

**United States Nuclear Regulatory Commission
United States of America**

-) **10 CFR § 2.206 Request for**
 -) **Action**
 -)
 -) **Request for Revocation: Coastal Development**
 -) **Permit No.-015-0228 for Southern California**
 -) **Edison Dated Oct 12 2015; Safety Element**
 -) **Of Permit Under U.S.NRC Jurisdiction**
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In accordance with *10 CFR § 2.206 Requests for Action Under This Subpart*, the following evidence is hereby submitted to the United States Nuclear Regulatory Commission (NRC) of serious violations of Federal Law passed to protect the public’s safety; those violations therefore now pose an immediate threat to public safety at the Southern California Edison (SCE) San Onofre Nuclear Generating Station (SONGS) Independent Spent Fuel Storage Installation (ISFSI):

EXHIBIT A - California Coastal Commission (CCC) Response to Request for Revocation of Coastal Development Permit No. 9-15-0228

A Request for Revocation was issued to the CCC on 10-25-17 for the Coastal Development Permit (CDP) No. 9-15-0228 that authorized storage of high-level nuclear waste at SONGS in violation of [Public Law 88-82](#). The U.S. Congress never authorized the creation of nuclear waste storage at SONGS under said statute. Furthermore, it is inconceivable that Congress would ever authorize the creation of a nuclear waste burial on a military installation thus making said waste a legitimate target of war in violation of [Rule 97, Laws of Armed Conflict](#). Camp Pendleton also serves as the last and/or only U.S. Department of Defense [amphibious warfare training resource](#) of its kind making it an irreplaceable military resource.

Additional public safety dangers were evidenced in the Request for Revocation to which the CCC response on 11/20/17 stating “...in the Adopted Findings supporting the Commission’s approval of CDP No. 9-15-0228, the U.S. Supreme Court has found that the federal government, and in particular the NRC, has exclusive jurisdiction over the entire field of radiological safety in relation to nuclear facilities. The Commission and other state agencies are thus preempted from imposing on the operators of such facilities any regulatory requirements concerning radiation hazards and safety.” This statement is evidence that any threat to public safety and subsequent liability under this permit is solely the responsibility of the NRC.

[The 10/5/15 Addendum Tu14a pages 12, 13 and 46](#) essentially grants SCE 20 years to figure out how (technically) they can monitor the ISFSI. This demonstrates that the NRC had knowledge of the fact

that a failure of containment via multiple uncontrollable factors would not be identifiable thus, causing death or serious bodily injury to another person. The NRC's reckless disregard for protection of the public was present the moment unsafe storage of nuclear waste was approved which directly violates the [NRC's own Mission](#) "...to protect public health and safety, promote the common defense and security, and protect the environment."

The NRC's Approval of the permit in question and granting of special condition exemptions to SCE for monitoring not only violates their mission, it demonstrates a disregard for human life or indifference to the consequence. A reasonable person in this situation would know the act naturally and probably results in harm to other people thus, meeting the legal standard for [negligence](#). In addition, any incident resulting in the loss of life, liberty or property as protected under the [14th Amendment, Section 1 of the U.S. Constitution](#) becomes actionable under [42 U.S. Code § 1983 - Civil action for deprivation of rights](#).

EXHIBIT B - "San Onofre Nuclear Waste Problems" Report Issued by Tom English, Ph.D., Samuel Lawrence Foundation, Subrata Chakraborty, Ph.D., UCSD, Dept. of Chemistry and Biochemistry and Rear Admiral Len Hering Sr. USN (ret)

Storage of nuclear waste at SONGS has proceeded in violation of the permit as issued by the NRC. Specifically, the burial has been conducted by insufficiently trained workers with inadequate safeguards to protect public safety as evidenced in testimony given by industrial safety inspector turned whistleblower David Fritch. This reckless conduct has resulted in "near miss" disasters and damage to the canisters. The public is further jeopardized by the inability to inspect said canisters for damage during or after down loading into the concrete storage structure. Additionally, the Holtec canisters are designed and authorized for use at sites that are not on military installations thus, generally not legitimate targets of war under the Laws of Armed Conflict. No engineering has accounted for potential terrorist attacks on the casks or storage system and these thin walled canisters are not hardened sufficiently to withstand potential attacks. This renders them inherently defective as installed and therefore vulnerable in the event of any act of terror or war. Their use on a military installation poses an unconscionable risk to public safety.

EXHIBIT C - "Potential Economic Consequences from an Event at the SONGS ISFSI" A Whitepaper by Richard McCann and Elizabeth Stryjewski from M. Cubed

A major disaster at the SONGS ISFSI would have the potential to impact several major economic sectors in the affected counties, including transportation, port closures, tourism, and real estate, as part of shutting down normal commercial activity. The result is California is being needlessly exposed to an estimated \$13.4 trillion dollars in losses over the next 50 years.

EXHIBIT D - “RADIOLOGICAL Regulatory Failure - Nuclear Risks to Public Health and Safety Exposed” A Report by Charles R. Langley, Executive Director and Nina J. Babiarz, Board Member of Public Watchdogs

On 12/17/14, SCE filed an application for Emergency Planning Modifications (exemptions) to the NRC’s existing regulations. The modifications as submitted violate the provisions of the [Atomic Energy Act of 1954](#) and were strongly opposed on 5/14/14 by the California Energy Commission (CEC) via letter from their chair Robert B. Weisenmiller. On 6/4/15, the NRC granted SCE all the emergency planning exemptions they applied for deeming the entire project safe based on SCE’s statement inserted in every document to both the NRC and the CCC that “the plant is closed, the risk (for a radiological incident at SONGS) is low.” On 6/5/14, the NRC formally changed the Emergency Plan via waiver to the Atomic Energy Act of 1954 sent to Tom Palmisiano which removed responsibility for the effects of the deadly radiation outside the plant perimeter. On 6/5/15, the NRC notified the U.S. Department of Homeland Security (DHS) that the Federal Emergency Management Agency (FEMA) “is no longer required to review, monitor, and report activities associated with off-site radiological emergency planning and preparedness as they relate to SONGS are no longer required which then triggers the DHS to order FEMA to notify state and local governments of this change.

SCE then used those emergency planning exemptions and the change of emergency plan to go back to the CCC with a final permit application filing one week later essentially saying the NRC approved the permit as safe resulting in the 10/12/15 CDP No.-015-0228 that granted SCE permission to bury the waste. SCE needed the NRC stamp of approval for the CCC approve this permit so without the exemptions to existing regulation, this project would never have moved forward. This chain of events shows beyond shadow of a doubt that the NRC is liable for the current threat to public safety.

1/19/19 NRC Pre-decisional Enforcement Conference (PEC) Webinar with Holtec International

During the NRC PEC on 1/9/19, Holtec representative Dr. Kris Singh admitted on record to “manufacturing incompetence” of Holtec equipment currently in use at the ISFSI site. This calls into question all viability of Holtec warranties and claims of safety for the canisters and storage system thus, rendering them non-binding. As a result, an immediate threat to life, liberty and property now exists in the surrounding areas. These facts warrant immediate action to stop exponential increases in the magnitude of disaster that occurs with every new canister of waste installed under this permit. Failure to act upon these eminent threats to public safety is a violation of Federal law and actionable to the fullest extent of the law.

1/24/19 NRC PEC Webinar with SCE

The NRC held a PEC Webinar in the final step of the process to determine what punitive action, if any, will be taken against SCE's documented failure to obey Federal law involving the transfer of nuclear waste at SONGS. According to Scott Morris, the new NRC Regional Administrator for Region IV where the SONGS ISFSI is located, "Management failed to recognize the complexity and risks associated with a long-duration fuel transfer campaign, while using a relatively new system design,". Morris then posed the question to SCE "How do you justify that as a root cause?" SCE admitted that it was guilty of poor planning and lack of senior management and oversight and any assertion of their ability to move forward without further incident is not credible and presents a clear threat to public safety. Moreover, it calls into question the possibility that the entire system is defective. It is therefore unreasonable to trust that the failed management that led to this situation can be deemed competent to now self-correct with more training and improvements to their own management. SCE has lost their credibility and the overt conflict of interest in allowing them to self-correct creates an eminent danger to public safety.

The 1/24/19 NRC Webinar was predicated on the false premise that the safety issues at the SONGS ISFSI can be fixed. The submitted exhibits show clear evidence that the entire system is a deeply flawed engineering disaster. Although the Commission expressed dissatisfaction to SCE for waiting 45 days to report the 8/3/19 unsecured load event as a violation of Federal Law, it downplayed the fact that there was a previous unsecured load event on 7/22/18 which SCE has never reported. This clearly demonstrates that the NRC is not enforcing its own laws. Additionally, the 8/3/18 event was classified at the lowest level of 'Severity Level 4' which makes it unlikely that SCE will be fined or face criminal charges for its violations of Federal Law. The NRC announced a mere [\\$119,000 fine](#) for the near miss while allowing installation of the canisters to resume with no additional monitoring or third party safety oversight. The NRC is showing clear evidence of compromise every time they fail to enforce existing Federal Law under this permit and a demonstrable disregard for public safety by allowing work to continue under the same dangerous conditions without adequate monitoring or management.

Wherefore,

The Petitioner demands that the NRC revoke CDP No. 9-15-0228 and issue an immediate cease and desist to SCE et. al. Petitioner further insists on a requirement that the permit holder procure safer storage in thick walled, easily transportable canisters and relocate them to a temporary storage site further away from densely populated areas and not on a military installation.

Enclosures

Exhibit A: CCC Request For Revocation Response dated 11-20-17

Exhibit B: "San Onofre Nuclear Waste Problems"

Exhibit C: "Potential Economic Consequences from an Event at the SONGS ISFSI"

Exhibit D: "RADIOLOGICAL Regulatory Failure: Nuclear Risks to Public Health and Safety Exposed"

Certificate of service

This is to certify that a true and correct copy of the foregoing has been sent via fax and digitally delivered this 3rd day of August, 2019, to the Executive Director for Operations of the NRC at the following electronic mail address and number:

Margaret Doane, Executive Director for Operations, NRC

margaret.doane@nrc.gov

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CALIFORNIA COASTAL COMMISSION

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November 20, 2017

Via electronic mail

Bill Weigel
ltwallace@protonmail.com

Re: Request for Revocation of Coastal Development Permit No. 9-15-0228

Dear Mr. Weigel,

Coastal Commission staff has received your communication, dated October 25, 2017 and received on October 27, 2017, requesting the revocation of Coastal Development Permit (CDP) #9-15-0228 (Southern California Edison, SCE), approved by the Commission on October 6, 2015. CDP 9-15-0228 authorizes the installation and operation of a new independent spent fuel storage installation (ISFSI) at San Onofre Nuclear Generating Station (SONGS).

Your request for revocation is based on two basic contentions, summarized as follows:

- (1) The long-term lease granted by the U.S. Department of the Navy (Navy) for the operation of SONGS does not allow for spent fuel storage, and thus the Commission's CDP was issued in violation of existing law;
- (2) The proposed project presented legitimate risks to the public that were known to the Commission at the time of approval. These risks are asserted to include (i) past safety violations on the part of SCE, (ii) the location of the ISFSI near major population centers, transportation corridors, and earthquake faults, and in a tsunami zone within 108 feet of the ocean; (iii) the Commission's refusal to approve the repair or reinforcement of the SONGS seawall; (iv) inadequate emergency response planning in the event of a nuclear accident; and (v) the potential for corrosion and cracking and other safety concerns associated with the dry casks to be used for waste storage. The request for revocation further suggests that the Commission's approval of the CDP, in light of these alleged risks, may constitute criminal negligence.

The grounds for revocation of a CDP are set forth in 14 Cal. Code of Regulations Section 13105 and provide, in relevant part, as follows:

- a) *Intentional inclusion of inaccurate, erroneous or incomplete information in connection with a coastal development permit application, where the Commission finds that accurate and complete information would have caused the Commission to require additional or different conditions on a permit or deny an application;*
- b) *Failure to comply with the notice provisions of Section 13054, where the views of the person(s) not notified were not otherwise made known to the commission and could have*

caused the commission to require additional or different conditions on a permit or deny an application.

Commission regulations (14 CCR 13106) grant the Executive Director the authority to review a revocation request and decline to initiate revocation proceedings if he determines that the request does not establish the grounds for revocation as specified in Section 13105, and is thus patently frivolous and without merit.

I have reviewed the grounds for revocation stated in your October 25, 2017 request and decline to initiate revocation proceedings because I have determined that the request does not address the grounds for revocation as specified in Section 13105. In particular, you neither assert nor provide evidence that the Applicant, SCE, either intentionally included inaccurate, erroneous or incomplete information in connection with its coastal development permit application or failed to comply with the notice provisions of Section 13054 of the Commission's regulations.

Contention #1 – Permit was issued in violation of existing law

In support of this contention, you cite language from Public Law 88-82, which authorized the Navy to grant SCE an easement for the construction and operation of a nuclear power plant on federal land at Camp Pendleton, and argue the following: (a) that interim or long-term storage of spent nuclear fuel on the leased land is outside the scope of the easement and existing federal law; and (b) that by “approving a permit for a project outside the scope of the current Federal law describing the land lease, the CCC has indirectly violated the terms and conditions held between the Secretary of the Navy and SCE.” Your argument does not address the grounds for revocation as specified in 14 CCR 13105, and provides no evidence that SCE either intentionally included inaccurate, erroneous or incomplete information in connection with its coastal development permit application or failed to comply with the Commission's notice provisions.

For informational purposes, I would note that spent fuel has been stored on-site at SONGS on an interim basis since Unit 1 became operational in 1968. Most of the spent fuel from the three SONGS generating units has been stored in the spent fuel pools that are an integral component of all nuclear power plants in the United States. Since the early 2000s, some of the spent fuel has been stored in an existing ISFSI located in the North Industrial Area (former site of Unit 1). It is Commission staff's understanding that Federal law allows for such interim storage, and both wet storage (pools) and dry storage (ISFSI) at SONGS are a component of the existing site license issued by the federal Nuclear Regulatory Commission (NRC).

Contention #2 – Risks to the public were known by the Commission at the time of CDP approval

As a part of this contention, you assert that the Commission was aware of a variety of risks associated with the project, including alleged past safety violations by SCE, vulnerability of the project site to natural hazards and its close proximity of large urban areas and infrastructure, the extreme radioactivity of the spent fuel, the inadequacy of existing emergency response planning, and safety concerns associated with the dry storage casks. Again, your contention does not address the grounds for revocation, and neither asserts nor provides evidence that SCE misled the Commission or otherwise intentionally included inaccurate, erroneous or incomplete information in connection with its coastal development permit application. In fact, your argument appears to be predicated on the Commission having been fully aware of the concerns and risks you cite. Most of the risks and vulnerabilities cited in your argument relate directly to radiological safety concerns associated with the dry storage of spent fuel in the proposed ISFSI. As is stated clearly

in the Adopted Findings supporting the Commission's approval of CDP #9-15-0228, the U.S Supreme Court has found that the federal government, and in particular the NRC, has exclusive jurisdiction over the entire field of radiological safety in relation to nuclear facilities. The Commission and other state agencies are thus preempted from imposing on the operators of such facilities any regulatory requirements concerning radiation hazards and safety. For this reason, issues including the radioactivity of the spent fuel, emergency planning related to releases of radiation, the vulnerability of the surrounding population and infrastructure to such releases, and the safety of storage casks, were outside the scope of the Commission's authority over and review of the ISFSI project. Consistent with its authority under the Coastal Act, the Commission reviewed the project's potential exposure to natural hazards, including seismic and flooding hazards, and evaluated the stability and structural integrity of the ISFSI structure as a whole, but did not evaluate or condition the project with respect to nuclear safety or radiological issues. The Commission's detailed findings on natural hazards are contained in Section IV.D of the Adopted Findings.

For the reasons discussed above, I am declining to initiate revocation proceedings because I have concluded, pursuant to Commission regulations (14 CCR § 13106), that your October 25, 2017 revocation request does not address the grounds for revocation.

If you have questions about this matter, please contact Alison Dettmer, Deputy Director, or Joseph Street, Senior Environmental Scientist, in the Energy and Ocean Resources and Federal Consistency Division, at (415) 904-5240.

Sincerely,

A handwritten signature in blue ink that reads "Alison Dettmer for".

JOHN AINSWORTH
Executive Director

cc: David Asti, SCE
Ed Yep, SCE

**California Coastal Commission
State of California**

-) **14 CCR § 13105 Grounds for**
 -) **Revocation**
 -)
 -) **Request for Revocation of California Coastal**
 -) **Commission Permit to Southern California**
 -) **Edison Dated Oct 12 2015**
 -)
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In accordance with *14 CCR § 13105 Grounds for Revocation*, the following evidence is hereby submitted to the California Coastal Commission (CCC) on the grounds of “Intentional inclusion of inaccurate, erroneous or incomplete information in connection with a coastal development permit application, where the commission finds that accurate and complete information would have caused the commission to require additional or different conditions on a permit or deny an application.” regarding the permit issued items are legitimate grounds for revocation of the 9-15-0228 – Southern California Edison SONGS ISFSI Project.

1. Permit Issued in Violation of Existing Law: The 9-15-0228 – Southern California Edison (SCE) San Onofre Nuclear Generating Station (SONGS) ISFSI Project is located on Federal land established September 25, 1942. On July 30, 1963, the Secretary of the Navy granted easements for the use of lands in the Camp Joseph H. Pendleton Naval Reservation, California for a nuclear electric generating station to SCE. Public Law 88-82 defined in scope as follows:

“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 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, 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 generating station.”

