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Rescuing California From Stranded Spent Nuclear Fuel at SONGS

Additional submitted attachment is included below.

Re: Rescuing California from Stranded Spent Nuclear Fuel at SONGS

To the California Energy Commission, 15-IEPR-12 Nuclear Power Plants,

I respectfully request that the spent nuclear fuel (SNF) stranded at San Onofre Nuclear Generation Station (SONGS) utilize thick cask storage technology. With the indefinite interim storage timeline recently announced by the NRC,[1] it is fiscally and ethically irresponsible to store SNF near the ocean in containers that suffer from unpredictable rapid salt corrosion.

The stranded SNF at SONGS places a significant burden on the State of California and its citizens. Long-term storage of SNF in thin walled canisters makes us susceptible to multiple threats, with no ability to respond quickly. A possible 50+ year storage of SNF at SONGS, on the beach, creates a huge lasting vulnerability on our least secure border.

The ocean's salt-air environment will accelerate the degradation of thin walled SNF storage canisters and likely force the State of California to relocate the material. This will cost ratepayers billions of dollars to accomplish while exposing citizens to unknown levels of radiation for years due to cracking canisters containing stranded SNF.

The risks of leaving stranded SNF from SONGS in a highly vulnerable position should give policy makers great pause for evaluating alternative storage technologies. Thick casks that are inspectable, maintainable and longer lived would not only reduce threats of radiation exposure to a large population center but would also enable a cost effective relocation of SNF.

We can rescue ourselves from the current dangerous situation, while setting a national example by changing the way SNF is stored in California. Initially a comparative cost benefit analysis between thin canisters and thick casks needs to be performed including life cycle costs associated with breached thin canisters and their likely relocation away from SONGS. The results of this analysis would quantify the long-term economic burden associated with stranding SNF at SONGS in thin canisters versus thick cask storage.

California could then establish legal jurisdiction over the federal government in the way the State handles it's SNF, with the documented excessive economic burden that thin canister storage of SNF imparts on California's ratepayers and citizens. The CPUC could then direct SCE to work with the NRC on certifying thick casks for the storage of SNF at SONGS. Several manufacturers of these casks are available and have expressed interest in the US market.

Thick casks are known to the NRC and certification is projected to take less than 30 months to complete. Comparing a 30-month delay where the SNF is relatively safely contained, to a delay of unknown duration where stranded SNF is leaking from cracked canisters. Clearly it is better to wait now in relative safety for robust SNF storage

[1] http://pbadupws.nrc.gov/docs/ML1423/ML14238A326.pdf

technology rather than move quickly towards the less certain future thin canisters provide in harsh environs.

California's ratepayers should continue to contribute to the Nuclear Decommissioning Trust fund until all of California's stranded SNF resides in long-lived thick casks. We used the electricity generated by SONGS, we must pay for responsible storage the waste. Lest our children or children's children have to pay.

"Stranded" is the plight of SNF, stored on site at a closed or decommissioned nuclear power plant. There are deep implications related to stranding SNF in thin canisters that are usually overlooked or ignored, which could be costly to ratepayers and politicians.

Economically Stranded SNF

The nuclear industry's standard thin canisters that hold radioactive SNF are not shielded. These canisters must be enshrouded in a monolithic concrete radiation shield at all times. The cost to install the radiation shield *infrastructure* for 75 Holtec HI-STORM UMAX thin canisters at SONGS is $396 million.[2] The cost of replacing this radiation shielding *infrastructure* at a remote Independent Spent Fuel Storage Installation (ISFSI) would be an additional $396 million. Add to this, the cost of the relocation itself with no funding available for a remote ISFSI and thin canisters stored on-site at SONGS are economically stranded.

Political Stranding of SNF

Identifying a new site where a second $396 million will be spent to create a remote long term ISFSI will meet massive political resistance, taking years to resolve before any radiation shielding *infrastructure* can be built on a remote ISFSI. Making thin canisters stored on-site at SONGS politically stranded.

