

Comments on the  
California State Lands Commission's  
Draft Environmental Impact Report  
for Decommissioning the San Onofre Nuclear Plant  
by  
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**Introduction**

At the core of environmental review are two key requirements: a thorough analysis of the full range of potential environmental impacts from the proposed action, and a hard look at alternatives. Furthermore, there is one critical failing that Environmental Impact Reports (EIRs) must avoid: the artificial segmentation of actions and their environmental consequences.

In light of those central principles, the Draft EIR (DEIR) for the decommissioning of the San Onofre Nuclear Generating Station (SONGS) has serious defects. They should be corrected and the revised draft document recirculated for public review and comment.

Herein we strongly urge consideration of the alternative of local relocation of the spent nuclear fuel (SNF) to the *Mesa*, in a bunkered, atmospherically sealed building, with a hot cell for addressing any potential damage to a dry cask. This is, as detailed below, the alternative with the least potential environmental impacts. As we show here, in the absence of such an alternative being adopted, the proposed action of eliminating the coolant structures for the existing spent

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fuel pools could have serious environmental impacts were there a need to address a problem with a dry cask and one couldn't reload the irradiated nuclear fuel into a spent fuel pool.

### **The Radioactive Elephant in the Room—3.6 Million Pounds of Irradiated Fuel**

The primary public concern and the most significant potential environmental impact associated with the SONGS decommissioning is the large quantity of highly radioactive spent nuclear fuel, yet that matter is excluded from consideration in the DEIR.<sup>4</sup> The basis for that significant omission appears faulty.

The focus of the DEIR is excessively narrow, limited primarily to circumscribed impacts on the near-shore ocean environment of removal of the SONGS cooling water inlet and outlet structures located on submerged state lands. However, removal of these cooling water structures could significantly impact the ability to safely manage the irradiated fuel.

The spent fuel pools are cooled via heat exchangers that transfer the heat from the water in the pools to the ocean. The spent fuel pool heat exchangers are cooled by two trains of Component Cooling Water, each of which is “supplied by an independent train of Salt Water Cooling (SWC) which transfers heat to the ultimate heat sink, the Pacific Ocean.”<sup>5</sup> Thus, if the proposed action contemplated by SLC and examined in its DEIR were to occur, it would be impossible for the spent fuel pools to be kept operational. That would have significant potential environmental impacts, as we shall discuss, even were all the fuel to be moved from the pools to dry cask storage. (To be clear, we strongly support prompt removal of irradiated fuel from the spent fuel pools, but, as is discussed in what follows, that doesn't mitigate the need to keep the pools in a ready state in case there is need to return fuel in case of damage to a cask.)

The nexus between the proposed action—permanent removal of structures necessary for cooling of the spent fuel pools—and long-term management of that irradiated fuel thus triggers a need to assess potential environmental impacts from and alternatives for management of that fuel. As we shall show, there are alternatives—particularly storing the irradiated fuel in dry casks in a bunkered, atmospherically sealed building on the *Mesa*, higher up on Camp Pendleton, with a hot cell for dealing with any damaged cask. Were that done, the need for keeping the spent fuel pool in operational condition might be reduced or eliminated, and the proposed action--removal

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<sup>4</sup> The DEIR does include some reference to the spent fuel, “for informational purposes” only.

<sup>5</sup> S. Cal. Edison to US Nuclear Regulatory Commission, “Spent Fuel Pool Cooling, San Onofre Nuclear Generating Station Units 2 and 3,” 11 May 1990

of the coolant structures--could perhaps proceed. But in the absence of consideration of that alternative, the environmental impacts of tearing up the coolant system for the spent fuel pools could be significant and must be examined.