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.”

This lease does not allow for the interim, or long-term storage of spent nuclear fuel on the leased land. Additionally, there can be no amendments to this lease for interim, or long term storage as it is not within the scope of the lease.

Concern of jurisdiction was brought up by W.L. Whitmire, CAPT, CEC, USN Assistant Chief of Staff, G-F Marine Corps Installation West Marine Corps Base, Camp Pendleton in a letter to Joseph Street of the CCC that stated:

“For the SONGS site, the instrument at issue is an easement, in which the federal agency retains even more rights to access the site subject to the easement than it does with a lease similar to that addressed by the federal district court in Manchester.

The Navy and USMC understand the commission’s reliance on the California Commission v. Granite Rock Co., (480 U.S. 572) case to assert jurisdiction under the California Coastal Act over this Federal property. The federal property in Granite Rock, though, was under the proprietorial jurisdiction where State law generally applies. The SONGS site, on the other hand, is under exclusive federal jurisdiction where State law generally does NOT apply. Thus, it is the Navy and USMC position that the Commission only has jurisdiction over the SONGS site through the consistency provisions of the Federal Coastal Zone Management Act. Therefore, the Navy and USMC object to the Commission requiring or issuing a Coastal Development Permit under the California Coastal Act for the proposed action at hand or for any other proposed action at the SONGS site.”

Furthermore, the CCC issued an Addendum to 9-15-0228 – Southern California Edison SONGS ISFSI Project, that included the following *Special Condition 1* which removed the requirement to properly attain approval by the U.S. Department of the Navy:

“1. Evidence of Landowner Approval. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and approval evidence of their legal ability to undertake the development as conditioned by the Commission. ~~Such evidence shall include documentation demonstrating that the U.S. Department of the Navy has renewed or extended its existing easement for use of the Part 50 licensed area for a term encompassing the authorized development (i.e., through October 6, 2035).~~”

This exemption was justified by the CCC with the following statement in the Addendum:

“U. S. Marine Corps Comments:

On October 1, 2015, Commission staff received a letter from the United States Navy and Marine Corps asserting that the Commission lacks jurisdiction to require or issue a CDP for development occurring on the SONGS site. The basis for the Navy and Marine Corps position is that under the Federal Coastal Zone Management Act (CZMA), land, “the use of which is by law subject solely to the discretion of ... the Federal Government, its officers or agents” is excluded from the definition of the coastal zone. (16 U.S.C. § 1453(1)).

The U.S. Supreme Court, however, has addressed this issue and determined that the CZMA does not pre-empt application of the California Coastal Act to private activities on federal land. It held that “[b]ecause Congress specifically disclaimed any intention to pre-empt pre-existing state authority in the CZMA, we conclude that even if all federal lands are excluded from the CZMA definition of ‘coastal zone,’ the CZMA does not automatically pre-empt all state regulation of activities on federal lands.” California Coastal Commission v. Granite Rock Co. (1987)

480 U.S. 572, 593. Thus, under Granite Rock, the Commission retains the authority under the Coastal Act to require coastal development permits for non-federal activities taking place on federal land, such as Southern California Edison's proposed project pending before the Commission.

Re: SCE – SONGS ISFSI October 5, 2015 Page 12 of 12

The U.S. Navy and Marine Corps support their argument that the Commission does not have coastal development permit jurisdiction on federal land by reference to an unpublished U.S. District Court decision, *Manchester Pacific Gateway v. California Coastal Commission* (2008 WL 5642245 (S.D. Cal.)). First, to the extent that the Manchester case is inconsistent with the Supreme Court holding in Granite Rock, the Supreme Court's decision in Granite Rock controls. Second, the Manchester case is factually distinguishable from the situation presented by the pending proposal from SCE. The Manchester case involved a Congressionally authorized public-private venture that resulted in the Navy obtaining new office space at no cost to the federal government. *Id.* at 1. The court acknowledged that the purpose of that project, as mandated by Congress, was to "provide for the use of private parties to accomplish the federal objective to construct Navy administrative facilities." *Id.* at 5. The project was authorized through legislation that spelled out the general parameters of the project and specifically authorized the project to be jointly developed by the Navy and the private developer. *Id.* at 6. Thus, the project was both a Navy and a private project.

The pending application from SCE does not involve a joint public-private venture. Thus, the facts are not analogous to those presented in the Manchester case. Thus, both under Granite Rock and due to factual distinctions between these facts and those raised in the Manchester case, the CZMA does not pre-empt the California Coastal Act here, and the Commission does have the jurisdiction to require a coastal development permit for the proposed development.

Finally, the Commission notes that the October 1, 2015 letter includes a statement, without elaboration, that the SONGS site is under exclusive federal jurisdiction where State law generally does not apply and the Commission only has jurisdiction over the SONGS site through the consistency provisions of the Coastal Zone Management Act. While the Commission does not disagree that it has jurisdiction over the SONGS site through the consistency provisions of the Federal Coastal Zone Management Act, the Commission finds that the singular statement in the October 1, 2015 letter neither establishes that the SONGS site is under exclusive federal jurisdiction where state law generally does not apply nor provides sufficient documentation, analysis or other supporting evidence. is direct evidence of intentional circumvention of Federal jurisdiction by eliminating the required approval for amendment by the U.S. Department of the Navy and SCE to the land lease in place."

This explanation fails to address the clearly defined scope of the Federal land lease with the U.S. Department of the Navy and SCE as being strictly limited to a nuclear electric generating station and NOT an interim, or long-term spent nuclear waste storage site. The Federal legislation allows for amendments to be made exclusively by the Secretary of the Navy and SCE. By approving a permit for a project outside the scope of the current Federal law describing the land lease, the CCC has indirectly violated the terms and conditions held between the Secretary of the Navy and SCE.

The CCC contends the California Coastal Act is not pre-empted from issuing permits over the proposed development but does NOT have the jurisdiction to approve any projects that go beyond the limitations of the existing law unless properly amended in accordance with the Federal land lease. The lease has a clearly defined scope of nuclear electric generation and in no

way allows for waste storage of any kind. A new definition in scope would require the proper legal approval.

2. Legitimate Risks to the Public Known by the CCC at Time of Approval: SCE violated the Code of Federal Regulation (CFR 50.59) requiring the safe operation of a nuclear reactor in 2011.

- Edison knowingly installed unsafe, unlicensed nuclear generators in 2011, while averting a review by the Nuclear Regulatory Commission (NRC).
- The reactors were then operated outside the allowable limits for pressure and temperature, causing a radiation leak that shut the facility down in 2012
- The same engineering management team that by-passed an NRC review are now in charge of designing the nuclear waste disposal.

Southern California Edison applied to the CA Coastal Commission for a permit to bury its radioactive nuclear waste on site, and the permit was granted on October 6, 2015. The planned radioactive waste dump site is located:

- In the center of 8.5 million people who live within the 50-mile radioactive plume radius identified by the NRC.
- Near an earthquake fault (the Newport Inglewood fault, which connects to the Rose Canyon fault)
- In a tsunami zone
- 108 feet from the ocean and as little as 3 feet above the water table
- Next to an Interstate highway that carries 20,000 vehicles an hour
- Adjacent to the 2nd busiest rail corridor in the U.S.A.

Each dry canister contains a payload of 37 spent fuel assemblies. The radiation contained in each of the 75 casks is equal to 9.3 nuclear warheads. That's total a radioactive equivalent of 700 nuclear warheads.

As permitted, the site is 108 feet from the beach adjacent to the seashore and the cliffs are already seriously eroded, and the existing seawall is threatened by rising sea levels, tidal waves, and extreme storm conditions.

The Coastal Commission will not approve repair or reinforcement of a seawall that would create the only buffer between the ocean and the radioactive waste. The Coastal Commission claims that it is preserving the coastline in its natural state by refusing the reinforcement of the seawall, notwithstanding its issuance of a permit for the waste burial in the first place.

The NRC, a federal agency in charge of the safety element of the permit, authorized the elimination of required emergency planning and response to a nuclear accident at the now-

failed SONGS facility. SCE does not have an off-site emergency response budget or any method of inspecting the casks for damage from saltwater corrosion, earthquakes, or cracking from a cask drop.

Dry casks are unsafe because once the waste is interred, it will be difficult and/or impossible to move it safely:

- 1 The canisters (known as Holtec Hi-Storm) have a design life of only 60 years and are only guaranteed to last 25 years.
- 2 The waste is deadly for at least a quarter million years.
- 3 If these delicate thin-walled canisters get an invisible microscopic crack, it will release millions of curies of radiation.
- 4 One curie can be enough to kill you.
- 5 A through-the-wall crack would release all of the helium inside the cask and initiate a meltdown.
- 6 The current cask design requires passive air cooling. Once the casks are placed in their concrete silos, they are cooled by airflow around the casks. Because these casks are so close to the beach, the air spaces that allow for cooling are subject to flooding, which could eliminate the passive air cooling and start a zirconium cladding fire.

California's Legal Definition of "Criminal Negligence" refers to a mental state of disregarding known or obvious risks to human life and safety. Based upon the aforementioned information, clear evidence of "Criminal Negligence" under California law is evidenced as the mental state of disregarding known or obvious risks to human life and safety.

Once SCE buries the waste on the beach, the waste moves a step closer to becoming "bona vacantia," a legal term that means an "ownerless property for whom no-one is responsible." That means the local jurisdictions will be responsible for an incalculable risk beyond any capacity for adequate response creating an unconscionable possibility for loss of life, liberty and property.

The CCC voted unanimously to allow nuclear-waste canisters to be stored in ways that can knowingly not be inspected, repaired, maintained or adequately monitored. The cans are not transportable if they are partially cracked. The possibility of an earthquake that could crack one of the cans was known and the canisters approved have no seismic rating for the safety of the canisters. The Commission added "Special Conditions" to the permit that these problems must be solved AFTER 20 years, with no evidence that this is even possible.

Criminal Negligence is clear and present in the act of granting the permit with the facts

regarding safety concerns known to the CCC. In addition, the reckless disregard for protection of the public is present the moment unsafe storage of deadly radioactive waste begins. Granting of the permit in question also demonstrates a disregard for human life or indifference to the consequences by exempting SCE from monitoring responsibilities for the integrity of the units as they do not exist. A reasonable person in this situation would know the act naturally and probably results in harm to other people.

As evidenced in the 10/5/15 Addendum Tu1a, The CCC had knowledge of the danger that failure of containment via multiple uncontrollable factors would likely result in death or serious bodily injury to another person. Additionally, any incident would immediately decimate personal property and create unconscionable losses.

Be it known that *Suits Against Public Officials in Their Individual Capacity: TITLE 42 U.S.C THE PUBLIC HEALTH AND WELFARE §1983* imposes liability without defense on state and local officials who, acting under color of law in their individual capacity, deprive plaintiffs of rights created by the Constitution and federal law.

Since the California Coastal Commission is a quasi-judicial agency, decisions made must be based on conclusions of existing law. Additionally, because of its focus on judicial acts, judicial immunity attaches to the judicial function, not the judicial office. If a court, individual judge, or prosecutor performs executive or legislative functions, immunity will be determined by the immunity applicable to the legislative or executive function performed. A clear absence of subject matter jurisdiction is grounds for loss of immunity to the following voting members:

EFFIE TURNBULL-SANDERS	DAYNA BOCHO	MARY LUÉVANO
DONNE BROWNSEY	MARY SHALLENBERGER	MARK VARGAS
RYAN SUNDBERG	AARON PESKIN	CAROL GROOM
ERIK HOWELL	ROBERTO URANGA	GREGORY COX

In conclusion, the scope of the permit issued by the CCC is specifically for the storage of spent nuclear fuel, which is in direct conflict with the terms of the Federal land lease and existing legislation.

Furthermore, the deadly nature of radioactive waste presents a clear and present danger to the right of life, liberty and property and failure to uphold the existing laws in a criminally negligent manner is actionable to the fullest extent.

We the people hereby demand an immediate Cease and Desist Order issued by the CCC to SCE for any mobilization of work related to the permit in question, followed by a full

revocation of the permit in accordance with CCC 14 CCR § 13105 *Grounds for Revocation*.

If any additional action/information is required to meet CCC 14 CCR § 13105 *Grounds for Revocation*, please send written notice within 2 business days to the email address under Certificate of Service.

Sincerely,

Bill Weigel

Certificate of service

This is to certify that a true and correct copy of the foregoing has been digitally delivered this 25th day of October, 2017, to the CCC at the following electronic mail addresses:

Chris.Pederson@coastal.ca.gov

Joseph.Street@coastal.ca.gov

from:

ltwallace@protonmail.com

"EXHIBIT B"

San Onofre Nuclear Waste Problems

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Subrata Chakraborty, Ph.D., UCSD, Dept. of Chemistry and Biochemistry
Rear Admiral Len Hering Sr. USN (ret)

January 2019

INTRODUCTION

In August 2018, a near-accident during the loading of nuclear waste into dry storage triggered a federal investigation and brought new urgency to the debate of how best to store some of the most dangerous waste known to humankind – spent nuclear fuel. The San Onofre Nuclear Generating Station (S.O.N.G.S.) closed in 2012 after a number of serious failures. Since then, Southern California Edison and its contractor, Holtec International, built a concrete storage vault to hold 3.6 million pounds of nuclear waste in dry storage. That vault is footsteps from the rising Pacific Ocean. In our brief report, we explore the fatal flaws of this location and recommend moving the storage facility to a technically defensible storage facility at a significantly higher elevation with distance from the ocean. We address the inadequacy of the equipment used to move and contain the nuclear waste material. We explore the gouging that occurs when stainless steel canisters are lowered into the storage vault and how gouging compromises the integrity of the containers. Finally, we examine management practices at San Onofre and an apparent lack of supervision, training and protocols. The examination of the perils of S.O.N.G.S. Independent Spent Fuel Storage Installations' poor location, poor technology and poor management, presents an urgent situation for regulators to: order Edison to permanently stop the loading of canisters into dry storage, require Edison to store the waste in canisters that may be inspected, and secure an independent analysis and risk assessment of canister loading procedure.

RATIONALE

Most serious of the issues facing the interim storage of nuclear waste at S.O.N.G.S. include the gouging damage to fully-loaded steel canisters upon downloading into the storage vault. These 54-ton thin-walled steel canisters are loaded with nuclear waste in wet storage – spent fuel pools – and are transported to the on-site concrete storage vault, adjacent to the reactor domes. With the Brinell hardness scale calculations our team demonstrates the depth and width of canister gouges upon downloading into the storage system. The current downloading procedure and on-site storage configuration provides the factors necessary to create gouges in the external steel walls of the canisters: operators have no visibility of the canister during downloading and precise adjustments to canister orientation cannot be made. These gouges remain undetected and unrepaired due to the lack of thorough inspection and monitoring at

the San Onofre Independent Spent Fuel Storage Installations (ISFSIs). The preliminary findings are found in this report.

1. POOR LOCATION

Today, two separate Independent Spent Fuel Storage Installations (ISFSIs) exist at San Onofre. The newest, built by Holtec, is located about 100 feet from the Pacific Ocean on the 85-acre grounds of S.O.N.G.S. The property is part of Marine Corps Base Camp Pendleton and is owned by the Department of the Navy. Two of the nation’s busiest transportation corridors -- Interstate 5 and the Los Angeles-San Diego-San Luis Obispo Rail Line -- flank the site. The ISFSIs are clearly visible in Google Earth images and in numerous published photographs. The high accessibility and visibility of the site leaves it extremely vulnerable to an act of malfeasance.

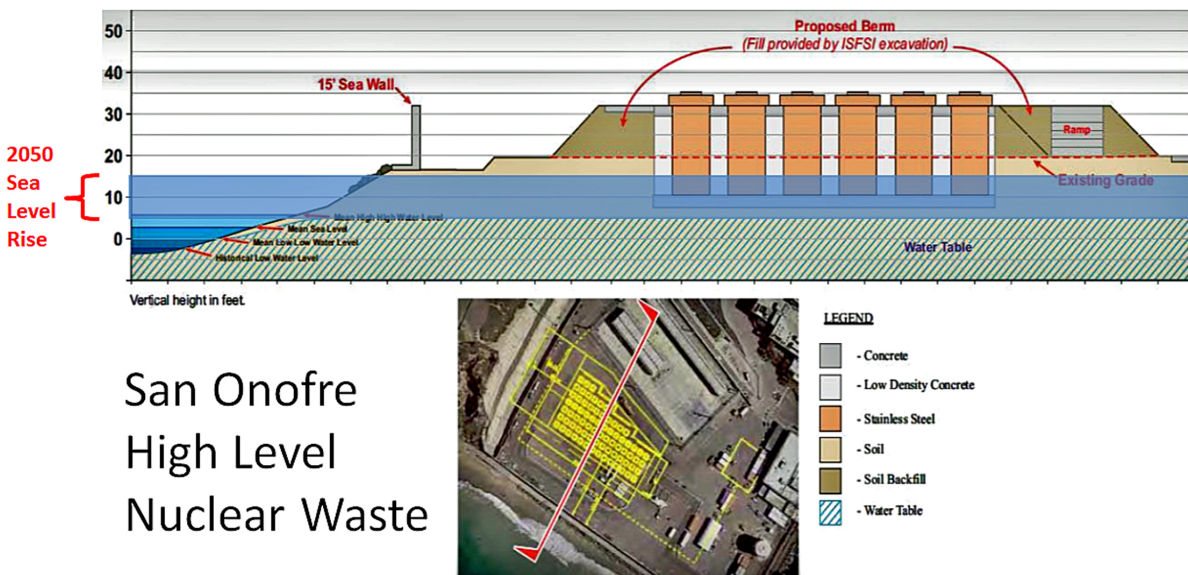


Figure 1. Independent Spent Fuel Storage Installations and Storage Vault.