SNF Stranded by Insufficient Infrastructure

Many transportation related infrastructure improvements will be required to our State's bridges, rail lines and roadways before 100-ton thin canisters could be relocated to a remote ISFSI. Internalizing the cost of nuclear power waste disposal through California's socially funded transportation taxes. Thus stranding the SNF stored in breached thin canisters until the California taxpayer improves the roads sufficiently to move such heavy loads. Thick casks will likely not need to be moved to a distant remote ISFSI and could rely upon federal funds to improve roadway to a permanent repository.

SNF Stranded Through Civic Uncertainty

Political and civic resistance regarding the route the SNF will follow during relocation to a remote ISFSI will be significant. The further the SNF has to travel to reach a remote ISFSI the more public resistance the State will encounter during relocation. Breached thin canisters that have been "repaired" will add uncertainty and fuel unrest towards movement of the civically stranded SNF.

[2] http://pbadupws.nrc.gov/docs/ML1426/ML14269A032.pdf Page 9.

SNF Stranded by Non-Existent Inspection Technology

Thin canisters that have experienced years of harsh environmental exposure at SONGS will be required by the NRC to be inspected and reworked on-site before transport, to ensure canister integrity. Yet no inspection technology is available to reliably detect the microscopically small surface blemishes breaching cracks reveal. The NRC has recently given the nuclear industry 5 years to invent new inspection technology, to reliably detect and measure the depth of thin canister corrosion cracks.[3]

Given the enormity of the 100 ton canisters, the small breaching crack blemish revealed on the surface and the decades engineers have already been attempting to detect these tiny blemishes, with limited success, it would unwise for the State of California to rely upon the development of such unproven and unlikely inspection technology. Thus thin canisters strand SNF at SONGS due to non-existent inspection technology.

SNF Stranded by Non-Existent Repair Technology

Currently there are no NRC accepted repair procedures for thin canisters. Since the NRC requires the canister be sufficiently robust for transport, it is currently not possible relocate a breached SONGS thin canister. At a recent SCE sponsored Community Engagement Meeting, Kris Singh the CEO of Holtec, manufacturer of thin canister SNF storage systems stated "it is not practical to repair a canister if damaged."[4] Further stranding thin canisters at SONGS unless repair procedures can be developed, tested, proven and certified as sufficient for transport by the NRC. It is possible to replace each thin canister before transport, yet the procedure to do so has never been tried.

Stranded by Non-Existent Spent Fuel Pools

Within the SONGS Site Specific Decommissioning Cost Estimate it is planned to dismantle the spent fuel pools (SFP) once they are empty. Nuclear industry documents call out the need for an empty spent fuel pool to replace a thin canister containing SNF. Since SONGS SFPs will be dismantled before decommissioning there will be no on site infrastructure in place to replace a damaged or badly salt corroded thin canister. Ratepayers will be responsible to pay for a new SFP, gantry crane, robotic underwater welding equipment, SFP chillers… costing millions and taking years to build on site before thin canisters can be replaced at SONGS. Further stranding the SNF in a damaged canister at SONGS while thin canister replacement infrastructure is constructed.

To summarize, the SNF at SONGS is stranded, unable to be relocated due to economic, political, infrastructure, civic and technology-development impediments. These issues will take years to resolve and cost Californians billions before the SNF stored in thin canisters at SONGS could ever be relocated. ALL the identified impediments to relocating stranded SNF are exacerbated by the use of thin canister SNF storage technology.

Stranded SNF With a Built-in Need to Move

[3] http://pbadupws.nrc.gov/docs/ML1425/ML14258A081.pdf First sentence of the last paragraph on Page 3.
[4] https://www.youtube.com/watch?v=euaFZt0YPi4

Not only does thin canister storage technology make it impossible to relocate SNF, the same technology is also responsible for the need to relocate the SNF. According to the NRC's expert metallurgist, Darrell Dunn, it can take as little as 16 years for Stress Corrosion Cracking (SCC) to breach a 5/8" stainless steel thin canister once the crack is initiated.[5] There is no known model available to predict when an SCC crack will initiate.

