

**San Onofre Special Inspection Webinar
November 8, 2018
Webinar Chat Room Transcript**

NOTE: This document contains all of the questions, comments, and feedback provided by the registered attendees via the chat room feature for the NRC's San Onofre Special Inspection Webinar, which was held on November 8, 2018. With two exceptions noted below, the questions, comments, and feedback are provided as they were received by the NRC, with no corrections made to grammar, punctuation, spelling, or language. For the two exceptions, the comments contained information that was considered Sensitive Personally Identifiable Information, therefore these two comments were redacted and are marked [REDACTED].

- What is the proposed solution for canister #30 which was loaded from the pool before work was halted, but is now stranded and will become subjected to heat overload if it remains in the transfer over-pack, which was never intended for storage?
- What contingency plan is in place if a canister is breached when dropped, or has the potential of exploding due to hydrogen gas build up or other possible causes?
- Will the NRC question Edison about a clause in their contract with HOLTEC that gave them incentives to rush completion of dry cask storage, as claimed by a whistleblower?
- Since the NRC has already acknowledged that canisters may be damaged by metal to metal contact while they were being lowered into silos, how will this situation be dealt with, concerning canisters already loaded?
- Will the NRC hold HOLTEC responsible for their engineering design flaw and find them out of compliance with their license before going forward, instead of overlooking the warnings, as was done in the steam generator "near miss
- Why did the NRC approve a storage system with a 28% chance of disaster in the event a canister would fall 18 feet?
- What Congressional authority does the NRC have to authorize a nuclear waste dump on a military installation?
- Why didn't the NRC inspect the two canisters in question?
- What can you say to the 8.5 million Californians to reassure them that their safety was never in jeopardy?
- Did the stuck canister house spent fuel or greater than class C waste?
- Could the shield ring do damage to the canister? How do you know? Did you test the canisters?
- Why will no one look at the macro set of issues here - not the "successful transfer" of the radioactive waste, but WHY HERE, WHY SO CLOSE TO THE OCEAN, WHYIN CANISTERS THAT CANNOT BE MONITORED, MOVED, OR HAVE THE WASTE REMOVED? These are pigs in a poke, dirty bombs left on the beach. Don't waste time trying to make operations "better" - give us another "solution" because this is a guarantee of disaster down the line. Radioactive for 24,000 years - canisters only rated for 20 years? Do th fricking math!
- How Much does the cannister weigh?
- Why didn't the NRC halt the loading of further canisters until the system could be reengineered so that the loading could be observed?
- Low dose area. Low dose of what - radiation? How much radiation is released under "normal" circumstances?

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- Why no remote cameras?
- This is almost impossible to imagine, that such poor awareness, care, quality assurance, technical wisdom is responsible for a potentially far-regional impacting damaging event. This is damning and should not be allowed.
- Why this location, barely above a saline water table and in a tsunami zone? Why not even a bit further inland?
- In your preliminary report, you did not mention any DESIGN DEFECTS that should be corrected. It seems that there are many such as 1) design of alignment ring is bad because canister can hang up on that ring if operators do not align it properly. 2) no video cameras to allow constant monitoring of the progress of lowering. 3) load sensors on rigging to notice how much weight is being supported at any time. These design defects should be modified before any new loading operations are continued. Your presentation did include some of these issues but not in your preliminary report. **WHY NOT REQUIRE THAT THE ALIGNMENT RING DESIGN BE CHANGED TO ELIMINATE THE RISK OF THIS BEING REPEATED?**
- Are cameras required by regulation or site procedures?
- How can you justify such a reckless disregard for public safety?
- What studies exist about whether there could be a zirconium fire and/or hydrogen explosion if a canister were breached and inert gas lost and air rushed in?
- What stress occurred to the canister during the 53 minute snag? Why didn't you test the canister for damage?
- You said there was "no risk of dropping" but during the 53 minutes that the canister was stuck on the alignment ring, there was some risk that it could fall. Why does the NRC lie about this risk?
- Making a shitstorm better does not alleviate the shitstorm. Don't make the loading of these canisters "better" - change the methodology, move them away from the ocean, and for the sake of our future generations, use THICK canisters. Don't try to correct; change course while you still can. And even if you think you can't - YOU CAN! Just do it.
- How much spent fuel is in MPC 29?
- What regulations are the two preliminary escalated findings against?
- Who is going to be prosecuted for this wreckless disregard for public safety?
- Can you more fully describe the redundant drop protection that you said was disabled?
- Is there a safety conscious work environment concern at SONGS? (poor procedures, poor training, poor corrective actions, poor management oversight all adds up to a SCWE problem)
- Does the above demonstration of the robustness of the handling system, which makes the potential of radiation release in the wake of a non-mechanistic drop event non-credible, factor in NRC's assessment of the severity of the SONGS incident?
- This event was only known due to a whistleblower. Will NRC establish whistleblower capabilities for utility and contractor employees working on decommissioning projects and require all employees be notified of its availability.
- Then why don't you just let them drop all the canisters if it's so safe?

