Opinion Editorial Deliverable

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Op-Ed Advocacy Material; Ready for Adaptation

Why a Permanent Repository for Nuclear Waste will Preserve the Health of our Environment and Coastal Communities

Take Action: Signing a Petition Supports the Approval of a Permanent Repository and the Transportation of Nuclear Waste

Although the San Onofre Nuclear Generating Station (SONGS) closed operations in June 2013, over 3.55 million pounds of nuclear waste remain onsite and within 50 miles of roughly 8.4 million people, less than 1,000 feet from California’s heaviest trafficked Interstate 5 freeway, and only footsteps away from the shoreline of the Pacific Ocean.

Currently, the waste is being stored in partially underground, steel-reinforced, concrete canisters. And while current federal policy regulations require a federally approved permanent repository—in order to then transport the waste off the coast—Southern California Edison (SCE), majority owner of SONGS, insists that despite the waste’s tenuous position on the dynamic coastal fault-line, these canisters serve as a secure, temporary storage measure.

After recognizing the hazardous results from nuclear energy, and the inevitably produced nuclear waste, Congress passed the Nuclear Waste Policy Act of 1982 whereby a permanent, underground repository to store the remaining U.S. nuclear waste was to be established by the mid-1990s. However, 35 years later, a permanent nuclear waste repository has yet to be established. The lack of a designated permanent storage location, coupled with the questionable infrastructure and location of the existing canisters, forces us to confront the issue of nuclear-waste storage with a sense of urgency. From both local and global perspectives, the implications remain; storing nuclear waste on a dynamic coastal fault line calls for immediate action.
But After 35 Years, Why Take Action Now?

Even though California’s dynamic coastal fault-line has not yet experience a high-magnitude earthquake, it is critical to understand why moving the nuclear waste off the coast calls for immediate action, and that the present circumstances have highlighted multiple concerns.

The dangers and lifespan of nuclear-waste are difficult to grasp, and although there are varying degrees of hazardous waste, nuclear waste surpasses other hazardous materials in terms of human and environmental health concerns because it retains massive amounts of radiation for over 100,000 years. This radiation can negatively impact human health at the microscopic level and can impact environmental health on the macroscopic—large scale—as well. So what if there is a crack in the storage canisters, or a leak? What happens if, or when, this radiation get out?

Currently, the storage method employed by SCE at SONGS is considered “thin-walled;” spent nuclear-fuel assemblies are placed in a thin, steel canister, sealed, then surrounded with pressurized concrete. In plain language, these canisters, designed by Holtec International, are half buried then have concrete poured over them. This means that (1) there is no way to examine and evaluate the state of the storage canisters, which leads to, (2) no way to determine if the canisters have cracks, leaks, or are deteriorating from natural elements.

So, reasonably, concerns have been raised: we cannot prevent irrevocable impacts to our environment or community health without proper storage techniques and a designated, safe repository. Despite the common use of the current canisters elsewhere in the United States in other nuclear-waste storage facilities, what is most alarming in this case is that the “partially buried” design used at the SONGS is unique to that site. Further, this unique storage method has not been tested for long-term safety. Did we forget to mention that this unique, “partially-buried” design sits atop an unpredictable geological fault-line that risks exposing the California coast and Pacific Ocean to nuclear waste?

Implications of SONGS’ Nuclear Waste Storage Techniques

In addition to the SONGS’ unique design of canisters that are partially-buried then poured over with concrete, stainless-steel canisters are also prone to corrosion—more simply known as cracking. The California Coastal Commission notes that the “initiation and growth of stress corrosion cracking in stainless steel fuel storage casks are not fully understood and remain a topic of active research, but these processes are likely to be accelerated in a coastal environment such as at SONGS.”

Acceleration, in the case of SONGS, refers to the corrosion by coastal elements—such as salt—on the storage canisters.
In response, SCE defends their position with a 15-year-long study where welded stainless-steel specimens were exposed to the atmosphere at coastal sites and showed no signs of any cracking. The canisters at SONGS, however, are planned to be stored for more than 15 years and their design also exposes them to rainwater. Because the station rests within the radius of a geologically active fault-line and in range of corrosive coastal elements, the reality of cracking of their uniquely stored canisters appears to be both feasible and inevitable.

Should the storage canisters fail, the negative effects would reach more than just human and environmental health. California’s commercial fisheries generate about $200 million in revenue annually and sustain over 100,000 jobs. The State’s accessible beaches and diverse landscapes drive tourism profits, and last year, travel spending totaled $126.3 billion, supporting more than one million jobs. These industries would quickly be eliminated by environmental exposure to nuclear waste leaks; communities would crumble due to the loss of revenue and what would be an uninhabitable geographic region.

Further, as one of the world’s 25 biodiversity hotspots—biogeographic regions that are a significant reservoir of biodiversity—the danger to the California Floristic Province, which runs along the state’s entire coastline, is only one of plentiful environmental concerns surrounding the SONGS facility; even the smallest exposures of nuclear contamination can decimate ecosystems and essential species (such as kelp) to that oceanic or land-based ecosystem. Such losses would make the region uninhabitable for not only critical plant and animal species, but for human life as well.

Inevitably, if a leak of nuclear-waste occurs, the communities surrounding the SONGS facility would potentially have to relocate because the environment would be uninhabitable, or else they will be exposed to nuclear contamination, resulting in health complications like cancer and birth defects that present themselves over time and with new generations.

Make Waves and Change Federal Policy

When Japan’s 2011 tsunami caused a cooling system failure and the subsequent release of radioactive material at Fukushima Daiichi Nuclear Power Plant, experts described the event as a “beyond-design-basis accident.” Even with a state-of-the-art design, human error, mistakes, or natural disasters have the potential to release stored nuclear-waste. The SONGS facility has the same potential, regardless of improved storage techniques or technological advances; human error and environmental events must always be considered because there is no such thing as fool-proof prevention measures for accidents.

Yet, unlike Fukushima, SCE has the authority to make progress towards a federally approved, permanent repository, given that the repository is consent-based, geologically secure, and—most certainly—established in a specific, imminent timeframe.
The federal government is being pressured to revisit the issue—to officially determine a permanent repository—by the activist networks of nonprofit organizations such as the Surfrider Foundation, whose mission is dedicated to the protection and enjoyment of the world’s ocean, waves, and beaches. Surfrider works to pressure federal policy makers towards finding a solution, with a sense of urgency. And with urgency, Surfrider plans to help negotiate a designated permanent repository, so that the SONGS nuclear waste can be moved off the coast, in a timely fashion. Help strengthen Surfrider’s voice as they pressure federal policy makers for smart and timely decision-making. Sign the Petition below!