Coastal ocean air, rich in chloride salts are required to initiate SCC cracking. These airborne salts are abundant at both the SONGS and Diablo Canyon Nuclear Power Plant (DCNPP) sites. All the conditions required to initiate a SCC crack were detected during a thin canister inspection conducted by EPRI in early 2014 on Holtec stainless steel SNF storage canisters. The canisters inspected were only deployed for two years at DCNPP.[6]

Given a 2050 "grand opening" of the federal government's permanent repository, a 16 year timeline for a SCC crack to breach a thin canister appears quite short. Especially when a nuclear power plant in coastal Koeberg, Africa has documented stainless steel SCC cracking that would have effectively breached a 5/8" thin canister in 17 years.[6] Stainless steel components at SONGS have been documented to experience SCC cracking equivalent to 40% of the way through a 5/8" thin canister in 25 years.[7] Clearly, there is sufficient evidence that stainless steel components at coastal nuclear power plants suffer from rapid salt corrosion due to SCC and should not be used as a long term SNF storage container on the coast.

Insufficient SNF Canister Inspection Practices

Currently SNF at SONGS has been deployed in stainless steel thin canisters since 2003, already exposed to 12 years of chloride rich marine air, with no planned inspection until 2022. Which will be nineteen years after being loaded with SNF.

Adding to the uncertainty of thin canister integrity at SONGS, the NRC ISFSI re-licensing specification stipulates that only "**ONE**" thin canister need be inspected before re-licensing the entire 51 canisters on the ISFSI site for an additional 20 to 40 years.[8]

Limited physical accessibility to the thin canister within the restrictive radiation shielding concrete barrier impedes the possible inspection of the "**ONE**" canister to less than 10% of its entire surface area. Incredibly, there is no stated minimum surface area to be inspected on the "ONE" canister inspected for re-license in the current or soon to be updated NRC specification: NUREG 1927 "Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance".[9]

SCC cracking has only a microscopic footprint on the surface of the canister, making reliable crack detection extremely difficult on the approximately 100 ton, 8 foot diameter

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[5] http://pbadupws.nrc.gov/docs/ML1425/ML14258A081.pdf First paragraph on Page 4.
[6] http://pbadupws.nrc.gov/docs/ML1405/ML14052A430.pdf Slide 18 & 19 with a comprehensive EPRI report scheduled to be published in Sept. 2014. No report has been published to date.
[7] http://pbadupws.nrc.gov/docs/ML1425/ML14258A082.pdf Slide 9.
[8] http://pbadupws.nrc.gov/docs/ML1110/ML111020115.pdf Page 62 regarding "Lead Canister"
[9] http://pbadupws.nrc.gov/docs/ML1425/ML14258A082.pdf Slides 16-20 Presentation indicates NRC's intent of NUREG 1927 update in mid 2015. No minimum canister surface area inspection specified.

by 18 foot stainless steel cylinder. Basically we won't know about a breached canister at SONGS until it releases radiation. Once breached, the stranded status of the SONGS SNF will ensure there is little to nothing we can do to quickly remedy the situation.

Effects of a Breached Canister

If the consequences of a breached canister were insignificant, the NRC and nuclear industry would have made sure information regarding breached canisters was available for the public to view. But after searching the topic extensively it is very difficult to gain *credible* information on the consequences of a SNF thin canister breach. This lack of information may be due to there being no information available, or it may be due to intentional obfuscation.