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- During the event while the canister was resting on the inner ring, and while the rigger believed the downloading to be complete, were the important to safety slings ever disconnected from the canister?
- Can you give more details of your specific activities for your future inspections?
- Does the NRC consider this potentially applicable to other licensed HOLTEC Cask Systems such HI-STORM user sites? Are there any industry wide review actions coming out of this event?
- How can you say there is no radiological release if there is no monitoring system inside the ISFSI's?
- Did you say they previously had canisters catch on the ring and it wasn't identified as CAQ? Did they have anything in their corrective action program?
- Has the NRC compared the loading procedures of other cask suppliers with to determine the adequacy of the SONGS procedures? And has the NRC compared the SONGS training program with others to determine its sufficiency?
- Has the corrosion protective coating of the #29 storage can been inspected for damage? That protective coating is applied to prevent cracks due to corrosion. This coating is an integral unit of the Holtec canister safety engineering and must be inspected.
- Does NRC consider this generically applicable to other vertical cask storage systems?
- can the speaker explain the cross-beam lowering more? why was it done by the operator?
- When is NRC evaluating scraping of all canisters due to metal to metal contact with guide ring?
- What was occurring during the 53 minutes unsupported by rigging?
- What does "consideration of elevated enforcement?" What would that mean for the operators if the findings are elevated?
- is there an alignment tool used during downloading to ensure proper downloading?
- What safety management systems exist at SONGS?
- Can you speak to the details of a July incident that went unreported to the NRC? How will the NRC ensure that any safety incidents are reported by SCE within the requisite 24-hour period?
- Why not require that the alignment ring design be changed so it would not provide any surface for the canister to become lodged?
- In the written materials provided, NRC mentioned a prior similar occurrence. Can you describe that event?
- Do 37 fuel assemblies have the amount of radiation released at Chernobyl?
- How is MPC #30 being cooled?
- Has the drop test of integrity been performed under true weight of contents? These tests were performed using empty canisters.
- confusion on oversight vs insight. Does NRC have the ability to stop a downloading of a canister or is it Holtec or who?
- NRC staff said "no immediate" danger. But what about the longer term danger? Isn't cladding and canister integrity important/essential to the long-term safety performance of the

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irradiated nuclear fuel and its containment, even its ultimate disposal? A damaging drop would at of that at accelerated risk of failure, over time, right?

- Why is the MPC holding Spent Fuel larger than training canisters?
- Was the potential for the cask for hang-up on the shield ring - known to be a risk item by the on site team?
- Did NRC approve the training process?
- Why hasn't the NRC investigated the July Unsecured Load Event at San Onofre? Can you please explain what the load was, and if Edison has reported th event to NRC?
- Former Director of the NRC stated that the San Onofre will become a defacto long term burial site, though it is not adequate nor was it ever intended for such. Can you assure this nuclear waste will not be stored at San Onofre longterm?
- It was unclear to me whether or not the operator re-inspected the cannister where it contacted the centering ring. Did that occur?
- Shouldn't the bottom of the MPC involved in the incident be inspected? Thus demonstrating removal is esaily performed?
- What is the estimated timeline for resuming dry fuel storage loading operations at SONGS?
- The SONGS spent fuel pools are slated to be demolished. There will be no option to cut and remove spent fuel to the pools. This is a breach of the NRC rules.
- Why did the NRC conduct and approve the training to be done with a smaller canister than is actually used?
- Would you get close to that canister, given it could be slowly leaking plutonium?
- Does the spent fuel pool still exist at Songs? How many free slots are available in the spent fuel pool?
- What is the time frame for going from preliminary violations to decisions on final violation notices?.
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- Are civil penalties being considered?
- What is the maximum fine that SCE faces?
- Wouldn't damaged fuel mean higher risk (as to workers) of all future handling, shipping, storage, repackaging, final disposal, etc.?
- Stress corrosion cracking has been initiated by the scratching caused by the badly engineered guide ring.
- When can the site begin dry cask operations again?
- Why not use thicker and smaller canisters like the ones used in Europe?
- We have been told that there is NO way to open a canister and retrieve the fuel. What will it take for Holtec to cut open a canister at San Onofre and remove the fuel SAFELY (meaning no radiation release to the local community). There is no hot cell unit on site, and Edison is planning to dismantle the spent fuel pools as soon as last canister is downloaded. How can this touted fallback be implemented?