### **The Location of Irradiated Fuel on the Beach is Unacceptable**

It is unacceptable that the San Onofre SNF—which contains 89 times more deadly cesium than what was released at Chernobyl<sup>6</sup>—is being stored in such a precarious location. In a time where evidence of rapidly rising sea levels is ever-increasing,<sup>7</sup> the decision to locate the SNF just 100 feet from the ocean and a mere few feet above the water table is irresponsible.<sup>8</sup>

Section 3.2.1 of the Draft EIR states that the bottom of the Independent Spent Fuel Storage Installation (ISFSI) was dug out and built at an elevation of “approximately 12 feet above sea level.”<sup>9</sup> The California Coastal Commission stated in 2015 that “increases in the water table elevation related to sea level rise could potentially lead to intermittent groundwater contact with the base of the ISFSI toward the end of the proposed 35-year life of the project.”<sup>10</sup> Increasing erosion, specifically on California's coastline is also a great concern; anyone who spends time at San Onofre knows that the beach is eroding rapidly.<sup>11</sup> The risk of tsunami is also serious due to the proximity of the shoreline.

Additionally, the current location of the waste renders it susceptible to a potential terrorist attack. The storage site is approachable from the ocean as well as from the publicly accessible State Park, and is also situated right next to the major interstate highway I-5, increasing its vulnerability. Security at the facility is insufficient and the site could easily be breached.

The culmination of these factors lead us to conclude that the current storage location of the spent fuel lacks foresight and puts the health and safety of Southern California at unnecessary risk. With no final repository for the nation’s nuclear waste in sight, these concerns are significant.

The EIR states that the current ISFSI is temporary, however, there is no clear timeline for when this nuclear waste will be moved from San Onofre to a permanent repository, and no clear

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<sup>6</sup> Robert Alvarez, *Reducing the Hazards of High-Level Radioactive Waste in Southern California: Storage of Nuclear Waste from Spent Fuel at San Onofre*, 25 June 2013

<sup>7</sup> Blumberg, Sara. “New Study Finds Sea Level Rise Accelerating.” *NASA*, NASA, 13 Feb. 2018, [www.nasa.gov/feature/goddard/2018/new-study-finds-sea-level-rise-accelerating](http://www.nasa.gov/feature/goddard/2018/new-study-finds-sea-level-rise-accelerating).

<sup>8</sup> “ADOPTED FINDINGS: REGULAR PERMIT.” California Coastal Commission, 6 Oct. 2015.

<sup>9</sup> “Draft Environmental Impact Report for the San Onofre Nuclear Generating Station (SONGS) Units 2 & 3 Decommissioning Project.” California State Lands Commission, June 2018.

<sup>10</sup> “ADOPTED FINDINGS: REGULAR PERMIT.” California Coastal Commission, 6 Oct. 2015.

<sup>11</sup> “Disappearing Beaches: Modeling Shoreline Change in Southern California.” United States Geological Survey, March 2017)

location of where it will be moved to. All the risks associated with the current storage location are compounded by the increase in time in which the fuel will remain there, and thus the potential for the waste to be stored on the beach indefinitely is extremely concerning. A hard look at the alternative of the *Mesa* is thus in order.

### **The *Mesa* is the Most Viable and Safe Alternative, but is Eliminated from Discussion in the DEIR**

Multiple alternatives related to the storage of the spent fuel have been mentioned and eliminated from further consideration in this Draft EIR, including Local Relocation of the ISFSI in 2035. The description of this alternative in Section 5.3.2 includes this statement: “The public has suggested relocating the ISFSI east of I-5 in the “*Mesa*” area of the Marine Corps Base Camp Pendleton, which has existing pads and roadways and is also located on DoN land; however, other locations could be considered.” The rationale for elimination includes this statement: “While it might be argued that a new location may be safer than the existing location by moving the ISFSI further from the coast, the ISFSI in its current location is part of baseline conditions. Therefore, such an alternative would mitigate hazards associated with existing conditions rather than reducing a Proposed Project impact.” However, impacts related to any ISFSI *must be* Proposed Project impacts because the Proposed Project of Decommissioning SONGS cannot be executed until all waste is unloaded from spent fuel pools into the ISFSI and the spent fuel management is intricately tied to whether ocean cooling structures are needed for maintaining the pools in case of dry cask damage.