One credible reference on the topic of breached thin canisters comes from an SCE Community Engagement Meeting where according to Kris Singh the CEO of Holtec, manufacturer of thin canister SNF storage systems stated that a microscopic crack in a thin canister would release "millions of Curies of radiation out of the canister".[10] In comparison the NRC officially estimated the disaster at Three Mile Island released 43,000 Curie.[11] A release of millions of curies from a breached thin canister into the atmosphere would be a significant radiological event. Prevailing winds would all but assure a breached SONGS canister would contaminate areas to the southeast and secure a prominent location in national news headlines.

All 51 thin canisters deployed at SONGS have experienced the same environmental conditions that at some point could cause one canister to breach. It is reasonable to expect other canisters to experience similar amounts of corrosion and could be close to breaching as well. Timing of additional canister breaches will be unknown. But over the years it will take to relocate stranded SNF at SONGS, the nation will remain on-guard, unsure of the timing of the next thin canister breach or its biological effects.

The State of California is allowing this reality to happen, due to a broken utility regulatory system where the CPUC enables Utility Companies to maximize their profits for generating nuclear power while socializing the cost of nuclear waste. Social costs that could include radiation exposure and a costly SNF reprocessing plant at SONGS. All with a built in SCE profit to manage the problem.

California has a long history of good environmental policies: pioneering legislative and regulatory efforts in clean air, catalytic converters, Proposition 65, bans on pubic smoking, renewable energy portfolio quotas, greenhouse gas emission targets, etc. But now the State of California is preparing to allow one of its Utility Companies to store SNF in canisters known to corrode in the environment where it is planned to be stored? It is hard to believe such a progressive State Government is even considering the funding of this $1.3 billion radiation pollution project. I am distraught and disheartened because I understand the consequences of the *status quo*.

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[10] https://www.youtube.com/watch?v=euaFZt0YPi4

[11] http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html

But once the flaws in thin canister SNF becomes known, millions of citizens will be outraged that our State government would invest so much ratepayer money into such a short lived solution. With its obvious consequences of entrapping millions of citizens to participate in a radioactive exposure experiment and the impacts this radiation will have on citizen's lives.

The People Speak

If the State government is unable to come up with a plan to relocate the SNF after a thin canister breach, the public may initiate a plan of its own. Under the initiative process a ballot measure could be drafted that demands the relocation of the SNF from SONGS to a remote ISFSI. This will leave the politicians no choice but to determine how to execute the people's solution while canisters continue to breach. With little to no control over how the initiative is drafted or specified, it would be prudent to identify a method to pro-actively change the stranded status of the SNF and look into addressing thin canister corrosion before the money is invested into a billion dollar piece of infrastructure that will need to be moved elsewhere.

One Large Release

There have been no NRC studies on the seismic survivability of partially SCC cracked thin canisters. So there is no way of insuring the public that thin canisters, deployed for a number of years at SONGS will not breach during a sizable earthquake. At any moment now, it is possible that 50 partially SCC cracked canisters, currently deployed at SONGS since 2003, could breach simultaneously due to an earthquake, with no possible means of containment, releasing radiation measuring hundreds of millions of curie.

The Holtec HI-STORM UMAX thin canisters storage system has not been seismically tested and is not NRC certified to be installed at seismically active sites, such as SONGS.[12] Partially corroded thin canisters are impossible to certify with regard to earthquake survivability and should never be relied upon to retain SNF in highly corrosive salt-air rich environments known to be earthquake prone. Once canisters begin to breach, many difficult questions will require answers with no immediate action possible.

Although a SCC breached canister is likely to be the public's first glimpse into the stranded status of thin canister SNF technology, we as a nation can never forget September 11th, 2001. The most difficult component to obtain in fabricating a "dirty bomb" is the radioactive material. With millions of pounds of that material residing at each of our nation's nuclear power plants, it is unlikely, but entirely possible that a terrorist organization could target an on-site ISFSI, as a means of spreading terror within our nation.