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- Palmisano said fuel too hot to return to fuel pool due to reflooding issues. Fuel too hot. What's your response to this? Where is evidence that it could be unload in the pool without steam flash?
- The whistleblower identified that the insertion of the canister is a very noisy process with scraping of the metal canister as it is inserted. Will you evaluate the extent of scrapes & scratches found on the canisters ?
- If the canister fell and the canister was deformed sufficiently so the canister could not be removed, what would be the procedure(s) to remove the canister?
- I believe NRC stated a few minutes ago that SONGS stated if the canister fell, some fuel assemblies would fail, but the canister would not release excessive amounts of radiation. Could you please explain what failure of a fuel assembly means in this context?
- What technology do you have today that can inspect for cracks and depth of cracks in the Holtec canisters? NRC staff told Commissioners it doesn't exist yet.
- How will you inspect this canister for damage if there is nothing underground monitoring to monitor it?
- Is the NRC considering issuing generic communication to alert other facilities to this possible problem?
- What surface area of canister was in contact with the ring?
- July 16, were the slings "partially" disabled? You said "not totally disabled." Wiggle room in wording; please clarify.
- You can not say positively that the canister in question on August 3rd is not damaged. In case of a natural disaster such as an earthquake what are the chances of a negative effect on a possibly damaged canister?
- How many more casks need to be loaded so there will be no more spent fuel in the spent fuel pools?
- Will cameras be added to the VCT for downloading? Or increased personnel for oversight?
- If the canister is somehow safe but stuck on the flat-bed mover, is there a procedure to move a canister from one flat-bed mover to another. Let's say a fire totals the engine on the crawler??? Would that be a single point of failure - with no redundancy available?
- Therefore, since all the canisters must have been scratched, as well as the extra fragile high burn up fuel joggled, how will NRC require Holtec/Edison to 1) check both inside the canister for damage; 2) check the scratching depth for % of the 5/8" thick stainless steel gouged; 3) remedy the flawed engineering of the vault and guide ring?
- "Is NRC officially exempting Edison from their License fuel retrievability requirement? Or do you intend to enforce that requirement? Edison's, Mr Palmisano has stated that Edison does not have the technology or ability to return fuel assemblies back to the pool.
- What would have happened if the fuel had been damaged and had to have been inspected and repackaged?
- As you know, the first 4 canisters were loaded into canisters with a faulty shim design..... and Edison is not able to repackage the fuel into a sound canister."
- How do you know that there was no damage to the fuel or canister?