Forces of nature, exacerbated by sea-level rise, carry further risks. Frequent high humidity and coastal fog make the metal at the site susceptible to short-term corrosion and stress-induced corrosion cracking. Also located at this site is a second, older ISFSI, which contains 51 thin-walled steel canisters that are up to 15 years old.

Numerous reports show that mean high tide level is about 18 inches below the base of the newer, oceanfront ISFSI, which was designed by Holtec. Since this is the mean height, the sea level frequently exceeds this height. Hence, it is likely the present ground water table will leach into the storage vault and result in at least damp storage. Further sea level rise due to climate change will make this problem far worse.

Dr. James Hansen, who managed NASA's climate change program for about 25 years, predicts sea levels could rise up to 10 feet during the next 50 years. At San Onofre, this would cause the bottom seven feet of the Holtec nuclear storage canisters to be submerged in seawater, unintentionally resulting in wet storage. This would invite a crisis similar to that of Fukushima, where spent fuel was exposed to moisture.

A second estimate appears in a comprehensive report by the Working Group of the California Ocean Protection Council Science Advisory Team. Published in 2017, the report shows 75% likelihood sea levels will rise by two feet by 2100. Either of these scenarios envisions that a major portion of the nuclear storage canisters at San Onofre would be submerged in seawater. The combination of the effects of sea-level rise and ground water inundation at the current location would change the Holtec ISFSI to wet storage site, for which it was not designed. Hence, little if anything would be accomplished by moving the waste from the spent-fuel pool to the dry storage ISFSI. The dangers would not be decreased. If anything, the inability to adequately measure and mitigate the impacts of corrosion on the underground nuclear canisters would lead to a significant increase in risk.

All of this can be avoided. If the nuclear waste at the two ISFSIs is transferred into thick-walled casks and then moved to a technically defensible storage facility at higher ground, the problems of ocean water and ground water intrusion can be avoided. As an added benefit, the waste would be easier to secure from an act of malfeasance.

2. POOR TECHNOLOGY

In California, the storage tanks at gas stations must be double-walled; painful experience has shown that single-walled containers can leak gasoline into the groundwater system. With a double-walled fuel tank, if a leak occurs it can be detected and the storage container can be repaired or replaced before any gasoline is released. At San Onofre, we certainly should expect that some kind of leak prevention system would be in place to contain extremely toxic high-level radioactive waste. Additionally, the canisters should be able to be monitored and inspected. The thin-walled canisters at the San Onofre ISFSIs cannot be adequately monitored or inspected. Regulators and Holtec officials have stated that the canisters cannot be inspected from the inside or the outside for cracks or other degradation and that, even if damage could be identified, it would be impossible to fix.

To illustrate the importance of adequate monitoring, we analyze a scenario in which one vent of a canister clogs. We refer to a Holtec non-proprietary safety analysis report¹ that calculates a temperature rise to about 90% of the maximum permissible limit (MPL) in 24 hours. This infers that within the next 12 hours the system will exceed the MPL rating and lead to a meltdown².

¹ Table 4.I.9, page 1050, Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System. USNRC Docket No.: 72-1014, Holtec Report No.: HI-2002444.

² S. Alyokhina, Thermal analysis of certain accident conditions of dry spent nuclear fuel storage, Nuclear Engineering and Technology 50 (2018) 717-723.

Through our own statistical analysis,³ we prove that if the probability of clogging one of the vents during an event is 1%, then the chance that one of the 146 total vents (two vents on each of 73 canisters) will clog in such an event is 78%. This chance reduces to 53% if we reduce the probability of occurrence to .5% from 1%. Tsunamis followed by clogging are dependent events and thus the combined chance of such an event is about 11% during a 30-year period. The sea level rise, the rise of tide levels and the associated rise in the coastal aquifer are all interlinked, as discussed previously. These climate-related phenomena could cause serious damage to the ISFSIs. Therefore, close monitoring and the use of proven thick-walled cask technology for all nuclear waste storage containers is not only necessary but urgent. A mishap could imperil the lives and livelihoods of more than 8 million people who live within 50 miles of the ISFSIs.

2.1 NEAR MISS EVENT

David Fritch, an industrial safety inspector turned whistleblower, remembers August 3, 2018, as a bad day. Fritch worked at San Onofre during a loading failure that left a fully-loaded 54-ton canister of high-level radioactive waste stuck on the lip of a guide ring. Above the 17-foot-tall canister, the slings that attached it to the behemoth loading rig had gone slack.

The canister was, “hanging by about a quarter inch,” Fritch told attendees of the community engagement panel on August 9. “It’s a bad day. That happened, and you haven’t heard about it, and that’s not right. What we have is a canister that could have fallen 18 feet.”

Subsequent investigations revealed that the operators and managers could not see Canister No. 29 as it was being loaded into the storage cavity and became stuck for nearly an hour.

Since the near-accident, regulators have halted further loading of canisters into the seaside storage vault and researchers have explored what could have happened if Canister No. 29 had fallen.

Our own research explores the basic physics of a fully-loaded 54-ton canister in free fall to extrapolate the upper energy involved in the initial impact.

For example, the falling canister could hit the steel-lined concrete floor of the nuclear waste storage facility with explosive energy greater than that of several large sticks of dynamite. The resultant damage to the canister could cause a large radiation release.

At point of contact at the bottom of the storage cavity, damage to the concrete and metal structure could ruin the cooling system. The damage to the concrete would equal that of a fully-loaded 18-wheeler truck, with a gross weight of 80,000 pounds, crashing into reinforced concrete at 23 miles per hour. Our preliminary calculations show the combination of the weight and velocity of the dropped canister exceeds the ISFSIs’ “design criteria for tornado missiles,” by a factor of 4. Future experiments should include drop tests of the actual canisters with non-

³ Chakraborty and English, 2019, ES&H Risk Estimation from “Interim Storage” of SNF at the Beach: The San Onofre NPP, WM2019 Conference, March 3-7, 2019, Phoenix, Arizona, USA (under review).

radioactive loads that simulate the weight of the spent fuel assemblies and fuel baskets to determine what would happen to the actual canisters.

Southern California Edison is set to move 73 canisters into the seaside storage vault and, at the time of publication, has moved 29. Each nuclear storage canister contains 37 spent fuel assemblies, which generate enormous amounts of heat. The systems are cooled by a simple air duct system, which could have been blocked by the damage caused by the canister's fall. If that had happened, great quantities of water would have been needed to cool the reaction and prevent or control a meltdown. The enveloping water would instantly become radioactive steam, as we saw at Fukushima. In the heavily-populated area surrounding San Onofre, however, radioactive steam could prompt the evacuation of millions of people. What's more, since both the canister and the surrounding structure could be badly damaged, there would be no available way to pull the damaged canister from the storage cavity.

Nuclear Regulatory Commission (NRC) computer simulations show what happens when a nuclear storage canister with slightly thinner walls⁴ drops from 19 feet. In the test, a canister falls from a transfer cask onto a storage pedestal. The canister failure rate was 28%. Similar calculations must be performed at San Onofre to determine if that storage system has a similar probability of canister failure. At 28%, that is more than a one-in-four chance of catastrophic failure. Would you fly on an airplane with those odds? Our analysis alone should place the NRC, policymakers and Edison on alert. A more substantial analysis must be completed to examine the potential damage that can be caused by a falling, fully-loaded 54-ton nuclear storage canister.

Continued loading of the nuclear waste into canisters threatens the lives and livelihood of more than 8 million people. Software and computer resources are available by which estimates can be made of the impacts of a dropped canister on both the reinforced concrete and the canister walls. The NRC-approved Holtec technical specifications state that a canister drop of more than 11 inches requires the contents of the canister to be inspected for damage. This specification assumed the canister was in a transfer cask. The impact of an un-casked canister was never analyzed because Holtec and the NRC assumed it could never happen, citing triple-redundancy of the fuel transfer system. But a subsequent NRC inspection revealed that on August 3rd, all three components of this system simultaneously failed. Only the accidental snag of a quarter-inch of the 54-ton canister on the lip of the guide ring prevented a catastrophe.

Our research suggests the entire storage system may need to be redesigned to reduce the probability of canister failure to levels that are acceptable in such a highly-populated area.

⁴ Pg. 4-24 Table 12, NUREG-1864 - A Pilot Probabilistic Risk Assessment of a Dry Cask Storage System at a Nuclear Power Plant, March 2007, A. Malliakos, NRC Project Manager

RESULTS

2.2 GOUGES IN DROPPED CANISTER

In their 2007 report, the NRC's analysts did not consider the impact of gouges on the strength of canister walls. There was no need, the analysts and a Holtec official said, as gouges were not important to the system under examination. We disagree. A detailed analysis of gouging is necessary to properly evaluate the damage to Canister No. 29 during the botched loading and to every other canister loaded into the ISFSI.

We established preliminary results of such an analysis using the Brinell hardness scale approach to estimate the depth and width of expected gouges in 316 stainless steel, of which the Holtec canisters at San Onofre is made.

While the canister is stuck, the guide ring gouges the bottom of the canister.

As the canister drops it is gouged on two sides by a combination of the guide ring, the storage cavity wall and the inner diameter of the transfer cask. This gouging absorbs some of the kinetic energy of the canister.

When the canister smashes into the bottom of the cavity, the kinetic energy and momentum from the fall will be dissipated by damage to:

- the ISFSI;
- the canister; and
- the contents of the canister.

The formation process of gouges will exert a force on the canister. This is the force, P , shown in Figure 2.

Brinell Hardness Scale

The **Brinell scale** characterizes the indentation hardness of materials through the scale of penetration of an indenter, loaded on a material test-piece.

$$\text{BHN} = \frac{2P}{\pi D(D - \sqrt{D^2 - d^2})}$$

Where:

- BHN = Brinell Hardness Number (kgf/mm²)
- P = applied load in kilogram-force (kgf)
- D = diameter of indenter (mm)
- d = diameter of indentation (mm)

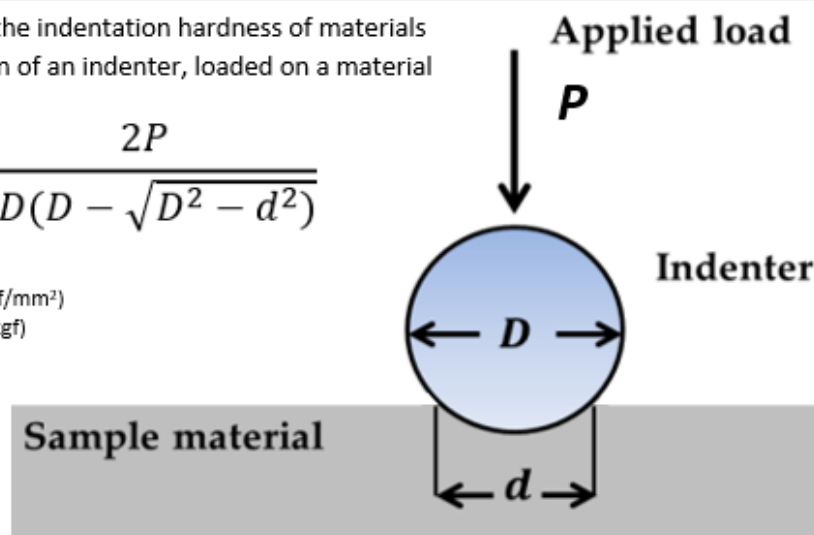


Figure 2. Brinell hardness scale calculation. Credit: *The Samuel Lawrence Foundation.*

In Figure 3, the width of a gouge is shown in relationship to the canister’s weight. The expected range of gouge widths is shown in Figure 3. A variety of indenter widths are used as a surrogate for the gouging. The gouging widths range from 2 mm to 16 mm. This is highly significant, since the thickness of the nuclear canisters is 5/8”, which is close to 16 mm. We recommend that tests be performed on actual canisters to experimentally determine the accuracy of these predictions.

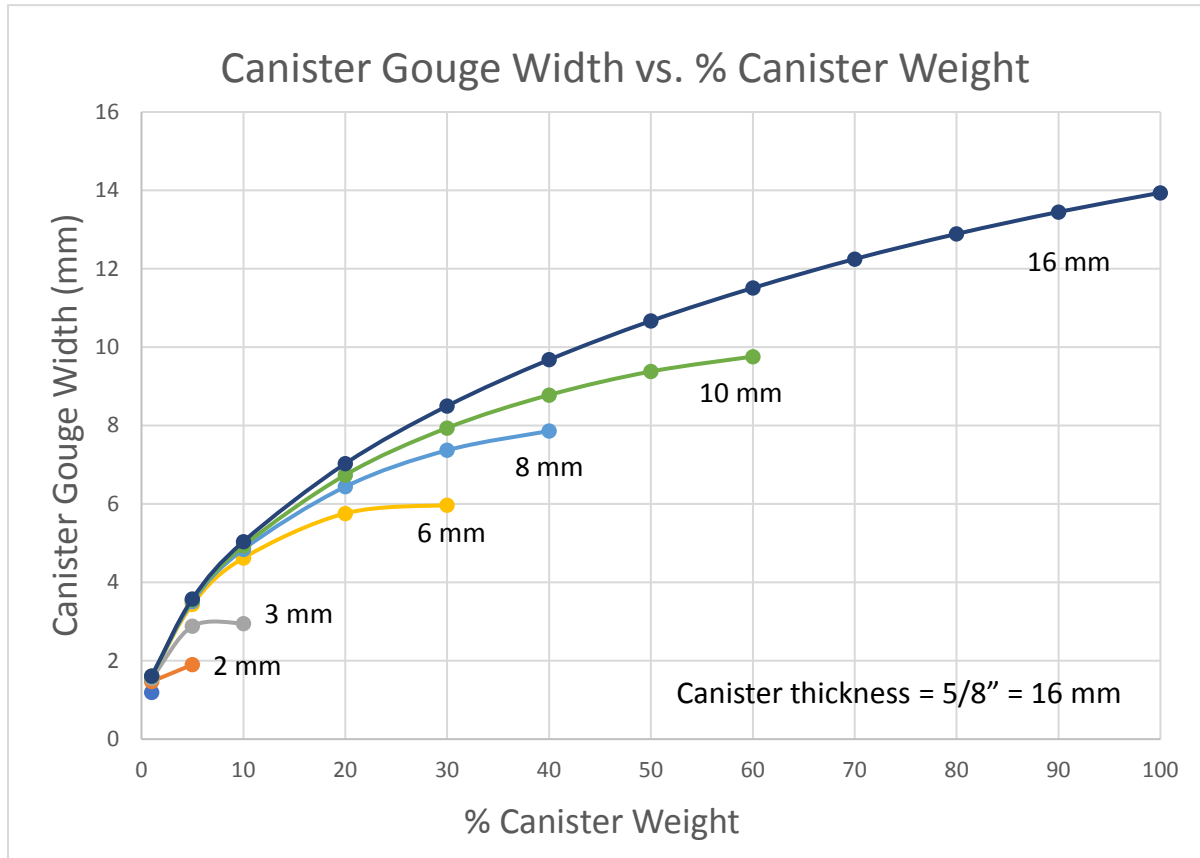


Figure 3. Calculated penetration width of gouge as a function of load for different indenter diameter. The hardness number in Brinell scale for stainless steel 316 (BHN) is 217 kgf/mm². Saturated zone is eliminated.

The expected range of gouge depths is shown in Figure 4. A variety of indenter depths are used as a surrogate for the gouging. The gouging depths expected to be found range from 1 mm to 4.5 mm. This is highly significant, since 4.5 mm is 28% of the thickness of the nuclear storage canister.