Regardless of the location of an attack, such an occurrence would probably initiate a fevered effort to relocate our nation's SNF away from hard-to-protect coastal locations. This makes SONGS a likely candidate for relocation of its SNF to a remote ISFSI. During the years it would take to identify and resolve the myriad of impediments to

[12] http://www.gpo.gov/fdsys/pkg/FR-2015-03-06/html/2015-05238.htm

relocating the stranded SNF to a remote ISFSI, the public would be living under the constant threat of another terrorist strike. This type of situation is the kind terrorists value highly, frightening conditions with no short-term ability to alleviate the threat. Prevailing winds wafting the radioactive plume across a famous heavily populated area and proximity to an international border make SONGS more than a good target, one could argue its THE TARGET.

Californian's Reaction to a Radiation Release

The impact of stranded SNF releasing radioisotopes into Southern California is immeasurable beginning with the psychological state of the general public and deep-seated fears of nuclear radiation, cancer and death. People living in Southern California will experience huge uncertainties, possibly panic as the news regarding breached canisters containing radioactive materials is revealed. Even in the case of a minor radiation leak, the scenario is bleak. Being a healthy lifestyle Mecca, residents will immediately leave the area in droves causing a massive evacuation, on a scale never seen before in Southern California. Health-conscious people would move away, destroying property values and devastating the California economy by killing businesses due to lack of employees and customers. Radiation concerns will also reduce the region's hospitality/tourism industry turning an entertainment destination into a wasteland. Inland food producers would be questioned for radiation contamination. It is hard to imagine what large scale havoc a breach would wreak.

There are alternatives to this troubling future in which the possibility of long-term uncontrolled radioactive release becomes the "new normal" due to SNF being stranded in thin canisters. I invite you to consider a few of the benefits of an alternative dry cask SNF storage technology that effectively eliminates most of the stranding features of thin canisters.

Thick Cask SNF Storage Technology

Used to store SNF around the world in countries like Germany France and Japan, thick casks have a 9" to 20" wall thickness made out of steel or ductile cast iron. With a maintainable epoxy exterior coating and a corrosion resistive nickel-plated interior they have been deployed in Germany for over 40 years without any appreciable degradation. They have two bolted lids for redundancy on one end and pressure monitoring verifies the lid seals are functional.

Thick casks have radiation shielding within their thick walls, eliminating the need for monolithic concrete radiation shielding. Germany and Japan are considering the use of thick casks to implement final disposal for SNF. Clearly this technology will meet the test of time being asked before a federal repository becomes available. Making it unlikely that SNF in thick casks will need to be relocated prematurely.

Inspection and Repair Now Possible

Probably the most valuable aspect of thick cask SNF storage technology is its self-contained radiation barrier. This feature allows a cask inspector to approach a cask containing SNF and inspect every inch of its surface with little concern of radiation

exposure. This technology has proven repair procedures in place, empowering maintenance personnel to stop a potential problem before a potential well breach becomes a concern. This creates a much greater awareness of each cask's integrity when compared to "ONE" thin canister being partially inspected after 19 years of deployment and no means of thin canister repair.

Relocation of SNF Now Possible

Another extremely important benefit thick cask technology delivers is the ability to rapidly relocate the SNF to a remote location. There is no need to prepare a destination site with expensive radiation shielding monolithic concrete *infrastructure*.

During times of crisis, the thick casks could be temporarily relocated to a number of primitive outdoor facilities with sufficient load bearing ground surface being the only physically limiting relocation criterion. This makes an abandoned airstrip, roadway or any site with hard packed earthen ground a suitable location for an emergency ISFSI away from the coast. This fact would ease the State's ability to identify and secure a temporary ISFSI site that would never allow a permanent ISFSI. Additionally, these temporary sites suitable for SNF storage in thick casks, would not be suitable for temporary storage using thin canisters due a to lack of installed radiation shielding.

Transportation Infrastructure Requirements Reduced

Thick cask SNF technology empowers our State lawmakers to locate a temporary ISFSI site close to SONGS, reducing the number of transportation infrastructure improvements required to relocate the SNF.