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- ERROR -- there is predicted to be no damage to the canister - you don't know this. It was "estimated" by San Onofre.
- How were the fuel assemblies inside the canister involved in August 3 inspected? Was the canister opened? x-rayed? Something else?
- Why was the training canister smaller than the actual canister? was the design changed?
- Were the operators involved SCE employees or Holtec contractors? Have similar violations occurred with the loss of visual controls by the cask transporter operator at other sites? Is this a generic issue?
- So the California Coastal commission is now in charge of Public Safety? Then why did they say they weren't?
- How can you possibly now that the fuel was not damaged when you have not inspected the canister contents?
- How could supervision be in the low dose area with rookie inspector in the high lift and a rookie operator of the lowering equipment? How could this be and has upper management reprimanded supervisors sufficiently for such lax behavior. How can we be assured that this level of incompetence isn't continued? Totally unacceptable, behavior that should have violated multiple processes or procedures. How did heads roll, or did they roll, or is this just another safety incident that does not get reprimanded in a secondary safety culture?
- What type of protections exists for whistleblower?
- Will the 5-year inspection include removal of the canister to determine if the bottom was damaged?
- How do you know the contents were not damaged?
- Why weren't these safety enhancements put in place in the first place? Why wasn't this situation set up to be as safe as possible?
- If loading system is damaging and cracking the canister walls, this system should be recalled and loading permanently stopped. Hotter canisters will have faster crack growth rate. Why would you allow this to continue since you cannot inspect canister walls to see if cracked? This is not aging management. This is a special unanalyzed condition where metal to metal can cause pit corrosion cracking by mechanical means.
- Is there a certification of operators for the critical downloading event?
- Will a drop analysis be required from now on, or is the corrective action simply going to be enhanced procedures, improved training, equipment enhancements, etc?
- Why did it take so long before loading operations stopped? Why is that not a violation cited by the NRC?
- Given the mixed fuel loads in each cask, and the chance that it is possible that both the primary and redundant load systems might fail again, it seems that Holtec should be required to do a failure analysis. Is this not a sound procedure to require given possible fuel assembly failures if a fall was to actually occur?
- How do you know the canister wasn't damaged? Is there a monitoring system?
- Is there any way to check to see the extent of the damage, if there is any, on the MPC from the incident?

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- How long will this stuff be on the door step of the 8.5 million Californians that live within 50 miles of San Onofre?
- Everything you are saying makes me terrified that there will be a horrible accident at San Onofre. I think all of should be REQUIRED to live in San Onofre for the next 50 years.
- Did the increased radiation levels discovered during the event result in any violation of maximum exposure limits to either workers or public?
- Please provide ML # for analysis of impact of canister drop with canister filled with high burnup fuel or damaged fuel.
- Are the fuel assemblies at SONGS being loaded into cans before they are loaded into the MPCs?
- Has the transfer cask internal diameter been inspected for damage?
- At what point can they resume fuel movement?
- Please state the regulations that the proposed violations will be cited against.
- At this time there is only a "verbal agreement" to cease operations. What is stopping them from loading fuel tomorrow?
- What is the potential for criticality accident if there is a breach. What would it take to bring about a criticality accident?
- How large will the fine be for this negligence?
- When will loading continue? Will that start only after the NRC has completed their process and all corrective actions taken?
- Why is the lack of direct supervision by rookie equipment operators not being considered a Escalated Violation?
- Will loading be halted until finalized report and resolutions?
- Will your findings include Holtec engineering design issues? A system with such small clearance that causes metal to metal contact should be unacceptable.
- Would a similar event be possible with a standard above ground ISFSI? Or is this very specific to a UMAX design?
- Why is there no Hot Cell at San Onofre.
- You showed a picture of the alignment ring. Was that the actual alignment ring from that canister? Do you know exactly how the canister was suspended on the alignment ring? How much of the ring was supporting it?
- Can and will this canister be removed so the contact area can be thoroughly inspected?
- When the canister inspection is performed per AMP, will it be done based on -72 or based on -71, i.e., to determine if canister is safe to transport as opposed to safe to store.
- Will the protective coating of the Holtec canister be inspected for damage by the alignment rings both in the installation process and for storage unit #29? These are critical "long Term" issues at the storage site.
- I think a "civil penalty" was mentioned, I didn't hear the response well. Could you please repeat?
- If a crack has started in one or more of these canister walls, how soon can it grow through the wall? Please provide your analysis.
- why do we believe this did not occur with previous canisters and no one was told ?