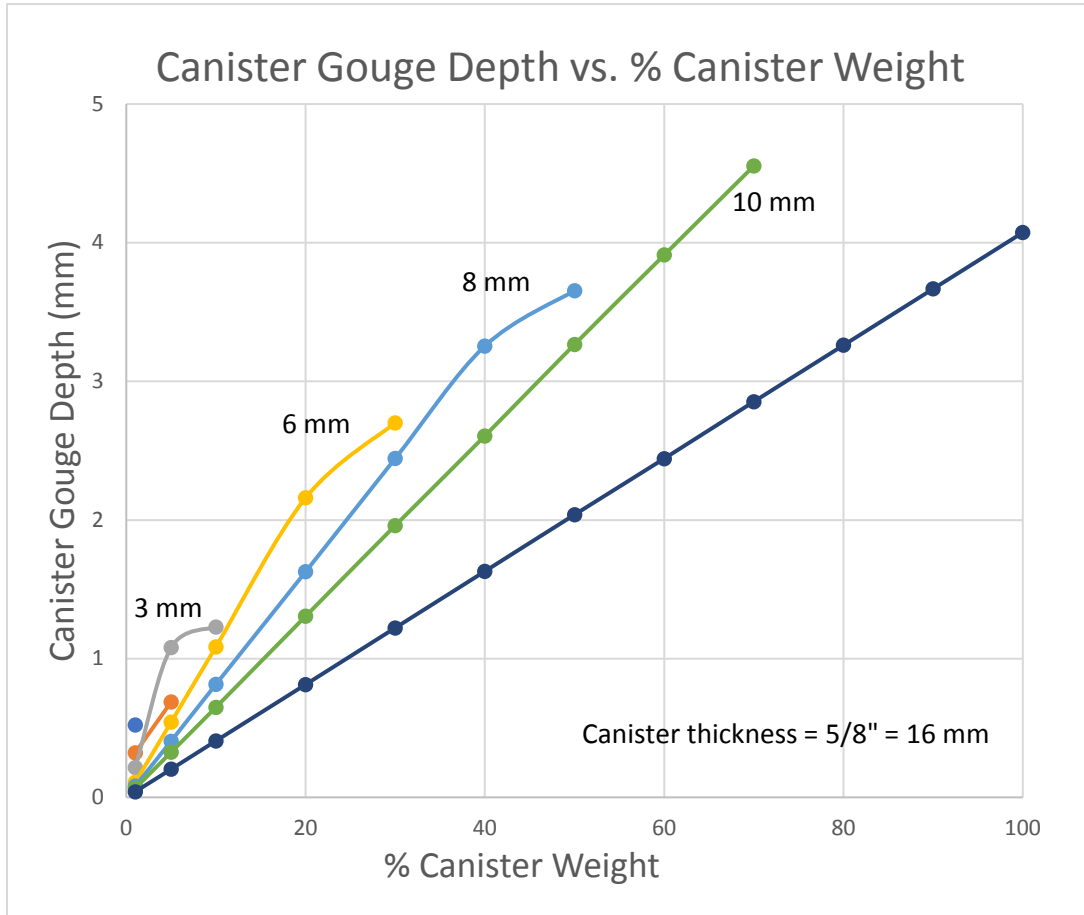


Figure 4. Calculated penetration depth of gouge as a function of load for different indenter diameter. The hardness number in Brinell scale for stainless steel 316 (BHN) is 217 kgf/mm².

2.3 GOUGES DURING ROUTINE LOADING

Extensive gouging will also occur during routine loading of the nuclear storage canister into the storage cavity. By moving the Vertical Cask Transporter, shown in Figure 5, crude adjustments can be made to the alignment of the canister as it is lowered into the storage cavity. The bulky, tank-like machine travels on steel treads, like those found on earth-moving or military equipment. The transporter is not equipped to make the fine adjustments required to insert the nuclear storage canister into the narrow spacing of the storage cavity without banging the canister against the guide ring. This banging gouges the canister and causes the canister to move side-to-side, similar to a pendulum. An Edison official has referred to this process as “jiggling.” This jiggling process continues for 15 to 30 minutes as the canister is lowered to the bottom of the storage cavity. Each “jiggle” causes the type of gouging shown in Figure 3 and

Figure 4. We expect that this routine loading process produces a multitude of gouges that significantly damage the canister walls, rendering them unsuitable for storage of nuclear waste.



Figure 5. Vertical Cask Transporter during downloading and alignment of a canister.

Credit: San Onofre Special Inspection Webinar Presentation (NRC).

We strongly recommend that a sampling of the canisters previously lowered into the storage vault be removed and inspected so the extent of gouging can be experimentally determined. We expect the damage will be so severe that the current ISFSI will need to be replaced.

3. POOR MANAGEMENT

During the late 1970s and early 1980s, Rear Admiral Len Hering, USN (ret) served as a Nuclear Weapons Safety Officer, Handling Officer and Surety Officer. Admiral Hering provides the following assessment of management practices at the S.O.N.G.S. ISFSI.

When it comes to the handling and movement of nuclear material, you would expect that only those specifically qualified and trained for such an important task would be deployed to ensure the safe movement of that material. In the Department of Defense (DOD), strict requirements are in place to make sure this very dangerous material is properly handled, transported and stowed.

The DOD and Navy programs were created and built to make certain nuclear material was secure, safely handled and accounted for. Every person who has any contact with nuclear material is required to have a security clearance. A “two-person rule” is in effect at all times. Personnel at all levels perform countless hours of training, obtain certifications of qualification, and complete rigorous inspection and training events to both prove and assure their proficiency in performing the job they are assigned. All of this is all done before anyone is permitted to even gaze upon a real weapon.

Handling gear and all aspects of the evolution are vigilantly maintained, inspected, weight-tested and inspected again. Cranes and dollies or hoist equipment are tested, placed under extreme loading conditions and prepared for specific tasks. Nothing goes untested. Nothing. We leave nothing to chance and we never hypothetically presume. If it isn’t tested and proven, it isn’t done with the actual material in question.

Ashore, and specifically at S.O.N.G.S, I find that virtually none of the protocols that should be expected for the safe handling of this dangerous material are present. I find that personnel and companies are being hired virtually off the street, no specific qualification standards are present or for that matter even required, training is not specific to the risks of the material involved, and there is no fully-qualified and certified team assembled for this highly-critical operation. They have not been required to conduct dry runs to ensure handling teams are proficient and, more importantly, they have never trained specifically to be ready to execute emergency procedures should the unexpected occur. The manuals are not on site, nor are they being followed to step a team through the evolution of moving the nuclear waste. Team leaders have no specific handling qualifications or training. Even the industrial safety inspectors are not specifically nuclear-certified but are general industrial specialists. No manuals are available for procedural review and, by their own admission, the required number of safety officials are often absent during movement of the nuclear storage canisters. In the Navy, if a near-accident such as the one at S.O.N.G.S is uncovered, the Commanding Officer, Weapons Officer -- and anyone else with a significant position on the team -- are relieved. The ship is then ordered to stand-down while a team of experts off-loads its cargo.

The widely reported incident in which a 54-ton, thin-walled container nearly fell 18 feet while it was being lowered into its silo rocked me to the core. What made things worse was narrative in a follow-up report that stated the canister was left suspended for nearly an hour, held up by a mere guide ring installed in the silo, cables slack and operators clueless. There is no doubt that this incident occurred because those on-scene were completely unqualified, unprepared, untrained and incompetent. This very dangerous operation was being performed as if this crew were moving a simple stack of wood around a construction site when, in actuality, the crew was conducting one of the most dangerous operations in the industrial sector. No one was relieved, fired or held accountable. The investigation being conducted is flawed in that those responsible for this deplorable safety environment are the same people who will feed findings to the investigation.

The handling of nuclear waste at San Onofre and other sites across our country should scare every single American. We have a regulatory agency that has failed to make sure the most basic safety precautions are being applied to one of the most dangerous industrial evolutions of our time. The number of waivers being issued where safety is of concern is staggering.

In the DOD, the reason why there were and continue to be no significant accidents with the handling of nuclear material is because there are no waivers and there are no quick wins. Workers are fully qualified, inspected and certified to handle this very dangerous material. In this case, there is no room for error. One mistake is too many. It is my professional opinion that we need to hit the reset button before a disaster of unparalleled portion occurs.

CONCLUSION

The nuclear waste at San Onofre requires a much better storage configuration and must be moved to a technically defensible storage facility to reduce threats. From a security standpoint, the waste should be moved further away from major transportation corridors. The thin-walled nuclear waste storage canisters are at risk of failure due to gouging when downloaded into the seaside storage vault. Once lowered into the storage system, the canisters cannot be thoroughly inspected, monitored or repaired. A near-accident on August 3rd demonstrated that safety protocols are lacking, and that further study is needed to understand the consequences of dropping a fully-loaded 54-ton canister of nuclear waste. The incident revealed that the loading equipment is imprecise and revealed a pattern of mismanagement in canister loading procedure. A complete analysis of canister loading procedure and comprehensive risk assessment must be conducted by an independent party with absolute transparency. If an accident, natural disaster, negligence, or an act of terrorism were to cause a large-scale release of radiation, the health and safety of 8.4 million people within a 50-mile radius would be put at risk. To secure the nuclear waste properly, we recommend a permanent stop to the loading of nuclear storage canisters into the seaside storage vault, placing spent fuel into reliable canisters that can be monitored, inspected and repaired, and moving these canisters to an acceptable storage facility at a significantly higher elevation.

ACKNOWLEDGEMENTS

We thank UCSD Departments of Chemistry and Biochemistry and The Samuel Lawrence Foundation. For more information visit www.samuellawrencefoundation.org/nuclear-energy.

"EXHIBIT C"

January 2019

Potential Economic Consequences from an Event at the San Onofre Nuclear Generating Station (S.O.N.G.S.) Interim Spent Fuel Storage Installation

A Whitepaper by Richard McCann and Elizabeth Stryjewski



Sponsored by the Samuel Lawrence Foundation

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Abstract

The San Onofre Nuclear Generating Station (S.O.N.G.S.) operated for 44 years from 1968 to 2012. Its Interim Spent Fuel Storage Facility remains, located next to the Pacific Ocean along Interstate 5 between San Diego and Orange County. A significant release of nuclear material there could impact one of the most populated regions in the U.S. out to a range of 50 miles. This analysis examined the economic effects on a three-county region, with a specific look at prominent local industries including tourism and the largest port complex on the West Coast, as well loss of residential real estate value. In a scenario looking at contamination across a one-mile radius, the most significant loss likely is disruption of the regional transportation network for up to a year costing \$266 million. Scenarios were assessed for evacuation zones of 10 and 50 miles, looking at impacts for one and 50 years. Residential property losses could amount to \$11 to \$500 billion depending on the evacuation scenario, and the loss in annual gross regional product could range from \$6 to \$500 billion. In the 50-mile impact scenario, about \$13.4 trillion in gross regional product could be at risk over a 50-year time horizon. These potential catastrophic losses are at least a ten-fold larger than present levels of insurance against these types of events. The impact on business property value is best estimated as the loss of future income measured through the gross regional product (GRP) over an extended period, e.g., 50 years. No commercial, institutional, or government real estate values are included in this report, and only residential real estate values are calculated.

Introduction

The first unit of the San Onofre Nuclear Generating Station (S.O.N.G.S.) began operation in 1968, and the second two units closed in 2012 after continuous leaks were discovered in the plant's steam generator tubes. The S.O.N.G.S. Interim Spent Fuel Storage Installation is located adjacent to the now-closed plant site on the coastal side of Interstate 5 in north San Diego County. A significant release of nuclear material at the Interim Spent Fuel Storage Installation, located along the Pacific Coast, has the potential to impact a large swath of Southern California. The economic impact would depend on the scale and the duration of any evacuations or impairments to infrastructure and economic activities. This memo outlines what we know about the potential impacts and provides estimates of the conceivable economic impact of a nuclear disaster at S.O.N.G.S. under a range of scenarios.

Economic scale of the Southern California region

Located in San Diego on Marine Corps Base Camp Pendleton and adjacent to Interstate 5 (I-5) the S.O.N.G.S. facility has the potential to impact the three coastal counties of San Diego, Orange County, and Los Angeles. These are the three most populous counties in the state—their combined population makes up 42% of Californians. The Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area (MSA) has a regional GDP of \$1 trillion and ranks as the 2nd largest metropolitan economy in the US. The San Diego-Carlsbad MSA has a regional GDP of \$215 billion and ranks 17th in the US.¹ Out of the \$2.75 trillion California economy, these make up 36% and 8%, respectively. Residential housing values in coastal Southern California are more than 160% higher than the national average according to the Zillow Home Value Index as of August 2018. The housing stock value of \$1.44 trillion represents 14.7% of the total national value, with 5.7% of stock.

¹ Gross Domestic Product by Metropolitan Area, 2017. Bureau of Economic Analysis.
<https://www.bea.gov/data/gdp/gdp-metropolitan-area>

Drawing Lessons from Fukushima Tsunami Disaster Impacts

The recent nuclear disaster at the Fukushima Facility in Japan in 2011 provides a useful example of the evacuation scenarios and economic impacts that are possible after a nuclear disaster. Fukushima is not a clear-cut example because the nuclear disaster at the Fukushima Daiichi plant was preceded by an earthquake and tsunami that already created a massive humanitarian and economic toll before the nuclear event. However, it does provide a useful example of the potential scale of a nuclear disaster in terms of geography, reach and duration.

Waves from the March 2011 tsunami damaged the Fukushima nuclear power plant and caused a leak of radioactive material. On the International Nuclear Event Scale, Japan classified this disaster at a “seven,” which means it was a “major release of radiation, with widespread health and environmental effects.” The first evacuation was within a 2 km (1.2-mile) radius of the Daiichi plant the same day as the tsunami. The next day the evacuation expanded to 10 km (6.2 miles), and further to 20 km (12.4 miles) after high radiation levels were recorded at the site.² Initially, about 45,000 people were evacuated from Fukushima. That number increased to a peak of over 60,000 people in late 2011. The number of evacuees has steadily decreased over time as people return to the area, however, according to Fukushima Prefecture, as of early 2018, there are still approximately 35,000 evacuees who have yet to return home. One estimate puts the number of people affected by the nuclear accident at 32 million.³

In 2017, the Japan Center for Economic Research found that the total cost of the Fukushima disaster could reach \$626 billion, including the cost of compensating victims, clean-up costs, decontamination, interim storage of contaminated materials, and decommissioning the plant.⁴

² Robin Harding, “Fukushima nuclear disaster: did the evacuation raise the death toll?” *Financial Times*, March 10, 2018. <https://www.ft.com/content/000f864e-22ba-11e8-addone-0e8958b189ea>

³ Jonathan M. Samet and Dayana Chanson, “Fukushima Daiichi Power Plant Disaster: How many people were affected? – 2015 Report,” https://www.greencross.ch/wp-content/uploads/uploads/media/2015_fukushima_report.pdf, March 9, 2015.

⁴ ‘Real cost of Fukushima disaster will reach Y70 trillion, or triple government’s estimate: think tank’, *The Japan Times*. April 1, 2017. <https://www.japantimes.co.jp/news/2017/04/01/national/real-cost-fukushima-disaster-will-reach-%C2%A570-trillion-triple-governments-estimate-think-tank/#.W6GMIs5KhD8>

The cost of cleanup at the site alone was estimated in 2016 to be \$180 billion.⁵ In addition, supply chain networks throughout Japan were impacted by the evacuation of entire communities as well as infrastructure losses. Further, the disaster triggered a national policy decision to close all of its nuclear power plants for two years, and to only restart a limited number.⁶ Japan chose to seek alternative energy sources, including more fossil fuel usage, on short order.

For comparison, the Chernobyl nuclear power plant disaster in Ukraine in 1986 affected over 18,000 square miles (which implies a radius of at least 75 miles). The total cost estimated by the Belarus Foreign Ministry is \$235 billion over 30 years, with 1.3 million individuals impacted.⁷

Analysis of Economic Consequences

A major disaster at the S.O.N.G.S. Interim Spent Fuel Storage Installation would have the potential to impact several major economic sectors in the affected counties, including transportation, port closures, tourism, and real estate, as part of shutting down normal commercial activity. We use IMPLAN economic impact modelling software to estimate the overall economic activity in the impact area that would be curtailed due to a large-scale evacuation. The IMPLAN data includes all commercial and household economic activity that takes place in the affected zip codes. To get a more comprehensive picture of the impacts, we also look specifically at some of the large economic sectors that would be impacted by a large-scale disaster. These will be discussed individually in the sections below.

IMPLAN is a widely-accepted economic analysis tool used to value the net income and employment activity for economic sectors. Input-output models such as IMPLAN use area-specific data on industrial and commercial activity to trace how a dollar of investment moves through a regional economy. These models are commonly used to evaluate economic activity in which changes in the total demand for output of the industries being studied results in

⁵ "Japan Fukushima nuclear plant 'clean-up costs double," *BBC News*, <https://www.bbc.com/news/world-asia-38131248>, November 28, 2016.

⁶ Takamitsu Sawa, "The future shape of Japan's energy policy," *Japan Times*, <https://www.japantimes.co.jp/opinion/2018/07/12/commentary/japan-commentary/future-shape-japans-energy-policy/>, July 12, 2018.

⁷ Belarus Foreign Ministry, "CHERNOBYL disaster: Why are the consequences still observed? And Why is the international assistance still critical?", http://chernobyl.undp.org/russian/docs/belarus_23_anniversary.pdf, April 2009.

changes in inputs and outputs by the local economic sectors.⁸ For example, these models have been used to estimate the impacts of such projects as construction and operation of new factories, development of tourism facilities, and military base closures.

Input-output models such as IMPLAN use area-specific data on industrial and commercial activity to trace how a dollar of investment moves through a regional economy. These models are commonly used to evaluate economic activity in which changes in the total demand for output of the industries being studied results in changes in inputs and outputs by the local economic sectors. For example, these models have been used to estimate the impacts of such projects as construction and operation of new factories, development of tourism facilities, and military base closures.

For all the economic impacts, we consider several basic scenarios. Geographically, we look at the impacts of a total evacuation within a one-mile radius, a 10-mile radius, and a 50-mile radius. The one-mile radius represents a relatively minor event, but because of the S.O.N.G.S. facility's location, it would include the I-5 highway and rail corridor. The 10-mile radius is consistent with the Emergency Planning Zone (EPZ) directed by the Nuclear Regulatory Commission (NRC), and represents the plume exposure pathway, where predetermined protective action plans are in place to reduce harmful exposure to radioactive material.⁹ The 50-mile radius represents a more serious event. For example, in 2011, after the Fukushima nuclear disaster, the Nuclear Regulatory Commission advised Americans residing in Japan to evacuate within a 50-mile radius.¹⁰ The 50-mile radius is designated by the NRC as the ingestion exposure EPZ. These two ranges provide a range of potential impacts beyond the localized ones that would be associated with an event affecting a one-mile radius. We consider a one-year duration of impacts, as well as a 50-year duration to capture the potential time range of contamination.¹¹

⁸ See Appendix A for more detail on the IMPLAN model.