We are in support of the least-bad option: local relocation of the waste further east on Camp Pendleton where it can be more safely stored, monitored, and defended until a national repository is constructed. One example of such a possible storage site would be the *Mesa* site. Edison has used this land in the past, has a current lease, and is performing voluntary cleanup there as noted in Section 3.2.2 of this draft EIR. This site is 120 feet above sea level,<sup>12</sup> 108 feet higher than the current storage site and far above the level of expected sea level rise from climate change. Additionally, it is essentially not visible from the freeway because a hill blocks it out of sight, rendering it far easier to protect against a terrorist attack. Canisters could be transported on Edison’s service road that goes underneath the freeway and connects to the *Mesa* site.<sup>13</sup>

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<sup>12</sup> “San Onofre Nuclear Power Plant.” *Google Maps Topography and Elevation View*, Google, maps.google.com/.

<sup>13</sup> “San Onofre Nuclear Power Plant.” *Google Maps Satellite View*, Google, maps.google.com/

Nuclear waste experts including former NRC Chairman Greg Jaczko, engineer Tom English, and retired Navy Admiral Len Herring have publicly supported this alternative.<sup>14</sup> It is also supported by a large portion of the community, so eliminating it as an option is an effort to eliminate local voices. We note that Camp Pendleton has publicly stated that they do not want the waste on their land,<sup>15</sup> but it *already is* on their land (SONGS is located on property leased from Pendleton), and on the least defensible part of it, so we need to move it somewhere better on Pendleton.

It is unacceptable that this draft EIR not only attempts to eliminate all discussion of the ISFSI, but also attempts to completely eliminate the *Mesa* from future consideration for the relocation of the ISFSI. Moving spent fuel storage to The *Mesa*—or another site further east in Camp Pendleton—is the only safe and ethical choice we have until a national repository is constructed. It is crucial to seriously consider this option now because if we do not, this waste will sit on the beach at San Onofre for an indefinite amount of time—the California Coastal Commission will likely extend the ISFSI permit in 2035 because no suitable national repository has been located and promises of interim sites are empty promises. This is also the most ethical option because we would not be dumping the waste on another community or storing it excessively close to the ocean.

This draft EIR references the “Uncertainty of Future Activities” multiple times, specifically noting that it is unclear when the waste will be able to be moved off-site. If there is so much uncertainty around this, please consider the options we have to take action for a safer situation now.

In the final draft of this EIR, please fully address the issue of spent fuel storage and possible alternatives, specifically the alternative of local relocation to the *Mesa* or elsewhere further east in Camp Pendleton. The new facility should include above-ground concrete-reinforced buildings designed to isolate radioactivity from the environment, where canisters can be properly monitored and inspected, and a hot cell where canisters can be repaired or replaced should damage occur.

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<sup>14</sup> St John, Alison. “Former NRC Chief Says San Onofre's Nuclear Waste May Never Be Moved.” *KPBS Public Media*, KPBS, 2 Aug. 2018, [www.kpbs.org/news/2018/aug/02/former-nrc-chief-says-edison-should-stop-burying-n/](http://www.kpbs.org/news/2018/aug/02/former-nrc-chief-says-edison-should-stop-burying-n/).

<sup>15</sup> St John, Alison. “Marine Corps Waits For Nuke Waste Removal From San Onofre.” *KPBS Public Media*, KPBS, 2 Nov. 2017, [www.kpbs.org/news/2017/nov/02/marine-corps-perspective-decommissioning-san-onofre/](http://www.kpbs.org/news/2017/nov/02/marine-corps-perspective-decommissioning-san-onofre/).