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- You said there was no damage to the canister. Did you inspect it?
- How many other incidents were not reported by safety personell due to concern for an understanding of the gravity of the situation or concern about loss of employment? Did the NRC look at all paperwork for the loading of all 28 previous canisters for possible similar issues or other safety incidents?
- In NRC's faq, you stated all loaded canisters likely had 'metal to metal' contact. Since technology does not exist to inspect canisters for the scraping, and therefore cracking initiation that this would cause..... What's the plan?
- Why is there no Event Notice filed for MPC #30, since it is not approved for storage in a transfer cask?
- Is there a legitimate engineering reason why Edison and other facilities around the country are using thin steel canisters (5/8ths of an inch) instead of thicker 20 inch iron canisters that are used in other countries around the world, or is it simply a matter of money and politics?
- Why isn't a more sophisticated computerized centering system required for this highly sensitive maneuver?
- Clarify. Is there damaged fuel that can't be moved in the usual manner? If so, will the NRC require licensee to open and repack, which would require them to implement a saft way to do that?
- why was NDT inspection not done on canister following accident, prior to placement?
- 1/4" clearance between the guide ring and canister?
- Would it not be better to have larger gussets and more gussets that would ensure that the canister could not get stuck on the alignment ring?
- When will the NRC meet its obligation to the public to provide a permanent nationwide storage for nuclear waste?
- Brand new VCT operator without supervision? Really?
- A half inch, an inch of adjustment doesn't sound like much when there is only a 1/4 inch of leeway. What am I missing?
- NRC says 16 years for a thru wall crack to develop once a crack is initiated. Loading initiates cracking..... ?????? omg
- 20 years of unprecedented exposure before we look for CISCC?
- How is it cooled in the transfer cask? forced cooling or passive?
- How are the sides not scraped when loading if loading into slanted overpack? Gravity does not slant as it drops.
- Why doesn't the NRC require real time online radiation detection at San Onofre to protect the public?
- Is the chloride stress corrosion cracking prevented by the coating applied to the exterior of the Holtec storage canisters? This coating may have been damaged during the canister #29 incident, and may be a factor in all of the canister installations using the guide rings.
- The 30 years is no longer valid since EPRI found a 2-year old Diablo Canyon already cool enough for salt to dissolve on the canister.
- Does a transfer cask vent?

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- Is the canister scratched during the lowering process? And, if so, would not scratches or gouges speed up the stress corrosion cracking process?
- Please make ALL radiation levels/reports known to the public on a real-time basis.
- What about the Areva cans?
- What are those 'acceptable' radiation levels from the ISFSI?
- From the photo of the shield ring it would seem that some of the "gussets" (the vertical steel components of the shield ring) it's apparent that the design is intended to slope to the inner edge of the shield ring and thus guide the canister past the shield ring. The other photo, of the actual "gusset" in the Aug 3 event, shows it does not go all the way to the edge of the guide ring, thus creating a flat spot, resulting in a potential for hanging up. Why was this missed during quality assurance processes from the manufacturer? Why was quality assurance not identified as a license violation?
- Define "significant" in mathematical terms.
- Is there sufficient cooling on canister #30?
- Conditions at DCNPP ISFSI canisters have been by measured by EPRI that are conducive to CISCSC several years ago, only less than 2 years after the canister was loaded and stored. How can we wait 20 years for aging management plan when D. Dunn of the NRC has stated that CISCSC could take only 15 years to breach the canister. Is the 20 year period too long, raising the possibility of breached canister before ever being inspected?
- What is the justification for storing the fuel so close to the ocean and the tideline? what reasoning was used to justify that space rather than on the other side of the 5 fwy?
- When it was identified the load was unsupported, why did it stay unsupported for 53 minutes? Why didn't they raise the VCT and the slings?
- Again: All you have is a verbal commitment to stop loading fuel. What's stopping them from loading fuel tomorrow? Why has the NRC not issued an order to cease and desist?
- what is the logic of waiting 20 years before the first inspection. Isn't that assuming the best instead of guarding against the worst?
- Radiation monitoring devices placed at distance (on the fence) is NOT the same as real time radiation monitoring. Why does the NRC not require real time radiation monitoring? Even your moderator admitted he didn't know why that was the case.
- Regarding a zirconium fire, you are referring to a spontaneous ignition are you not? An explosive device or jet fuel fire around a burst canister is not considered. Is this correct?
- But it is not in the ISFSI. It is in the fuel building, inside a transfer cask? Please describe
- If there is a breach, how does the heat reach the canister wall?
- Does not high burn-up fuel like that at San Onofre require longer cooling time than 5 years before being put in dry storage?
- Have they ever actually tried dropping a full canister to see what would happen?
- If a tarp were thrown over the top of a canister, blocking natural convection, how fast would it heat up?
- What about sea level rise corrosion?
- Why sample containers during inspection instead of comprehensive inspection of every surface of every canister.