Thick casks could be relocated from SONGS to an alternative location in trucks who's loaded weight is actually *less* than trucks properly prepared to carry thin canisters.

The closer the remote ISFIS is to SONGS, the less civil disobedience exposure the State will experience. This feature also allows the State to "test the water's" of domestic SNF relocation before attempting to relocate to a more permanent location. Given the likelihood of a thick cask surviving until a permanent repository becomes available, relocation of SNF in thick casks will most likely be due an externally generated crisis. Where thin canisters will likely breach and need to be repaired before relocation, an internally generated crisis, accompanied by a public relations nightmare.

Generally More Robust

Thick casks empowers the public, knowing that our State has chosen a SNF storage technology that is responsive to terrorist threats, immune to short-term corrosion degradation, inspectable, repairable and cost effective. In addition, there is somehow an undeniable sense of added protection knowing that the longest-lived toxic substance known to man is contained within 20 inches of ductile cast iron, when compared to a 5/8" thin skin.

Predicting the likelihood of a terrorist attack on an ISFSI is impossible. There is a much larger likelihood of salt air initiating an SCC breach on one, if not multiple, thin canisters

at SONGS. Earthquakes add to the certainty of partially corroded thin canisters being breached during their indefinite stay at SONGS. Thick casks do not suffer from SCC and are able to handle extreme earthquakes, including the Fukushima earthquake and resulting tsunami where thick casks demonstrated their ability to contain SNF without incident.

Certification

The only significant disadvantage of the thick-cask technology is that the US NRC has not yet approved it. This approval process could take up to 30 months. But this technology is and has been approved by both the German and Japanese governments and so by precedent, it should be reasonably easy to approve thick-cask storage containment in the US as well.

Security

The NRC has voiced concern that bolted lids on ductile cast iron thick casks are not as secure as welded thin canisters. This concern is not valid given that newer thick cask designs have a third welded lid to enhance the thick cask's on-site security. In case of a terrorist attack, this puts thick casks on equal or better footing than thin canisters.

Cost Effective

Thin canisters will likely breach during their 50 years of being stored in SONGS salty ocean air. This will result in the need to rework and then relocate the SNF, which will require costly infrastructure and take years to implement. All of this would be avoided with thick casks.

SCE is only considering their short term corporate goals in the selection of thin canisters to store SNF at SONGS. As an example, SCE wants the SNF removed from the Spent Fuel Pools as soon as possible, which allows them to lay-off expensive skilled SNF handlers needed during the loading of SNF containers. Having to wait 24 to 30 months for the NRC to certify thick cask use in the United States will add to SCE's retained employee overhead if thick casks are utilized. In the short term, this would save SCE a few million dollars by allowing them to quickly transfer SONGS's SNF into corrosion prone thin canisters.

But this approach will cost California ratepayers over $1 Billion in SNF rework and relocation costs once the canisters begin to breach. But in SCE's ledger, all corroded canister rework on-site at SONGS will include a 10% built in SCE profit. So their long-term revenue outlook is also better with breached thin canisters. Clearly there are both short and long term incentives for SCE to choose thin canisters over thick casks at ratepayer's and Southern California's expense.

When relocation of coastal SNF thin canisters is included in the life cycle cost of the dry cask storage system, thick casks become less costly to ratepayers. The State of California needs to compare the long term costs of these two SNF storage systems, especially since the NRC has warned us that on-site SNF may remain on-site for decades, centuries or possibly indefinitely. I urge the CEC and the CPUC to open the scope of the SONGS

decommissioning process to include thick casks and perform a detailed life cycle cost analysis and a cost-benefit analysis between thick casks and thin canisters.

Jurisdiction Considerations

The State possess a proven tool that overpowers federal jurisdiction when it comes to how nuclear waste is managed in California. The State has jurisdiction with respect to the ***economic burden*** California will experience when following federal recommendations related to stranding SNF.[13] When including the real possibility of SNF relocation, the State can demonstrate that thick casks are a less costly option than storing SNF in thin canisters. This provides California a jurisdictional "exit path" away from the nuclear industry's standard practice of stranding SNF in thin canisters.