⁹ "Emergency Planning Zones". US Nuclear Regulatory Commission.

<https://www.nrc.gov/about-nrc/emerg-preparedness/about-emerg-preparedness/planning-zones.html>

¹⁰ "Emergency Planning Zones". US Nuclear Regulatory Commission.

<https://www.nrc.gov/about-nrc/emerg-preparedness/about-emerg-preparedness/planning-zones.html>

¹¹ Due to the effects of discounting future economic activity in the standard economic analytic method used here, the lost value more than 50 years in the future is de minimis

Sector-Specific Impacts

Port Closures

The 50-mile exposure zone for the S.O.N.G.S. Interim Spent Fuel Storage Installation would include the Ports of Los Angeles and Long Beach. In total domestic and international trade, these ports rank 9th and 7th, respectively, among all US ports by tonnage and make up 5% of total. For this analysis, we estimate the cost of closing these two ports based on studies of past port closures. In 2015, the ports of Los Angeles and Long Beach were closed for 11 days over a 12-day period due to a labor dispute. A range of analyses have estimated the economic cost of this closure, with estimates ranging from \$1.9 billion to \$19.4 billion.¹² The Congressional Budget Office (CBO) arrived at a relatively conservative estimate of the cost of a one-week shutdown of the ports of Los Angeles and Long Beach, finding that it would cost the US economy \$65 million to \$150 million a day.¹³ Using this range and extrapolating out to a closure that lasts for one year, we estimate the total economic cost at \$23.7 billion to \$54.7 billion, as shown in Table 1. The CBO estimates are for a one-week shutdown. However, the costs of a longer-term shutdown would likely be mitigated somewhat by longer-term adjustments. We show the potential impacts of a 50-year closure in Table 1 as well. We therefore use the lower end of the estimates of \$23.7 billion as our benchmark of the impact of port closures for a year. The cost of these port closures is subsumed into the overall IMPLAN impact analysis described further below.

Table 1. Port Closure Range of Economic Impacts (\$ Billions)

Period	Low End	High End
1 year	\$23.7	\$54.7
50 years	\$633.6	\$1,461.9

In addition, a 50-mile radius from the S.O.N.G.S. facility would also include the smaller Port of San Diego. Since there are no reliable estimates of the economic cost of a port closure in San Diego, we do not explicitly call this out in this analysis, resulting in a more conservative

¹² Bonney, Joseph. 'Putting a Price on a Port Strike'. The Journal of Commerce. JOC.com. https://www.joc.com/port-news/longshoreman-labor/international-longshoremen%E2%80%99s-association/putting-price-port-strike_20130215.html, February 15, 2013.

¹³ Ibid.

estimate. However, to the extent that Port of San Diego activities are captured in the 50-mile radius event analysis, those are included in the IMPLAN results.

Tourism

While the tourism industry is included in the general economic activity that is analyzed in IMPLAN economic modelling, considering that Los Angeles and San Diego are among the top tourist destinations in the US, it is worth understanding this impact separately.

A look at the total county-wide tourism economy in 2016 is provided below in Table 2. Tourism contributes \$23 billion to Orange and San Diego counties, and nearly \$2 billion in tax revenues.

Table 2. 2016 Tourism Economy Statistics (\$ Billions)

	Employment	Economic Activity	Tax Revenue
Los Angeles	1,000,000	\$126.3	\$10.3
Orange County	164,000	\$12.1	\$1.1
San Diego	194,000	\$10.8	\$0.8

Source: San Diego: <https://www.sandiego.org/about/industry-research.aspx>;

Orange County: http://www.oc-breeze.com/2017/04/18/99980_visitor-numbers-orange-county-hit-new-records-2016/;

Los Angeles: <http://www.latimes.com/business/la-fi-ca-economic-impact-20170504-story.html>

A majority of Orange County is covered in 50 mile scenario, most importantly along the Pacific Coast, so we assume that the entire tourism industry would be impacted there. This includes the famous tourist destinations in Anaheim such as Disneyland and its environs. We also assume that the entire tourism industry in San Diego will be impacted under the 50-mile scenario. In San Diego, only a portion of the county would be covered by the 10-mile and 50-mile radius. However, a 50-mile event would cut off Interstate 5 and Interstate 15, the major driving routes to San Diego from the northern parts of the state. In addition, the 50-mile radius includes San Diego International Airport, which if closed would effectively cut off travel from international and distant US locations.

Los Angeles County would only be impacted under the 50-mile scenario, and then only 6% of total land area would be impacted, mostly at the southern edge near the Port of Los Angeles, away from most major tourist destinations in that county. We therefore conservatively consider that tourism impacts for LA County would be minimal. We therefore use 100% of the total tourism economic benefit in Orange County and San Diego County as the impact under the 50-mile scenario. We assume a tourism impact of zero for Los Angeles County. These results are shown in Table 3.

Table 3. Tourism economic Impact under 50-mile scenario per year (\$ Billions)

	Economic impact
Los Angeles	N/A
Orange County	\$12.1 / year
San Diego	\$10.8 / year

As with the port closures, the loss in tourism activity is incorporated into the IMPLAN analysis summarized below.

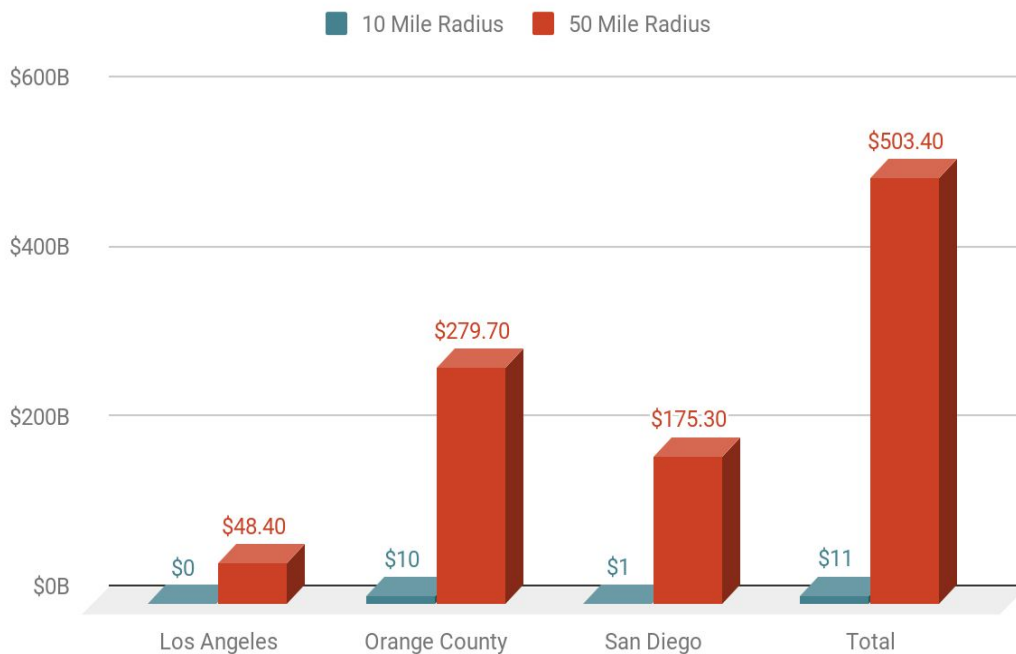
Real Estate Assets

During an extended evacuation due to an emergency event, the loss of value in the stock of real estate in the affected areas could be considered an economic cost. This cost differs from the losses attributable to decreased economic activity, which are measured as annual financial flows. This is especially the case for a 50-year duration event. The impact on business property value is best estimated as the loss of future income measured through the gross regional product (GRP) over an extended period, e.g., 50 years. No commercial, institutional, or government real estate values are included in this report, and only residential real estate values are calculated.¹⁴

¹⁴ Calculating the true market value of commercial and institutional property values *en masse* by zip code was determined to be beyond the resources available for this project and requires increased computing and data base access. (And we still would miss the value of government facilities because they are not assessed for tax purposes and are not readily transacted in the market place.) However as noted in the text, commercial property value loss is implicitly included in the 50-year scenarios because the value of that land is derived entirely as a portion of the net income to the commercial/industrial activities on that land—no activity, no value. We do not have a measure of the portion of that net income that accrues to real estate value versus other agents such as shareholders and proprietors. That analysis is conducted with the IMPLAN regional impact model discussed in the section below. Nevertheless, the loss of real estate value is not considered an economic impact in the standard definition as it is a loss of wealth which may not have a direct effect on economic activity. This is a separate measure that illustrates the asset value that is at risk in this situation.

We estimate the total residential real estate value that is within the 10- and 50-mile radii of the S.O.N.G.S. Interim Spent Fuel Storage Installation based on the average assessed real estate values in each impacted county as a whole. We relied on the Zillow Z-estimate values for 2018¹⁵ as a more reliable metric of actual market values, instead of the county-level assessed real estate values from the California Board of Equalization published tables¹⁶ tables which do not reflect the full escalation in market prices since the passage of Proposition 13 in 1978. The Zillow data provides value by ZIP code, facilitating estimates by distance from the S.O.N.G.S. Interim Spent Fuel Storage Installation. See Table 4 for the breakdown total real estate values by the affected portion of land area. A total evacuation of these zones implies that this value would be lost entirely. For the 10-mile scenario, the value impacted is \$11.2 billion. For the 50-mile radius scenario, it is \$503.4 billion.

Table 4. Estimates of Residential Real Estate Values (\$ Billion)



¹⁵ Zillow Research, op. cit.

¹⁶ Table 10-Net State - and County-Assessed Value of Property Subject to General Property Taxes on the secured and Unsecured Rolls, by County. California State Board of Equalization.
<http://www.boe.ca.gov/annual/table10.htm>

Measure of Potential Regional Economic Impacts

Impacts to a one-mile radius

Estimating the impacts for the area within one-mile of the S.O.N.G.S. facility requires speculative assumptions about responses to closure of the I-5 corridor transportation network. A review of the economic activity data within the ZIP code that encompasses S.O.N.G.S. shows that there would be negligible impacts to the regional economy. The I-5 corridor carries significant amounts of daily traffic and freight, both vehicular and rail, between the Orange and San Diego Counties metropolitan areas,¹⁷ but those regions are also connected via I-15 and other inland routes. While I-5 would be disrupted for a period time, without substantial transportation network modeling it is not possible to estimate the economic consequences with the tools used here.¹⁸

How the state would respond to the closure of I-5 is not known. However, California did learn from its slow response to the 1989 Loma Prieta earthquake that affected the San Francisco Bay Area by quickly jumping to action after the 1994 Northridge earthquake in Los Angeles. The I-10 Santa Monica Freeway collapsed, forcing the rerouting of an average 341,000 vehicles per day. The lost business due to its closure was estimated at \$1 million per day (\$1.7 million in 2018 dollars).¹⁹ The state issued an incentive-based contract that brought repair of the highway within 66 days at a cost of \$30 million.²⁰ We could expect a similar effort if the highway appears to be closed for a prolonged period.

If we assume that the travel cost delays from congestion and rerouting are of similar magnitude per vehicle as experienced after the Northridge earthquake, we can provide a ballpark estimate for a one-year closure of I-5.²¹ Scaling the I-10 daily impacts to the traffic volume on I-5 in 2018

¹⁷ I-5 carries an average of 145,000 vehicles per day on that stretch (Caltrans, "Traffic Census Program," 2016 Data, <http://www.dot.ca.gov/trafficops/census/>, retrieved July 2018.)

¹⁸ Based on the SANDAG Gateway Study, a relatively small amount of freight is hauled via rail between San Diego and Los Angeles. Most freight appears to be hauled via truck, some of which is moved by intermodal with a transfer to or from rail in Los Angeles. (See CDM Smith and San Diego Rail Consulting, "Draft 2015 Freight Gateway Study Update," Prepared for SANDAG, September 2015.) Due to the multiple trucking corridors, we propose the disruption measurement method discussed here as the preferred mode of estimating the economic costs to freight hauling.

¹⁹ Peter Phillips, "Lessons for post-Katrina reconstruction: A high-road vs. low-road recovery," *Economic Policy Institute*, <https://www.epi.org/publication/bp166/>, October 6, 2005.

²⁰ *Ibid.*

²¹ Larry Wesemann, Tijana Hamilton, Steve Tabaie, and Gerald Bare, "Cost-of-Delay Studies for Freeway Closures Caused by Northridge Earthquake," *Transportation Research Record: Journal of the Transportation Research Board*, 1559:67-75, <https://trrjournalonline.trb.org/doi/pdf/10.3141/1559-09>, 1996.

dollars leads to an estimated regional cost of \$730,000 per day. Over a one-year period, that would cost \$266 million.

If the closure was expected to be over a long duration, we expect that (1) alternative routes would be constructed at an unknown cost, and (2) households would relocate to avoid crossing the area on a regular basis. For example, an individual working in Santa Ana who lived in Carlsbad would likely either find a job in San Diego County or move to Orange County. Given that households likely would swap positions, it is not possible to estimate the costs from those relocations.

The Marine base at Camp Pendleton has located all of its built facilities a substantial distance away from S.O.N.G.S., as well as the access points. Except for operations of an unknown nature near the coast, there is no evidence that Camp Pendleton operations would be significantly affected by an accident in the small-scale scenario examined.

Impacts to 10-mile and 50-mile radii

In this case, we are interested in the overall economic activity within individual ZIP codes that fall within the 10- and 50-mile radii of the S.O.N.G.S. facility. We consider this the economic impact of a mass evacuation. IMPLAN provides the total Gross Regional Product for the affected area, total employment, and total personal income for each ZIP code that we identified to fall in the 10- and 50-mile radii. These are aggregated to create the single-year impact of an evacuation, as shown in Table 4 and Table 5 below. The 50-year estimate is a simple present value calculation using the Office of Management and Budget's 30-year nominal interest rate of 2.8%.²²

For the scenario of an accident with an impact zone of 10 miles shown in Table 5, the loss in GRP would be \$6.2 billion and the loss of 53,000 jobs. If the zone was evacuated for 50 years, the net present value of the economic loss would be \$166.3 billion.

²² Circular A-94 Appendix C Revised November 2016. Office of Management and Budget.
<https://www.whitehouse.gov/wp-content/uploads/2017/11/Circular-094C.pdf>

Table 5. IMPLAN Results – 10 Mile Radius (\$ Billions)

Period	Gross Regional Product	Total Personal Income	Total Employment
1 Year	\$6.2	\$7.7	53,000
50 Years	\$166.3	\$205.5	-

For the accident scenario with a wide area of contamination out to 50 miles, as shown in Table 6, the GRP loss increases to \$500 billion. That equals 2.6% of the U.S. Gross Domestic Product or 18.2% of California’s Gross State Product for 2017.²³ Lost employment would amount to 4.5 million jobs or more than 20% of present California employment.²⁴ The net present value loss of \$13.4 trillion over 50 years is equivalent to 70% of U.S. GDP in 2017.

Table 6. IMPLAN Results—50 Mile Radius (\$ Billions)

Period	Gross Regional Product	Total Personal Income	Total Employment
1 Year	\$500.6	\$383.9	4,500,000 ²⁵
50 Years	\$13,400.0	\$10,300.0	-

²³ U.S. Bureau of Economic Analysis, “Regional Data: GDP & Personal Income Mapping,” https://apps.bea.gov/iTable/iTable.cfm?reqid=99&step=1#tabpanel_1_2, retrieved October 2018.

²⁴ California Employment Development Department, “California Profile,” <https://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProfileQSResults.asp?selectedarea=California&selectedindex=0&menuChoice=localAreaPro&state=true&geogArea=0601000000>, retrieved October 2018.

²⁵ San Diego and Orange counties have slightly more than 3 million employed workers. The additional 1.5 million arise from the high concentration of industries in south Los Angeles County, and the extended multiplier effect of closing both the Ports of Los Angeles and Long Beach and nearby large petroleum refineries that supply much of the Western U.S.

Summary

Results for the one-mile, 10-mile, and 50-mile radii are presented below in three tables by impact scenario for a single year and for a 50-year duration. For the one-mile radius, we consider only disruption of the I-5 transportation corridor for a year due to the isolated location of the site, as shown in Table 7. Potential impacts range from \$266 million for the one-mile event to \$500 billion in a single year for an event extending out to 50 miles.

Table 7. Summary of Results – 1 Mile Evacuation Radius (\$ Billions)

	Transportation Disruption
1 Year	\$0.266

The 10-mile and 50-mile (Table 8) radii impacts includes real estate asset value loss, as well as IMPLAN results for the gross regional product measure of annual economic activity. Residential property losses could range from \$11 billion to \$500 billion depending on the evacuation scenario, and the loss in annual gross regional product could range from \$6 billion to \$500 billion. In the 50-mile impact scenario, up to \$13.4 trillion could be at risk over a 50-year time horizon.