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- Your people keep saying, "We don't BELIEVE..." that there will be a problem. Belief is subjective; how about objective scientific facts?
- HOW WOULD A DAMAGED CANISTER WITH HIGH BURN UP FUEL @ 300 TO 500 DEGREES BE PUT INTO THE FUEL POOL FOR OPENING TO REPACKAGE WITHOUT CAUSING A STEAM EXPLOSION EVENT?
- Darrel Dunn of the DRC says CISCC 15 years is all it takes to breach a canister once conditions are sufficient to allow CISCC to begin. 2 years after DCNPP loaded two canisters the conditions that allow CISCC were present on the canister surfaces. All measured and documented by EPRI... This is a scandal that we are giving our children and grandchildren.
- How did you conduct the inspection of the cannister for dents, scratches? manual and mechanical methods?
- What is the procedure if a canister were dropped and it is not possible to remove the canister due to deformation of the canister that occurred during the drop?
- How did you conduct the inspection of the cannister for dents, scratches? manual and mechanical methods?
- What is the procedure if a canister were dropped and it is not possible to remove the canister due to deformation of the canister that occurred during the drop?
- how does the cooling of #30 differ from the cooling of loaded in ISFSI ?
- What would happen to the ISFSI system if it were to be covered by a large wave event like a tsunami?
- How could inexperienced operators be left unattended during such a process?
- Why are you placing so much nuclear waste on a military installation which is a legitimate target of war?
- How often are these crucial operators of the unloading rig replaced? What is the turnover time? How long can an operator build experience and skill?
- You are not asking this question: Why not require CHANGING THE GUSSETS so that there is no way the canister can become stuck on the alignment ring?
- You are not asking this question: Why not require CHANGING THE GUSSETS so that there is no way the canister can become stuck on the alignment ring?
- Confused here on precisely why we are assuming there is no damage to the canister and fuel...?
- What if the canister could not be removed from the silo? Due to damage to the canister and silo
- HOW LONG WOULD IT TAKE TO BUILD A HOT CELL?
- Why is there no hot cell required at San Onofre?
- I don't understand how AIR COOLING can occur in transfer cask #30. Please describe.
- you mentioned the licence apps in NM and Texas--do regulations allow transport\over roadways even if the facilities are opened
- Why is there a cat on the lid of the Holtec Umax system photo at San Onofre?
- All these "maybes," or "we might" - guys, this is HIGHLY RADIOACTIVE NUCLEAR HOT FUEL! Why didn't you figure this out BEFORE you stuck this in the ground at the beach.
- How long do we have to wait? 24,000 years?

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- According to an NRC document, criticality can occur if water enters through cracks. The boron is only certified for canister loading, not storage or transport.
- Regarding criticality, the fuel was loaded while still in water in the fuel pool
- So its not possible to drop the caniser, yet we were so close. What a gross oversight.
- So, since we know the redundant drop protection does not actually work, they should be required to analyze this drop. WHY NOT?
- Dry run? Did it weight just under 100,000 lbs.?
- San Onofre has pulled out a LOADED canister from the ISFSI? or a dummy....
- Are these canisters ever really going to be moved to a safer location?
- It makes me wonder how hard it would be get the contents out of the lid of the canister. That analysis should be made by the NRC, it should be required, all possible combinations should be considered. Gross oversight by the NRC by not requiring the analysis of how to get the canister out.
- if either of the slings can hold the full weight of the cannister, woudnt a failure on one side cause an imablanace or swinging that could lead to a similar misalignment or drop? shouldnt there be another redundant PAIR of slings?
- How did SONGS "informally" notify the event, and how did that not satisfy the reporting requirements?
- How are we suppose to know if there is a crack in the AREVA cans?
- How is resting on the ring the same as if successfully loaded (as just stated) when during the accidnet all the weight was on one location ?
- I hear there is no immediate concern for the damage of the canister - yet it is scratched and therefor cracked - under the terms of material engendering" - as pit corrosion cracking. In a saline environment is important to address-
- But you have no way to find cracks! You have no ability to repair cracks right now in these canisters!
- What will the NRC do to assure these cracked canisters are replaced?
- How many PSI can a 5/8 inch piece of stainless steel withstand without damage? Over 100,000 PSI?
- How can thick casks be mandated?
- Note that canisters are generally qualified to be subcritical when fully flooded with water. This is a condition from transport licensing.
- How will anyone be able to inspect the damaged canister?
- Given this high burn up fuel is so hot - there is no possible way to offload to the pools. So what is the protocol for offloading if needed in the near future?
- How can Holtec cut open a canister without a hot cell?
- Why not require NRC oversight of the burial of all further canisters at San Onofre?
- In the AMP, would San Onofre have to provide an action to remediate CISCC that could be immediately deployed? E.g. have the containment device or techniques to remove the fuel, repair, or re-encapsulate the damaged canister pre-approved, onsite, and able to be used immediately. Emphasis on immediately.
- Will Edison and Holtec be fined for lack of staff on August 3rd?