Desperate Need to Empty the Spent Fuel Pools (SFP)

As mentioned above, SCE wants to empty the SFPs for financial reasons, safety is not their concern on this issue. SONGS SFPs would have continued to hold SNF for decades if the plant was not shuttered. But rushing to unload these spent fuel pools (SFP) into inferior thin canisters makes the ratepayers pay more in the long run and endangers the public's health, the State's economy and our nation's stability.

Living downwind from SONGS, I am personally very supportive of reducing this high concentration of SNF residing in buildings that are not well protected from terrorist attack. But if it is so important that SONGS SFPs be emptied as soon as possible for security reasons, I would then suggest that we close down all other nuclear power plants quickly and empty their SFPs for security reasons.

There are many members of the public that react impulsively, demanding the immediate unloading of the SFPs. I do not believe they are looking at the long-term implications of such a request. Nor do they understand how long it will take to move the stranded SNF once it is placed in thin canisters. To these public peers I pose the following statement:

The 30 months of delay required for US certification of thick casks will be easier to endure now, when compared to the agonizing delay of breached canisters and their radioactive emissions in the future.

We can not let reactive fearful thinking chase us into the profit driven motives of a Utility Company searching for the easiest way rid themselves of short term overhead costs associated with keeping the SFP intact for a few more years. Long term consequences of our actions are especially important when making decisions regarding SNF.

But What About The 51 Thin Canisters Already Deployed at SONGS?

The nuclear industry has a procedure to remove SNF from a thin canister. This procedure **requires** an empty spent fuel pool. This makes keeping a functional spent fuel pool an important piece of infrastructure that must remain intact at SONGS until all the SNF is no longer in thin canisters at SONGS. Once emptied the spent fuel pool's water will cool the fuel and shield workers from radiation while the SNF is removed from the old thin

[13] https://supreme.justia.com/cases/federal/us/461/190/

canisters. The SNF can then be loaded into a submersed thick cask before drying and sealing of the thick cask.

Technically there is a path to rescuing SONG's stranded SNF. But there needs to be political will to apply the ratepayer generated decommissioning funding towards adopting a responsible long term SNF strategy. Hopefully this letter will raise awareness about the likelihood of thin canisters breaching, the ensuing public response and how difficult it would be to move stranded SNF from SONG's.

We have an opportunity for California to once again lead the nation, this time by choosing an SNF storage technology that is clearly superior to the current plan. This is a solution that provides our State with powerful options otherwise not available with the current US nuclear industry standard thin canisters. Our efforts to change the status quo will ease other States into storing their SNF in more robust, longer lived thick casks.

The CEC must look beyond the nuclear industry's standard practice of stranding SNF on-site. Please consider how thick casks can better meet the State's uncertain strategic needs in the next 40 years of storing SNF on our coastline. Bear in mind the Federal Government's failure to live up to its current SNF commitment, which has currently placed significant burden on our State, its citizens and threatens our national economy.

SCE made decisions that resulted in the failure of their replacement steam generators. While SONGS was operational it had, by far and away, the worst nuclear power plant safety record in the nation.[14] Their current plan to place SNF right on the beach in thin canisters that are prone to rapid, unpredictable salt corrosion could once again demonstrate SCE's inability to manage the technically challenging requirements of nuclear power. I urge the State to look at its own interests and its responsibility to the public to ensure that money collected from ratepayers for nuclear power plant decommissioning is used effectively by mandating thick cask SNF storage technology at SONGS. Your citizens are relying upon you to make a decision that will affect every following generation of Californians.

Respectfully submitted,

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[14] https://sanonofresafety.files.wordpress.com/2011/11/safetyallegationson-site2007-20121.jpg