Offsite Storage Facility, and a schedule for completion of the [Transportation Plan].

Updates will be provided as progress is made on the Transportation Plan.

iii. Strategic Plan

Section II.B.2 of the Settlement Agreement requires that:

Within thirty (30) calendar days of the Experts Team’s formation, SCE will solicit the input of the Experts Team as to the appropriate scope for the Plans, including potential locations for an Offsite Storage Facility, and a schedule for completion of the [Strategic Plan].

Updates will be provided as progress is made on the Strategic Plan.

b. Section II.B.3 - Request that Palo Verde Store SONGS Spent Fuel

Requirement

Section II.B.3 of the Settlement Agreement states:

Within ninety (90) calendar days after the Effective Date of this Agreement, SCE will formally make a written request to solicit an agreement from the owners of Palo Verde regarding the development of an expanded ISFSI that would store SONGS Spent Fuel at the Palo Verde site. If SCE’s request for such consideration is accepted, SCE will engage in discussions with the owners of Palo Verde to evaluate the feasibility of licensing, constructing, and operating such an expanded facility on Commercially Reasonable terms. SCE shall not be obligated to enter into any binding agreement with the owners of Palo Verde concerning the storage of SONGS Spent Fuel that is not Commercially Reasonable. SCE will provide Plaintiffs’ attorneys information regarding the progress of discussions with Palo Verde.

Progress to date

On or about October 10, 2017, SCE submitted a letter formally requesting that the owners of the Palo Verde Nuclear Generating Station (“Palo Verde”) consider a solicitation by SCE for an agreement to expand Palo Verde’s ISFSI to store spent nuclear fuel from SONGS.

The Palo Verde Administrative Committee is responsible for strategy and planning decisions for Palo Verde, and its membership consists of executive representatives appointed by each of the owner companies.

On October 20, 2017, SCE's Chief Nuclear Officer, Tom Palmisano, attended the Palo Verde Administrative Committee meeting and presented SCE's case for relocating SONGS spent nuclear fuel to an expanded ISFSI at Palo Verde.

Under the Palo Verde Participation Agreement, unanimous consent by all owners is required for approving strategy and planning decisions. After Mr. Palmisano's presentation, there was an engaged discussion about the possibility of an expanded ISFSI wherein Mr. Palmisano answered various questions from the meeting participants.

SCE proposed a resolution calling for the approval of further, more detailed discussions between SCE and the other Palo Verde owners to evaluate the feasibility of licensing, constructing, and operating such an expanded facility on commercially reasonable terms. A vote was called. SCE recommended the approval of the resolution and voted to approve the resolution.

The remaining Administrative Committee members voted anonymously on SCE's proposed resolution. The votes were then tallied and SCE's resolution, which required unanimous support for passage under the applicable co-ownership agreement, was not approved.

On November 20, 2017, SCE circulated a copy of the Palo Verde Administrative Committee's decision rejecting SCE's proposal to the attention of Plaintiffs' attorneys.

c. Section II.B.4 - Develop Inspection and Maintenance Program by October 2020

Requirement

Section II.B.4 of the Settlement Agreement states:

SCE will develop the Inspection and Maintenance Program for the Project ISFSI required as Special Condition 7 under the 2015 CDP by October 6, 2020 rather than the October 6, 2022 date provided for under Special Condition 7.

Progress to date

Planning is underway to develop the Inspection and Maintenance Program.

d. Section II.B.5 - Develop Plan for Damaged or Cracked Canisters

Requirement

Section II.B.5 of the Settlement Agreement states:

SCE will develop a written plan addressing contingencies for damaged or cracked canisters consistent with NRC regulations and requirements by October 6, 2020.

Progress to date

Planning is underway to develop the plan addressing contingencies for damaged or cracked canisters.

e. Section II.B.7 - Provide Plaintiffs with Periodic Progress Reports

While not one of the commitments listed in Section II.B.2 through II.B.5, here SCE notes its progress regarding the development of progress reporting on the storage of SONGS spent fuel at the San Onofre site.

Requirement

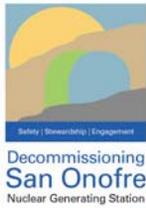
Section II.B.7 of the Settlement Agreement states:

Starting on January 1, 2018 and continuing until all fuel in “wet” storage pools in Units 2 and 3 has been transferred to the Project ISFSI, SCE shall provide Plaintiffs with a monthly progress report on the storage of SONGS Spent Fuel at SONGS. This report will be based on nonconfidential information regarding the number of spent fuel assemblies moved from the spent fuel pools to the Project ISFSI.

Progress to date

SCE intends to circulate these SONGS spent fuel progress reports on or before the first of each month, beginning on or about January 1, 2018. While the spent fuel storage progress report will be a “stand-alone” report, issued separately from this Settlement Agreement Implementation Status Report, SCE intends to provide an update regarding the issuance of those progress reports here.

Further updates will be provided once the spent fuel progress reporting commences on or about January 1, 2018.



San Onofre Nuclear Generating Station Monthly Spent Fuel Progress Report #1 December 29, 2017

Reporting Period: November 20, 2017 to December 20, 2017

SCE provides this monthly progress report on the storage of SONGS Units 2 and 3 spent fuel¹ in accordance with the August 2017 Settlement Agreement resolving the case *Citizens Oversight, Inc. v. California Coastal Commission*, San Diego Superior Court Case No. 37-2015-00037137.

Unit 2

Number of Fuel Assemblies in Spent Fuel Pool:	<u>1318</u>	Fuel Assemblies
Number of Fuel Assemblies in Process ² :	<u>0</u>	Fuel Assemblies
Number of Holtec MPC-37 Canisters in Process:	<u>0</u>	Canisters
Number of Fuel Assemblies on ISFSI Pad ³ :	<u>0</u>	Fuel Assemblies
Number of Holtec MPC-37 Canisters on ISFSI Pad:	<u>0</u>	Canisters

NOTES:

Unit 3

Number of Fuel Assemblies in Spent Fuel Pool:	<u>1350</u>	Fuel Assemblies
Number of Fuel Assemblies in Process:	<u>0</u>	Fuel Assemblies
Number of Holtec MPC-37 Canisters in Process:	<u>0</u>	Canisters
Number of Fuel Assemblies on ISFSI Pad:	<u>0</u>	Fuel Assemblies
Number of Holtec MPC-37 Canisters on ISFSI Pad:	<u>0</u>	Canisters

NOTES:

¹ This report accounts for the 2668 spent fuel assemblies that were in “wet” storage (i.e., spent fuel pools) at the time of the August 2017 settlement. It does not report on the 1187 fuel assemblies in 50 canisters (Areva NUHOMS 24PT1 and Areva NUHOMS 24PT4) that were already in dry storage at SONGS at the time of the August 2017 settlement.

² “In Process” refers to Holtec MPC-37 Dry Storage Canisters (DSC) that have begun but not yet completed fuel transfer operations. These DSCs are either waiting to be moved to the expanded Independent Spent Fuel Storage Installation (ISFSI) or are in transit to the expanded ISFSI.

³ “On ISFSI Pad” refers to DSCs that have been placed into the expanded ISFSI’s Holtec HI-STORM UMAX system for interim on-site storage (i.e., all fuel transfer operations are complete).