Table 8. Summary of Results – 10-mile radius (\$ Billions)

Period	Real Estate Assets	Gross Regional Product
1 year	-	\$6.2
50 years	\$11.2	\$166.3

Table 9. Summary of Results – 50-mile radius (\$ Billions)

Period	Real Estate Assets	Gross Regional Product
1 year	-	\$500.6
50 years	\$503.4	\$13,400.0

This analysis ignores the likely multiplier effects to the rest of the state and nation, particularly related to the potential extended closure of the busiest ports on the West Coast.²⁶

The size of this risk exposure contrasts with the insurance coverage provided to nuclear reactors under the federal Price-Anderson Act. That federal law administered by the NRC offers \$450 million per reactor.²⁷ A second self-insurance pool across all reactors adds another \$13 billion.²⁸ For S.O.N.G.S., this would amount to \$13.4 billion, or just 8% of the projected losses in economic activity as measured by the gross regional product for an event impacting a 10-mile radius over 50 years, and 0.1% for a 50-mile event. Similarly, insurance would cover only 7% of the residential real estate asset losses for a 50-mile event.

²⁶ Analysis of these impacts was beyond the scope of this study due to the large scale and complexity of such an analysis that would require substantially more resources.

²⁷ NRC, "Increase in the Maximum Amount of Primary Nuclear Liability Insurance," *Federal Register*, <https://www.federalregister.gov/documents/2016/12/30/2016-31368/increase-in-the-maximum-amount-of-primary-nuclear-liability-insurance>, December 30, 2016.

²⁸ <https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/nuclear-insurance.html>

Appendix A: Understanding IMPLAN Data

The tool used to estimate the relative size of different economic sectors within the study area for this baseline report was the IMPLAN regional economic model.²⁹

IMPLAN is a widely-accepted economic analysis tool used to value economic sectors. A recent study by the University of California found that IMPLAN produced an accurate estimate of actual job losses in the Central Valley related to the 2009 drought.³⁰

IMPLAN draws from economic census data to compile county-level wage and salary information at the four-digit standard industrial code level. National data is adjusted for the subject region's industrial and trading patterns. Based on this structure, IMPLAN estimates the regional economic impact that would result from a dollar change in the output of local industries delivered to final demand (i.e., to ultimate purchasers, such as consumers outside the region).

More specifically, IMPLAN data provides estimated industry output, wage income, proprietary income, other property income, indirect business taxes, value added, and employment for 440 individual economic sectors.³¹ IMPLAN sectoring is based on the North American Industrial Classification System (NAICS) and the individual sectors can be aggregated to the 2-digit and 3-digit NAICS level. Each measure of economic activity contained in the IMPLAN data set is defined as follows:

Asset Value is composed of the stream of annual economic activities that create the value embedded in the asset. For residential real estate, it is the income that could be generated from renting the asset to a resident, or conversely, the avoided rental payments over a 30 year or longer period. Thus, the loss in real estate asset value is most comparable to the 50-year losses in economic activity presented here. However, since the real estate asset value is comprised of the flow of annual economic activities captured in the IMPLAN results, the real estate asset value is implicitly included in the 50-year scenarios, and should not be added.

²⁹ See <https://implan.com/>

³⁰ Howitt, Richard E., Duncan MacEwan, and Josué Medellín-Azuara. 2011. "Drought, Jobs, and Controversy: Revisiting 2009." *Agricultural and Resource Economics Update*, V. 14 no. 6, Jul/Aug.

³¹ Depending on the region in question, some sectors will show no economic activity. For example, IMPLAN sector 7 – Tobacco Farming – shows no economic activity for most regions outside of the southern United States.

Employment is reported as a single number of jobs (part- and full-time) for each industry. This differs from the full-time equivalent (FTE) measure often reported that adjusts total jobs for the number of hours worked per week (typically 40 hours). The number of jobs reported in IMPLAN typically will not match the number of employed individuals, as some individuals will hold multiple jobs, and some jobs will have multiple people employed over the year. Nevertheless, the IMPLAN value is a close approximation of total employment.

Gross Regional Product (GRP) as an equivalent measure to **value added** which equals the sum of wage income, proprietor income, other property income, and indirect business taxes. It is akin to measures of gross domestic product (GDP), in that it indicates the portion of regional output generated by economic activity occurring *within* the region in question. It is the economic value *added* to the production process beyond purchased inputs such as raw materials, energy or labor from outside the region.

Industry or Economic Output represents the value of an industry's total production, including both value-added and purchased inputs. The IMPLAN data are derived from a number of sources, including U.S. Bureau of Census economic censuses, U.S. Bureau of Economic Analysis output estimates, and the U.S. Bureau of Labor Statistics employment projections. These are aggregated up to estimate the total regional output.

Other Property Income consists of payments for rents, royalties, and dividends. Payments to individuals in the form of rents received on property, royalties from contracts, and dividends paid by corporations are included here as well as corporate profits earned by corporations. The IMPLAN estimates of other property income are derived from U.S. Bureau of Economic Analysis Gross State Product data.

Personal Income is the measure of total household income in a region. It includes all sources of income, not just direct monetary income, such as salaries, wages, self-employment, retirement and interest, which is the metric reported by the U.S. Census Bureau.³² The additional categories included in personal income are equity and asset returns. In regions with greater income asset holdings, such as wealthier and older communities, the average personal income

³² See

<https://implanhelp.zendesk.com/hc/en-us/articles/115009505867-Why-is-Personal-Income-for-My-Region-so-High->

can diverge significantly from the standard federal measure of household income for this reason.

We report many of the most salient measures from the IMPLAN and other data sets in this impact analysis for reference. IMPLAN is used as the primary data set since IMPLAN will be used to assess any potential impacts. The other data is used to calibrate and reconcile the IMPLAN data where needed.

Proprietary Income consists of payments received by self-employed individuals as income. Any income received for payment of self-employed work, as reported on Federal tax forms, is counted as proprietary income. This includes income received by private business owners, doctors, lawyers, and the like.

Taxes on Production & Imports consist of sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments. These taxes do not include nontax payments and subsidies. IMPLAN estimates of indirect business taxes are derived from U.S. Bureau of Economic Analysis data.

Wage Income describes the total payroll costs (including benefits) of each industry in a region. It includes the wages and salaries of workers who are paid by employers, as well as benefits such as health and life insurance, retirement payments, and non-cash compensation.

Exhibit "D"

RADIOLOGICAL

Regulatory Failure

Nuclear Risks to Public Health and Safety Exposed



Charles R. Langley, Executive Director

Nina J. Babiarz, Board Member

Radiological Regulatory Failure

Nuclear Risks to Public Health and Safety Exposed

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How to Read and Use this Chronological Report

Public Watchdogs has unfolded a comprehensive, chronological and interlocked sequence of bureaucratic decisions, lawsuits, and analyses.

Detailed within this report is a recipe for disaster that sets the stage for an unnecessary replication of life-threatening lessons learned from Chernobyl, Three-Mile Island and Fukushima.

Therefore it has been designed to be a resource for a myriad of readers; utility fraud investigators, reporters, public policy experts, elected officials, regulatory law professionals, and concerned citizens. The timeline in Section #1 is especially useful to fraud investigators and reporters.

An initial high-speed overview is available within the first 14 Sections where each section provides a ‘Summary Statement,’ describing the documents in the context of the overall timeline, as well as an ‘Exhibit’ reference showing where each document can be accessed in its entirety. Each ‘Exhibit’ is separated by colored sheets and indexed to the applicable section contents for cross-referencing.

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Foreword

“ The scenarios that lead to this condition [a meltdown] have very low frequencies of occurrence (i.e., on the order of one to tens of times in a million years) ... ”

~ Nuclear Regulatory Commission Memo granting exemptions to off-site emergency planning requirements in the Atomic Energy Act of 1954.¹

Mark Twain said there were three kinds of lies: “Lies, Damned Lies, and Statistics.” The Nuclear Regulatory Commission (NRC) often quotes the probability of an event in terms of “millions of years.” The intent is to suggest that deadly nuclear disasters are “one-in-a million.”

Yet empirical evidence shows that as the world’s nuclear reactors age, meltdowns occur every eleven years on average. From 1979 to 2012 there were three: Three-Mile Island, Chernobyl, and Fukushima. Given that there is major meltdown every 11 years, the number of estimated meltdowns in the next million years is conservatively estimated at 91,000.

This document questions the credibility of the Nuclear Regulatory Commission, which claims that the probability of a nuclear accident at the decommissioned San Onofre Nuclear Generating Station (SONGS) is “low.” However, if you ask an insurance salesperson if you can buy insurance against a nuclear disaster at SONGS, he or she may inform you that the risk is uninsurable and that damages to real estate and health could easily be in the trillions of dollars.

This report tells you why SONGS is a deadly disaster waiting to happen. It isn’t a matter of “if” an accident will happen, but *when*.

The final exhibit in this document explains the risk from the perspective of an independent nuclear physicist. Read it and you’ll learn that the proposed nuclear waste dump at San Onofre contains, at minimum, the radiation equivalent of more than 40 Chernobyl disasters within its 75 thin-walled steel canisters. And because of its design, the probability of a “domino” criticality effect is extremely high. Specifically, if one of the canisters ignites, all of them could ignite, creating a disaster that rivals Fukushima.

Preface, Next Page →

¹ See [Exhibit 16](#), page 43 of a 109-page Nuclear Regulatory Commission Memo on Emergency Planning from Thomas J. Wengert to Tom Palmisano of Southern California Edison exempting Southern California Edison from certain emergency responses. The subject line of the memo reads “SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION - EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS AND RELATED SAFETY EVALUATION”

PREFACE

People who read this document will be alarmed. They should be: It unfolds a chronological series of bureaucratic decisions at every level of government resulting in what we reveal as the greatest single, most dangerous threat to public health and safety in the U.S.A. today.

Southern California Edison has stated that on January 13, 2018 it plans to bury 3.6 million pounds of deadly high-level nuclear waste 108 feet from the water at San Onofre State Beach Park, the site of the utility's failed San Onofre Nuclear Generating Station, (SONGS).

The Independent Spent Fuel Installation or "ISFSI" (otherwise known as the San Onofre Nuclear Waste Dump) will be the largest privately-owned nuclear waste dump in the USA, and the world's biggest beachfront nuclear waste dump on one of the world's most beautiful beaches.

SONGS is among the first and most certainly the largest of all U.S. nuclear installations to go through the decommissioning process with the Nuclear Regulatory Commission, (NRC). As such, the lax regulations at SONGS will serve as a legal, ethical and environmental precedent for every remaining nuclear reactor in the country.

The plutonium in the radioactive waste at SONGS is deadly to all life for at least 250,000 years, but alarmingly, the waste will be stored in thin-walled canisters that are warrantied for a mere 10 to 25 years.² More problematic is the fact that the waste is located in a tsunami zone, next to a major earthquake fault line, and in a location that is easily accessible to terrorists leaving more than 8.5 million people who live within the 50-mile radiation plume zone identified by the NRC completely vulnerable.

After poring through more than 20,000 arcane regulatory documents on nuclear safety, it is the opinion of Public Watchdogs, that a nuclear accident at SONGS is inevitable.³

The sole responsibility of the Nuclear Regulatory Commission is to assure the "common defense and security" of the nation, and the "health and safety of the public." This document demonstrates that the NRC has failed in its mission. It accommodated Edison's requests by granting massive and reckless emergency planning exemptions to basic common sense regulatory requirements for just about everything off the SONGS facility site.

These NRC exemptions are the result of an agency that has been "captured" by the same industry it is chartered to regulate; it isn't that a fox is *in* the henhouse, rather, the fox is *running* the henhouse.

Public Watchdogs has identified some key findings. Paramount are that many of the exemptions shown in this document were granted with such callow disregard for the law and public safety that they may be, in fact, unlawful.⁴

SONGS has the potential to set a national precedent. At this time, at least 100 aging nuclear power plants are operating in the USA, and all of them will eventually be decommissioned.

Finally, just as the winds blow east, so do the national consequences outlined here in the '*Radiological Regulatory Failure: Nuclear Risks to Public Health and Safety Exposed*' at San Onofre.

This story must be told. The public has a right to know.

Executive Summary, Next Page →

² For a copy of the warranty showing the ten and 25-year guarantees, see [Exhibit #22](#)

³ For Public Watchdogs analysis of 100% probability, see, "[Earthquake Bay](#)," [Section 21, Exhibit 21](#), or online at <https://goo.gl/oZEK2u>

⁴ See Section #4, page 15 of this document.



EMERGENCY RESPONSE

EXECUTIVE SUMMARY

A safety philosophy for emergency planning, preparedness and response are all developed to address a worst case scenario.

However, as the documentation within this white paper will clearly demonstrate, almost immediately after the radiation leak in 2012 and the abrupt closure of the generating station in 2013, Southern California Edison (SCE) made application to the Nuclear Regulatory Commission (NRC) for extensive exemptions of emergency planning for everything outside the site of their plant.

The entire application was predicated on SCE's misleading and presumptive best case scenario; that there was a "low likelihood of any credible accident at the plant in its permanently shut down and defueled condition that could result in radiological releases requiring offsite protective measures."

Misleading because, SCR's presumption of low risk regarding radiological releases of a shutdown plant is irrelevant to the never properly assessed separate and real risk of 3.6 million pounds of radioactive nuclear waste about to be buried; on an earthquake fault, in a tsunami zone, in the middle of 8.5 million residents, more millions of unsuspecting visiting tourists, smack beside an interstate highway and the second busiest rail corridor in the United States, 108 feet from the ocean, three feet above the water table, on a fragile bluff threatened by sea level rise and extremely corrosive sea salt air.

The only state California agency legally required by the NRC to be notified for these SCE emergency planning changes and exemption applications, the California Energy Commission (CEC), blasted a comprehensive rebuttal to the NRC. CEC Chair Weisenmiller vehemently opposed SCE's applications with detail and specificity outlining numerous reasons why the exemptions should be denied. The NRC responded about two-weeks later and by granting nearly all of the emergency planning exemptions.

Immediately the NRC then notified the Federal Emergency Management Agency (FEMA) that, *'based on the exemptions granted to SCE, in accordance with the Memorandum of Understanding (MOU) between FEMA and the NRC, the NRC no longer requires the Federal Emergency Management Agency (FEMA) to monitor, review, or report on off-site radiological EP and preparedness activities at SONGS.* Further that, preparedness activities *'will be limited to on-site activities; notification of off-site authorities in event of an emergency classification; requiring only on-site exercises with the opportunity for off-site response organization participation; and only maintaining arrangements for off-site response organizations (i.e., law enforcement, fire and medical services) that may respond to on-site emergencies as identified in the licensee's permanently defueled emergency plan.'*

FEMA then notified its FEMA Region IX, which includes the State of California that, *'The NRC further requested that FEMA notify the appropriate state and local governments that off-site radiological emergency plans and preparedness were no longer required as they relate to the San Onofre Nuclear Generating Station (SONGS).'*

A similar letter was then sent from FEMA Region IX to the California Office of Emergency Services (OES) which then advised both San Diego and Orange counties' Offices of Emergency Services that off-site emergency response was terminated.

Six weeks after SCE secured the NRC's emergency planning exemptions, SCE then secured a spot on the San Diego County Board of Supervisors meeting agenda seeking approval of a MOU regarding the off-site emergency planning fund. Another item on that same agenda was for the San Diego County Office of Emergency Services to ratify acceptance of a target donation to support the county's emergency preparedness.

The purpose of the MOU entered into by SCE, Orange and San Diego Counties and the cities of San Clemente, San Juan Capistrano and Dana Point was 'to document the mutual agreement of all signatory parties to continue collaborative and cooperative management of the radiological emergency preparedness, planning, response and recovery activities related to the San Onofre Nuclear Generating Station (SONGS) and to outline a cooperative funding agreement between the signatory local governments and SCE for such activities.'

Although recusing himself from voting on the September 15, 2015 San Diego County Board of Supervisors agenda item advocating for the removal and relocation of the SONGS spent nuclear fuel from the San Diego region, Supervisor Greg Cox proceeded to vote in the affirmative for the California Coastal Commission (CCC) vote on October 6, 2015 to approve a permit for SCE to bury millions of pounds of radioactive nuclear waste at San Onofre State Beach Park.

The CCC permit granted, now in legal appeal for revocation by the law firm of Aguirre/Severson on behalf of their plaintiff's, Patricia Borchmann and Citizens Oversight, is about to go into secret, closed door negotiations. Regardless of the outcome of these negotiations, it is imperative that the public be fully aware of the extreme danger posed by SCE's reckless abandonment its responsibility to a regional nuclear emergency response.

This white paper begs the question: **If the risk is so low of a radiological release, why did SCE need any emergency planning exemptions?**

Section One, Next Page →



SECTION 1

Emergency Exemptions; Timeline and Examples

Section Summary Statement:

The chronological timeline of when the actions of regulatory failure occurred is as revealing as how it transpired.

This section shows a timeline for the emergency exemptions and gives examples in a table format of some of the most egregious exemptions that put public health and safety at risk.

Timeline and Examples of Exemptions next page →

Regulatory Failure Timeline: Emergency Exemptions

This table shows how in two days, the Nuclear Regulatory Commission (NRC), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) terminated legal requirements for public safety enshrined in the 1954 Atomic Energy Act. The exemptions mean that Southern California Edison will no longer provide help required under the Atomic Energy Act to local first responders in the event of a nuclear disaster where radiation travels beyond the perimeter of the San Onofre Nuclear Generating Station (SONGS).