## **Issues Related to Casks and Storage Design**

Additional concerns revolve around the design and structural integrity of the storage casks currently being used on site. The canisters at San Onofre are stored outdoors and are not actively monitored, and there would be nothing that could be done if there were damage to a cask. The current storage system does not have a mechanism for allowing the nuclear waste to be inspected and repaired should a mishap occur.

In Germany, casks are stored in above-ground concrete-reinforced buildings designed to isolate radioactivity from the environment in case of a release.<sup>16</sup> Serious consideration should be given to storing the dry casks in a sealed building constructed on the *Mesa*, so that if there is a problem with a cask any release could be contained within the building. The new facility should be a concrete-reinforced, bunkered building designed to isolate radioactivity from the environment, where canisters that can be properly monitored and inspected. Critically, it should include an inerted “hot cell” where a failing or damaged cask can be repaired or replaced should damage occur. In the absence of such a hot cell, and perhaps even with such a hot cell, the spent fuel pools must be kept in operational condition, which means the offshore cooling structures at issue in the DEIR would need to be kept as well.

## **“Baseline Conditions” Should Not Include the ISFSI**

It is unacceptable that the ISFSI at SONGS is asserted to be a baseline condition and not considered a part of the Proposed Project in this draft EIR, and is thus eliminated from further discussion. According to section 1.5.1, “Baseline conditions are defined as the existing physical environmental setting by which a lead agency determines whether an impact is significant.” The actual baseline condition is that there are functioning spent fuel pools, requiring ocean cooling through the submerged structures that SLC proposes to permit be removed. If the proposed action went forward, fuel in a damaged dry cask could not be reloaded into the spent fuel pool for repackaging into an undamaged cask. The ISFSI and the alternatives must be considered.

## **Waste Should Not Be Shipped Twice**

We do not support the shipment of the waste to any of the currently proposed “Consolidated Interim Storage” (CIS) sites in other states, because of the dangers that transportation poses and the lack of consent from the communities. This would require shipping the waste twice rather

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<sup>16</sup> Thureau, Jens. “Germany to Dump Nuclear Waste for Good - but Where? | DW | 05.07.2016.” *DW.COM*, 7 May 2016, [www.dw.com/en/germany-to-dump-nuclear-waste-for-good-but-where/a-19380548](http://www.dw.com/en/germany-to-dump-nuclear-waste-for-good-but-where/a-19380548).

than once; first from San Onofre to a privately managed CIS in Texas or New Mexico, and then again to its final destination at a national repository once one is constructed. The current proposed CISs have been chosen for political or monetary reasons, rather than founded in research centered around public and environmental safety. Furthermore, residents nearby the proposed interim storage sites in Texas and New Mexico have already expressed strong opposition to this.

Shipping nuclear waste across the country is extremely dangerous both in terms of risk of accident and terrorist attack. Transporting the nuclear waste from San Onofre has two potential routes; through San Diego or through Orange County and Los Angeles. Doing so would put the millions of residents in those areas at great risk. We should avoid shipping nuclear waste across the country twice and when we do ship it, it should be to a federally operated permanent nuclear waste repository, and we must be sure that there is strong environmental and safety oversight by government agencies. Additionally, true consent from the community is essential, as it is our moral responsibility not to hastily dump our burden on someone else. The environmental impacts of shipping the waste through Southern California, with its risks, and then shipping it again, are unacceptable.

## **Conclusion**

The DEIR is deficient and should be revised and recirculated for public comment. The fundamental environmental risks from the proposed project are not addressed in the DEIR, and it fails to take a hard look at alternatives.

We strongly support the transfer of all irradiated fuel from the spent fuel pools as soon as possible, since the consequences of a spent fuel fire if there is a failure of cooling in the pool would be catastrophic. However, the cooling systems for the spent fuel pools should not be dismantled, because that would disable the pools which may be needed if any dry cask develops problems. The alternative of establishing a bunkered building with a hot cell at the *Mesa* or elsewhere higher up on Camp Pendleton should be seriously considered.