Date	Event
12/17/2014	Edison Files for Application. Southern California Edison's Tom Palmisano, files an application for Emergency Planning Modifications (exemptions) to the Nuclear Regulatory Commission based on a permanently shut down, defueled, plant condition. The modifications violate the provisions of the Atomic Energy Act of 1954.
5/14/2014	California Energy Commission Protests. California Energy Commission (CEC) Chair Weisenmiller responds with a strong letter of opposition urging denial of the application.
6/4/2015	NRC ignores safety concerns: Exemptions are approved. Southern California Edison's Tom Palmisano, receives approval from the Nuclear Regulatory Commission for "emergency planning modifications" based on the NRC's interpretation of the "underlying intent" of the Atomic Energy Act of 1954.
6/5/2015	NRC formally changes to the Emergency Plan. Southern California Edison's Tom Palmisano receives a blanket waiver from NRC from the majority of safety requirements in the Atomic Energy act of 1954. The exemptions that changed this plan are based on a "permanently defueled plant condition." As a result, Edison is no longer responsible for the effects of deadly radiation outside the plant perimeter.
6/5/2015	Department of Homeland Security ordered to stand down. NRC notifies U.S. Department of Homeland Security (HSA) that the Federal Emergency Management Agency (FEMA) "is no longer required to review, monitor, and report activities associated with off-site radiological emergency planning and preparedness as they relate to SONGS."
6/5/2015	DHS Orders FEMA to stand down. NRC further requests FEMA Region IX to notify state & local governments that Edison's obligation to provide off-site radiological emergency planning and preparedness as they relate to SONGS are no longer required.
6/30/2015	Homeland Security (HSA) orders FEMA to notify California Governor. HSA FEMA Region IX notifies CA Governor Office Emergency Services that FEMA is no longer budgeted to respond to an offsite radiation emergency. The letter is undated but is stamped as received on 6-30-2015.
7/21/2015	FEMA notifies California Office of Emergency Services. HSA FEMA Region IX notifies CA Governor Office Emergency Services of same. The letter is undated but is stamped as received on 7-21-2015.








48
Hours

Tables of Questionable Exemptions, next page →

SONGS Emergency Exemptions

A randomly selected list of questionable safety planning and emergency response exemptions granted Southern California Edison by ignoring provisions within the Atomic Energy Act of 1954 for nuclear reactors.

Description of Unlawful Exemption	✗ or ✓	Details
<p>Emergency Planning Zones – Is Edison maintaining the ten mile “EPZ” as required under the Code of Federal Regulations?</p> <p>Text of law forbidding exemption: [CFR 10.47(b)(1)]</p>	✗	<p>No. Emergency planning for a ten mile <i>radiation plume zone</i> is no longer necessary.</p>
<p>Maintaining an Emergency Plan - Is there a comprehensive Emergency Plan for a major radioactive release?</p> <p>Text of law forbidding this exemption: [CFR 50.47(b)(1) and 50.47(b)(4)]</p>	✗	<p>No. Edison is not required to do any emergency planning or preparedness outside the SONGS perimeter</p>
<p>Emergency Operations Facility: Is Edison maintaining an EOF as required?</p> <p>Text of law forbidding this exemption: [CFR 50.47 (b) (3)]</p>	✗	<p>No. The Emergency Operations Facility has been shut down</p>
<p>Evacuation Plans: Is there an evacuation plan as required by the Atomic Energy Act?</p> <p>Text of law forbidding this exemption: [CFR 10.57 (b) (10)]</p>	✗	<p>No. This is now a local responsibility</p>
<p>Does Edison have the ability to estimate a lethal radiation dose? Is there a system in place at Edison to estimate the lethality and health issues of radiation released during the accident?</p> <p>Text of law forbidding this exemption: [10 CFR part 50, Appendix E, Sec. IV. A.4]</p>	✗	<p>No. Requirements to estimate lethality of radiation leak are gone.</p>

Description of Unlawful Exemption	 or 	Details
<p>Can Edison officials remain anonymous?</p> <p>Text of law forbidding this exemption: [See requirement for organizational chart, 10 CFR part 50, Appendix E, Sec IV. A.3]</p>		<p>YES!</p> <p>Headquarters personnel may remain anonymous</p>
<p>Is there a responsible executive(s) in the event of an emergency?</p> <p>Is there an organizational chart that identifies responsible executives during a nuclear emergency at SONGS?</p> <p>Text of law forbidding this exemption: [10 CFR part 50, Appendix E, Sec IV. A.3]</p>		<p>No. Charts showing chain of command are no longer necessary</p>
<p>TERRORIST ATTACK: Is Edison prepared to work with local police?</p> <p>Text of law forbidding this exemption: [CFR part 50, Appendix E, Section IV. A.7]</p>		<p>No ... not anymore ...</p>
<p>Does Edison have a LIST of Local Emergency Officials it must notify in a disaster?</p> <p>Text of law forbidding this exemption: [CFR part 50, Appendix E, Section IV. D1]</p>		<p>No. Maintaining lists of local First Responders is no longer required</p>
<p>Will the storage containers last millions of years?</p> <p>The hot radioactive waste at San Onofre is deadly to most life forms for millions of years.</p>	Not Applicable	<p>No. Although the waste in the canisters is toxic for millions of years, the steel canisters and their concrete enclosures are only guaranteed to last ten to 25 years.</p>
<p>Will FEMA respond to a radiation disaster at SONGS?</p>		<p>No, All funding for an off-site FEMA response has been terminated at the request of Edison.</p>

Description of Unlawful Exemption	✗ or ✓	Details
Will California Office of Emergency Services be ready to respond?	✗	No , all offsite funding is eliminated thanks to Edison.
Is the public notified Immediately as required by law in event of a disaster?	✗	No . Edison is not required to notify the public within 15 minutes of a radiation release.
Will SONGS Air-Raid siren be used in a nuclear radiation emergency?	Not Applicable	The siren is now silenced by funding cuts

Section 2, next page →



SECTION 2

SCE requests NRC Emergency Planning Exemptions

Section Summary Statement:

Shortly after the radiation leak in 2012 and the 2013 plant closure, Southern California Edison (SCE) started lobbying NRC staffers for emergency planning (EP) exemptions for everything off the San Onofre site.

You'll see here that NRC staff seeks the NRC Commission approval to proceed with the process of granting those exemptions which eliminate NRC's requirements for offsite radiological emergency plans.

[SEE EXHIBIT: #16](#)

Section 3, next page →



SECTION 3

CEC Chair Objects to NRC granting SCE's Emergency Planning Exemption

Section Summary Statement:

As subsequent documentation will show, proposed changes to SCE's Emergency Plan (EP) required that the NRC regulations notify the California Energy Commission (CEC) of the proposed revisions.

Upon receipt of the NRC's notification of the specific changes to the EP as proposed by SCE, CEC Chair Weisenmiller expressed concerns that these changes would 'unreasonably diminish the current safeguards necessary to ensure the public health and safety.' He also purported that, the NRC's failure to consider circumstances unique to California such as seismic and tsunami, would pose undue risk to the public's health and safety.

Approximately two weeks later the NRC granted virtually every change to SCE's EP anyway...

See [EXHIBIT # 16a](#)

Section 4, Next page →



SECTION 4

NRC grants unlawful Emergency Planning Exemptions



Section Summary Statement:

The silence of the Atomic Energy Act

It is the opinion of the authors that the safety planning and emergency response exemptions granted to the Southern California Edison monopoly are unlawful and unreasonable.

On June 5 of 2015, the Nuclear Regulatory Commission (NRC) granted sweeping exemptions from the safety requirements mandated by the Atomic Energy Act of 1954 on the grounds that the Atomic Energy Act of 1954 is “silent” on the issue of decommissioned nuclear reactors.

The NRC has interpreted this “silence” with recklessly permissive waivers from common-sense safety provisions. The resulting exemptions are little more than “get out of jail free” loopholes for the Southern California Edison monopoly in the event that things go horribly wrong.

But in this case, silence is not golden: It is deadly.

See [EXHIBIT: 16b](#)

More →

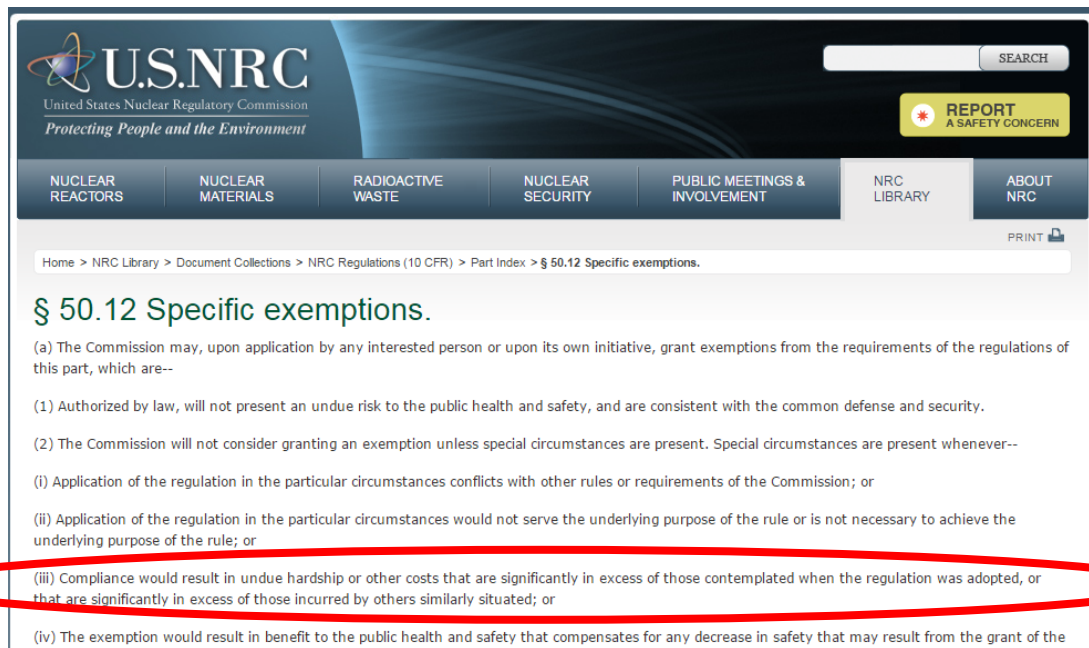
Loophole #1: The “silence” of the law is interpreted to mean the law can be ignored

To address the alleged “silence” of Federal law, the NRC claims that the law must be *interpreted* in light of the “underlying purpose” and original intent. In the case of SONGS, the NRC granted sweeping blanket exceptions to common-sense safety features, such as a sirens and an emergency alert system for notifying the public of a nuclear disasters. But in a regulatory sleight-of-hand, the NRC has ruled that under CFR 50.12, that numerous precautions are no longer necessary.

Code of Federal Regulation [§ 50.12 Specific Exemptions.](#)

CFR § 50.12 is an NRC “catch-all” loophole that enables the owners of nuclear facilities to violate almost every provision for public safety in the Atomic Energy Act of 1954. The biggest 50.12 loophole is Section (a)(iii), which argues that the NRC is not required to enforce the law in the event that it will cause “undue hardships or other costs.” This logic is like telling tax cheaters they don’t have to pay or do prison time if they can show “hardship.” The IRS would never allow this, but NRC does.

In addition, the NRC argues that exemptions granted Southern California Edison are legitimate because they serve the “underlying purpose” of the Atomic Energy Act, which, is concerned with “...the common defense and security and with the *health and safety of the public*” (emphasis ours).



The screenshot shows the U.S. Nuclear Regulatory Commission website. The header includes the NRC logo and navigation links for Nuclear Reactors, Nuclear Materials, Radioactive Waste, Nuclear Security, Public Meetings & Involvement, NRC Library, and About NRC. A search bar and a 'REPORT A SAFETY CONCERN' button are also visible. The main content area displays the text of CFR 50.12(a)(iii), which is circled in red. The text reads: "(iii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated; or".

Section 50.12(a)(iii): Federal regulators allow Southern California Edison to violate the Code of Federal Regulations if compliance causes “undue hardship or other costs.” [Get full text of 50.12 here.](#)

More →

Loophole #2: For security purposes, SONGS has been reclassified as a “Medical Research Facility”

Even though the beachfront nuclear waste dump at SONGS contains the radiation equivalent of more than 700 nuclear warheads, and although the plutonium in the casks is deadly for 250,000 years, the new dump (called an ISFSI, or Independent Spent Fuel Storage Installation) has been reclassified by the NRC as requiring the same security as a “medical research facility.” Under the new NRC classification, SONGS does not require the vigilant security measures associated with an operating nuclear reactor.

10 CFR Part 50, Appendix E, Section IV 10 CFR Part 50, Appendix E, Section IV.1.	NRC Staff Basis for Exemption
The NRC is granting exemption from portions of the rule language that would otherwise require onsite protective actions during hostile action.	The EP rule published in the <i>Federal Register</i> (76 FR 72560, November 23, 2011) amended certain requirements in 10 CFR Part 50. Among the changes, the definition of “hostile action” was added as an act directed toward a nuclear power plant or its personnel. This definition is based on the definition of “hostile action” provided in NRC Bulletin 2005-02, “Emergency Preparedness and Response Actions for Security-Based Events,” dated July 18, 2005 (ADAMS Accession No. ML051740058). NRC Bulletin 2005-02 is not applicable to nuclear power reactors that have permanently ceased operations and have certified that fuel has been removed from the reactor vessel. SCE certified that it had permanently ceased operations at SONGS Units 2 and 3 and that all fuel at those units had been removed from the reactor vessels. Therefore, the enhancements for hostile actions required by the 2011 EP Final Rule are not necessary for SONGS in its permanently shut down and defueled status. Additionally, the NRC excluded non-power reactors from the definition of “hostile action” at the time of the 2011 rulemaking because, as defined in 10 CFR 50.2, a non-power reactor is not considered a nuclear power reactor and a regulatory basis had not been developed to assess the inclusion of non-power reactors in the definition of “hostile action.” Similarly, a decommissioning power reactor or ISFSI is not a “nuclear reactor” as defined in the NRC’s regulations. Like a non-power reactor, a decommissioning power reactor also has a lower likelihood of a release requiring protective measures than does an operating reactor. Although this analysis provides a justification for exempting SONGS from “hostile action” related requirements, some EP requirements for security-based events are maintained. The classification of security-based events, notification of offsite authorities and coordination with offsite agencies under a CEMP concept are still required.

View the full text of this exemption where it jumps from page 22 to page 23 of the pdf in [Exhibit 16b](#).

Sleight of hand: How the NRC downgraded SONGS

First, the NRC reclassified SONGS as a “non-power reactor” under Section [10.CFR 50.2 “Definitions](#),” which defines a non-power reactor as “a research or test reactor licensed under §§ 50.21(c)...”

However, a careful review of [Section 50.21](#) shows that non-power reactors are also classified as “medical therapy and research and development facilities.” In addition, 50.21(c) also cites [Section 31](#) of the Atomic Energy Act, which is defined as “Research Assistance.”

The bottom line is that the NRC, has intentionally downgraded the security requirements of a failed non-operating nuclear reactor to that of a medical research facility or “non-power reactor.” The reclassification drastically minimizes the emergency response obligations of Southern California Edison.

But unlike San Onofre, a medical research facility cannot melt down, making the reclassification as a “medical research facility” specious.

Loophole #3: Terrorism and sabotage threats are largely ignored in safety planning

According to the NRC, SONGS poses no more risk to the public’s health than a medical research facility because “... the risk of sabotage is not considered in any standard reactor risk analyses ...”⁵

This cavalier view of terrorist threats is also expressed in the same memo, on pages 74 through 76, where the NRC states “the staff concludes that a decommissioning power reactor is not a facility that falls within the traditional definition of “hostile action.”⁶

In other words, the majority of requirements for protecting the largest privately owned⁷ high-level nuclear waste dump in the United States from terrorists have been terminated.

More →

⁵ See Wengert Memo to Tom Palmisano, [Exhibit 16b](#), Page 44 of pdf, Enclosure #2, page 6.

⁶ See Wengert memo to Tom Palmisano, [Exhibit 16b](#) pages 74 through 76, paragraph 1, page 74 of memo.

⁷ See Public Watchdogs’ List of [Decommissioned Nuclear Power Plants](#).

Loophole #4: No requirement to identify government officials with the power to order evacuations or respond to terrorist attacks

<p>10 CFR Part 50, Appendix E, Section IV.A.7.</p> <p>The NRC is granting exemption from portions of the rule language that would otherwise require a description of the assistance expected from State, local, and Federal agencies for coping with a hostile action.</p>	<p>Refer to basis for 10 CFR Part 50, Appendix E, Section IV.1.</p>
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From Memo "Wengert to Palmisano," [Exhibit 16b Enc 1](#), page 23, or page 24 of pdf.

Loophole #5: All off-site emergency response to a nuclear disaster will be handled by local fire and police departments

10 CFR Part 50, Appendix E, Section IV	NRC Staff Basis for Exemption
<p>10 CFR Part 50, Appendix E, Section IV.A.8.</p> <p>The NRC is granting exemption from the requirement to identify the State and local officials for ordering protective actions and evacuations.</p>	<p>Offsite emergency measures are limited to support provided by local police, fire departments, and ambulance and hospital services, as appropriate. Due to the low probability of DBAs or other credible events to exceed the EPA PAGs, protective actions such as evacuation should not be required, but could be implemented at the discretion of offsite authorities using a CEMP.</p> <p>Also refer to basis for 10 CFR 50.47(b)(10).</p>

From Memo "Wengert to Palmisano," [Exhibit 16b Enc #1](#), page 24

Loophole #6: Requirements for on-site response to a terrorist attack are waived.

10 CFR Part 50, Appendix E, Section IV	NRC Staff Basis for Exemption
<p>10 CFR Part 50, Appendix E, Section IV.1.</p> <p>The NRC is granting exemption from portions of the rule language that would otherwise require onsite protective actions during hostile action.</p>	<p>The EP rule published in the <i>Federal Register</i> (76 FR 72560; November 23, 2011) amended certain requirements in 10 CFR Part 50. Among the changes, the definition of "hostile action" was added as an act directed toward a nuclear power plant or its personnel. This definition is based on the definition of "hostile action" provided in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005 (ADAMS Accession No. ML051740058). NRC Bulletin 2005-02</p>

More →

From Memo "Wengert to Palmisano," [Exhibit 16b, Enc 2](#), page 38/39 or page 76 and 77 of pdf. For the table shown above, see pages 20 and 21 of the document, or pages 22 and 23 of pdf.

Loophole #7: Three workers will guard and maintain the world's largest and most dangerous beachfront nuclear waste dump (ISFSI).

Table B-1: ERO Minimum Staffing Requirements

Functional Area	Major Tasks	Emergency Positions	Shift Staffing	Augmented Staffing
1. Plant Operations, Assessment of Operational and Mitigation Aspects	Command Center Staff	Shift Manager ** Certified Operator **	1 1	
2. Emergency Direction and Control	Command and Control ERO Coordination	Shift Manager (Emergency Director) ERO Coordinator	1(a)	1
3. Notification & Communication	Notification of: Licenses Local / State Federal	Shift Manager	1(a)	
4. Radiological Assessment	Supervision	Radiation Protection Coordinator		1
	Dose Assessment	Shift Manager or Shift RP Technician	1(a)	
	Onsite Surveys within the EAB	Shift RP Technician **	1	(c)
	Offsite Surveys beyond the EAB	RP Support		(c)(d)
5. Plant System Engineering, Repair, and Corrective Actions	Repair and Corrective Actions	Chemistry Support		(c)
		Technical Coordinator		(b)
		Certified Operator Support Personnel	1(a)	(c)
6. In-Plant Protective Actions	Radiation Protection	Shift RP Technician	1(a)	
7. Fire Fighting	--	Offsite fire fighting resources		(e)
8. 1st Aid and Rescue	--	Shift Personnel and Offsite fire resources		(e)
9. Site Access Control and Accountability	Security & Accountability	Security Personnel		(f)
TOTAL:			3	2

An ISFSI is an Independent Spent Fuel Storage Installation, which is industry lingo for “High-Level Nuclear Waste Dump.” This Edison manual shows that in the event of a terrorist attack, earthquake, tsunami, or other incident resulting in a disaster, only three people will be available on site to respond.

The table at left is from an internal SCE document, titled *Permanently Defueled Independent Spent Fuel Storage Installation Plan*. It shows that the federally required staff for guarding and maintaining the world's largest beachfront nuclear waste dump is limited to only three people per shift (nine workers total for each 24-hour period).

Only three employees per shift will manage security and safety for the world's largest beachfront nuclear waste dump. See page 18 of pdf of Southern California Edison's internal [Permanently Defueled Emergency PLAN-1 Revision.2 Issued 03/30/2016](#). Exhibit 20, Part II Planning Standards and Criteria, B SONGS EMERGENCY, B-5 Emergency Response Organization.

Only three people will monitor the USA's largest privately-owned radioactive nuclear waste dump at any given time.

Section 5 →



SECTION 5

NRC grants SCE Changes to Emergency Plan

Section Summary Statement:

Within 24 hours of granting SCE a swath of emergency planning exemptions, the NRC immediately issued changes to SCE's Emergency Plan reflecting those very exemptions.

Once again California Energy Commission (CEC) Chair Weisenmiller [vehemently opposed](#) the proposed changes to SCE's Emergency Plan to no avail.

A summary of Weisenmiller's opposing comments to the NRC are provided on the next page.

Conversely to Weisenmiller's opposition, the NRC staff concluded that *'the revised SONGS emergency plan provided (1) an adequate basis for finding an acceptable state of emergency preparedness, and (2) reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency based on the permanently shutdown and defueled condition of the SONGS facility.'*

See [EXHIBIT: #16c](#) – specifically Section 4.0 entitled 'State Consultation'; Pages 23-30 of document, or page 31 of pdf.

Next Page – A summary of Chair Weisenmiller's objections →

Summary of California Energy Commission objections to NRC Exemptions

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendments. The State official provided detailed comments in a letter dated May 14, 2015 (Reference 15). The following discussion addresses the State's comments, which are quoted from the body of the State's letter:

State Comment 1: But the NRC fails to consider circumstances unique to California's coastal nuclear facilities: risks to public health and safety associated with and exacerbated by the state's seismicity and risk of tsunami.

State Comment 2: The [Permanently Defueled Emergency Plan] license amendment request would decrease the safeguards to public health and safety in the event of a credible and foreseeable accident scenario at SONGS.

State Comment 3: [...] the requested exemptions outlined above would eliminate the breadth of SCE's obligations to keep the State emergency response organizations and the general public informed in the event of an emergency.

State Comment 4: The exemptions would further reduce the State's ability to adequately and effectively respond to an emergency by discontinuing the federal requirement for support to State planning and monitoring activities, placing the health and safety of California citizens in jeopardy in the event of a plant emergency.

State Comment 5: [...] SCE's license amendment request does not even contain implementing procedures, preventing the Energy Commission from understanding what changes it would need to make to its emergency response protocols if the exemptions and license amendment request are approved.

State Comment 6: In sum, the requested exemptions would eliminate substantial emergency plan requirements contained in 10 CFR Part 50, Appendix E, which in turn would necessarily reduce the effectiveness of any emergency plan going forward.

State Comment 7: Taken together, the license amendment requests would significantly reduce if not eliminate, notification procedures currently required by 10 CFR Part 50, Appendix E.

State Comment 8: For instance, the exemptions request proposes that the procedures requiring notification and interaction with State and local agencies as set forth in Part 50, Appendix E be eliminated almost in their entirety, based on the erroneous assumption that SONGS - in its present state with spent fuel in the cooling pool - be viewed as an ISFSI and/or MRS facility.

State Comment 9: [...] the license amendment request fails to adequately analyze a number of credible scenarios whereby public health and safety may be put at risk, including from a seismic event or tsunami, and from the spent fuel rods maintained in the spent fuel cooling pool.

State Comment 10: The license amendment request, if granted, would eliminate the federal requirement that SCE take responsibility for planning a response to a spent fuel pool emergency that may last more than 10 hours. This problem would be compounded by the lack of clear notification procedures to the State otherwise required by Part 50, Appendix E.

State Comment 11: [...] while spent fuel remains stored on-site in wet-cooling pools, the license amendment requests would likely result in a clear reduction in emergency plan effectiveness that cannot meet the requirements of 10 CFR § 50.54(q)(4) and companion Part 50, Appendix E emergency plan requirements.

Get the letter with these objections ([Exhibit 16a](#))

Section 6 →



SECTION 6

NRC notifies FEMA no longer required for Radiological Emergency Planning

Section Summary Statement:

Once the NRC granted Edison their emergency planning (EP) exemptions and then the changes to Edison's emergency plans, a rapid-fire series of correspondence was then launched. The five back to back letters effectively gutted federal and state level assistance.

In the first letter the NRC notified FEMA's Director of Technological Emergency Management Agency that, *'based on the exemptions granted SCE, the NRC no longer required FEMA to monitor, review or report on off-site radiological EP and preparedness activities at SONGS.'*

Ultimately the five-letter blitzkrieg eliminated the ability of local emergency responders to call for help at the state and federal level.

See [Exhibit: 16d](#)

Section 7 →



SECTION 7

NRC notifies FEMA Region IX of Emergency Planning Exemptions

Section Summary Statement:

In the next letter, the U.S. Department of Homeland Security, FEMA in D.C. orders the regional Acting Administrator of FEMA to *'notify appropriate State and local government officials that FEMA will no longer review, evaluate and monitor off-site radiological emergency planning and preparedness activities surrounding the San Onofre site in accordance with 44 C.F.R. Part 350 (i.e. review and approval of state and local radiological emergency plans and preparedness) after June 4, 2015.'*

See [EXHIBIT: #17](#)

Section 8 →



SECTION 8

FEMA notifies Brown & Office of Emergency Services that Radiological Emergency Preparedness (REP) Program is discontinued

Section Summary Statement:

The final two letters terminated vital public services.

The letter to Governor Jerry Brown from FEMA in D.C., notified Brown that FEMA will discontinue off-site Radiological Emergency Preparedness (REP) activities. The letter further stated that FEMA *'will no longer review, monitor, and report activities associated with offsite REP.'*

The second, a letter from the regional FEMA office, formally notifies the California Governor's Office of Emergency Services (OES) *'that FEMA will no longer review, approve and evaluate state and local jurisdictions' radiological emergency planning and preparedness activities as they relate to SONGS.'*

It's also worth noting is that FEMA no longer has authority to fund its Radiological Emergency Preparedness (REP) Program as it relates to SONGS.

See EXHIBIT: [17a](#) & [17b](#)

Section 9 →



SECTION 9

San Diego County Board of Supervisors; SCE MOU, DoE and NRC Correspondence

Section Summary Statement:

These documents raise significant questions about Southern California Edison's promises to the County Board of Supervisors that it would maintain offsite emergency response capability through 2019. Especially disturbing is the fourth document, *Memorandum of Understanding for Support of Radiological Planning and Response*, which shifts all training and emergency response capability to local governments.

Edison said it would maintain full off-site capabilities through the year 2019 at a County Board of Supervisors meeting on July 21, 2015. Yet other documents show that the corporation applied for -- and received -- sweeping emergency response exemptions from the NRC as of June 5 of 2015.⁸ As a result of those sweeping exemptions, the Chair of the California Energy Commission⁹ determined that Edison was no longer required to:

- Promptly inform the public and State emergency responders in the event of a nuclear emergency
- Fund State emergency response capabilities
- Be responsible for maintaining response capability for a radiation disaster that lasts longer than 10-hours such as spent fuel pool fires, earthquakes, and tsunamis.

Did Edison deceive the County of San Diego? In the July 21, 2015 Board of Supervisors agenda, Edison is quoted as: *'[expressing] its intent to remain fully compliant with regal requirements for an operating power plant and to continue paying for SONGS offsite emergency planning through calendar year 2019, despite SONGS no longer being in operation and no longer having a regulatory requirement from the Nuclear Regulatory Commission to do so.'*

Edison made these claims knowing that NRC had already exempted it from off-site emergency planning responsibility on June 5th.

See EXHIBIT: [18](#), and [18a](#), and [18b](#)

Section 10 →

⁸ See Section 4, page 15 of this Document "NRC Grants Unlawful Emergency Exemptions" memo from Wengert to Palmisano.

⁹ See Letter from [California Energy Commission Chair to NRC](#) in Section 3 of this document.



SECTION 10

SCE's CA Coastal Commission application to construct & operate ISFSI

Section Summary Statement:

On October 6, 2015, the California Coastal Commission granted Edison a permit to bury 3.6 million pounds of nuclear waste at San Onofre State Beach Park under 'Special Conditions.' Special Condition #2 requires Edison to implement an Aging Management Program (AMP); a way of monitoring the canisters once they are buried. Underground monitoring is needed to:

- a. evaluate environmental conditions
- b. inspect cask for structural integrity
- c. assure their performance delivers as designed
- d. allow safe transport of the nuclear fuel out of San Diego County

But Edison has no way to meet Special Condition #2. They admit in their own application that:

- a. The monitoring technology not available
- b. Nor is it expected within the next 20 years
- c. The technology has never been previously demonstrated
- d. It's unknown when the monitoring techniques, tools & standards will be available

Edison's inability to develop/deliver 'Special Condition #2' required monitoring will have consequences:

- a. Makes SONGS a permanent nuclear waste storage site
- b. Increased risk to public safety
- c. Adverse effect to marine life

SEE [EXHIBIT: #19](#)

Section 11, Next page →



SECTION 11

Aguirre/Severson Superior Court Case; Citizens Oversight vs. CA Coastal Commission/SCE

Section Summary Statement:

Reasons why the Coastal Commission should not have rushed to grant Edison permission to store its nuclear waste at the location of the decommissioned San Onofre plant are referenced in further detail within Aguirre/Severson Superior Court lawsuit (Citizens Oversight/Patricia Borchmann vs. CA Coastal Commission and SCE).

See [Exhibit #19a](#), Page 13, section #35

Section 12, next page →



SECTION 12

SCE's Permanently Defueled Emergency Plan (PDEP)

Section Summary Statement:

'The purpose of this Permanently Defueled Emergency Plan (PDEP) is to assure an adequate level of preparedness by which to cope with a spectrum of emergencies that could be postulated to occur, including means to minimize radiation exposure to plant personnel.

The PDEP describes the station's plan for responding to emergencies that may arise at the station while in a permanently shutdown and defueled configuration.

See [EXHIBIT: #20](#)

Section 13, Next Page →



SECTION 13

Canister Manufacturer's Warranty

Section Summary Statement:

The nuclear waste inside the Holtech Hi-Storm canisters is deadly for 250,000 years, yet the canisters are only guaranteed to last between 10 and 25 years. See attached Contractor's Warranties.

[See EXHIBIT: 22](#)

Section 14, next page →



SECTION 14

FREY: “40 times worse than Chernobyl”

Section Summary Statement:

Nuclear Physicist Paul Frey has concluded that a nuclear disaster at San Onofre could be 40 times worse than Chernobyl. Frey prepared a visual series outlining the potential consequences as a result of San Onofre Spent Nuclear Fuel Canister Fires using Chernobyl damages and fallout patterns.

Frey outlines how, after an earthquake or tsunami, overheated canisters may cause a nuclear fire.

Frey provides visual depictions, both before and after, a San Onofre nuclear spent fuel canister fire.

[See Exhibit 23](#)

Next Section: Exhibits with hyperlinks →



SECTION 15

EXHIBITS

16. **12/17/14: Southern California Edison’s (SCE) NRC Application for Emergency Planning Exemptions**
 - a. **5-14-15: CA Energy Commission (CEC) objects to NRC approval of reckless proposal;** San Onofre Nuclear Generating Station (SONGS) - License Amendments Regarding the Revision to Emergency Plan and Emergency Action Levels
 - b. **6-4-15: NRC approves exhaustive list of SCE emergency planning & public notification exemptions:** SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, & 3 & INDEPENDENT SPENT FUEL STORAGE INSTALLATION – EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS AND RELATED SAFETY EVALUATION
 - c. **6-5-15: After Edison got exemptions NRC changed the Emergency Plan language:** SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, & 3 & INDEPENDENT SPENT FUEL STORAGE INSTALLATION CHANGES & AMENDMENTS to EMERGENCY PLAN
 - d. **6-5-15: NRC tells FEMA it is no longer required:** NRC notifies FEMA their preparedness response activities are no longer required
17. **6-18-15: FEMA D.C. orders Regional FEMA to stand down.** FEMA Acting Assistant Administrator, National Preparedness Directorate sends letter to Acting Regional Administrator, FEMA Region IX; FEMA will discontinue evaluation of offsite emergency planning and preparedness activities
 - a. **6-25-15: FEMA in D.C. next notifies Gov. Brown** that its Radiological Emergency Preparedness (REP) Program in California is discontinued
 - b. **6-30-15: Regional FEMA then notifies California Office of Emergency Services** that Radiological Emergency Preparedness (REP) Program is discontinued
18. **7-21-15: San Diego County cuts deal without considering consequences.** COUNTY OF SAN DIEGO BOARD OF SUPERVISORS REGULAR MEETING AGENDA; OFFICE OF EMERGENCY SERVICES and SCE OFFSITE PLANNING EMERGENCY FUNDS
 - a. **9-22-15: San Diego County urges U.S. Department of Energy (DOE) to remove waste**
 - b. **10-16-15: San Diego County signs Memorandum of Understanding** (MOU) between Interjurisdictional Planning Committee (IPC) for Support of Radiological Emergency Planning and Response
19. **10-6-15 CA Coastal Commission (CCC) violates its own mission statement and special conditions** CCC approves SCE’s application to construct and operate an Independent Spent Fuel Storage Installation (ISFSI) to store spent nuclear fuel in violation of its own ‘Special Conditions’
 - a. **Aguirre/Severson Superior Court Case;** Citizens Oversight vs. CA Coastal Comm./SCE
20. **3-30-16: SCE’s Internal Emergency Procedures Manual minimizes “worst case scenarios.”** SCE’s Permanently Defueled Emergency Plan (PDEP) Revisions
21. **2-16-17: Earthquake Bay;** Why a nuclear event at San Onofre State Beach Park is **unavoidable**
22. **5-6-15:** SCE’s Canister Contractor Warranties
23. **5-6-17:** Paul Frey, Physicist, ‘After San Onofre Spent Fuel Canister Fires’, PowerPoint