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- There was a statement made that many of the canisters could be cracked/damaged. Do you believe they could be damaged and how will it be verified that everything is safe for the public and the environment? How can we be assured we are safe??? I have three children, we live in Carlsbad, CA just a few miles south and we love our ocean.
- The inspection identified two operators who were on their first loading campaign, is there a requirement to have direct oversight for a period of time?
- Sounds like the people at the site became complacent. If the NRC knows this happens after the NRC inspections are completed, why doesn't the NRC perform more unannounced inspections?
- you've just acknowledged that you have failed at oversight. Why are you not insisting on San Onofre to now have NRC on site at all times going forward?
- Did the NRC observe the loading of any of the real canisters being loaded into the vaults? This wasn't clear from the ISFSI inspect report.
- How are you going to ensure they are going to work safely and be knowledgeable to secure safety for the public?
- Tsunami brings debris which would move into the annulus between canister and silo. What if the debris made it impossible to remove the canister, another scenario that the NRC should use as a reason to analyze a stuck canister and procedures to remove the fuel if a canister is stuck. You are not thinking outside your own box, Canister 29 is just one example. What about a hurricane with 20 feet of storm surge bringing debris into the annulus. Has the NRC included a procedure to inspect the SONGS ISFSI after a hurricane (global warming could bring this rare weather condition to a common common feature). NRC needs to include this condition as a common ISFSI procedure rather than a special condition after the fact. Procedures need to verify canisters are removable after the event with 100% assurance. Come on NRC think beyond sunny days with no problems, think how Canister 29 occurred
- What about metal to metal contact????
- Why doesn't NRC require the licensee to have procedures for dealing with a dropped canister if it is possible to drop a canister when the redundancy requirement is not followed? It is not reasonable to assume that the redundancy requirement will never be violated, as happened here.
- How can the NRC requirements be met by SCE if they are slated to demolish the Spent Fuel Pool, a key requirement if the canister needs to be unpacked or inspected?
- It sounds like you are just passing the buck, don't you think that handling nuclear waste, the most dangerous substance known to man, should have an expert that is the same person, always there to run things with military precision? There is no room for errors.
- What evidence do you have to claim no damage to walls of the canisters from the metal to metal contact between canister and guide ring????
- What about sea level rise flooding at San Onofre?
- What is seismic rating of a partially cracked canister?
- What was done to ascertain whether or not there was damage to the fuel as a result of the Aug 3 event?

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- The sea wall is not maintained.
- NRC Condition 8 REQUIRES a change-out facility in the case of a canister.
- How many hot cells have been used in the US?
- How long would it take to build a hot cell?
- What other ways besides a pool and hot cell to repackage canisters?
- What if the emergency is fast breaking? What if there is not time for the company to apply for, and NRC to approve, a hot cell to deal with a fast breaking emergency?
- Less than 2 nanometer scratches can cause cracking on the HOLTEC.
- How are the licensee not required to have a hot cell on site? And or the fuel pool? What other options exist.
- Are you re-examining or revalidating the quality assurance of the Holtec systems, considering that the existence of a flat spot on the guide ring exactly where the vertical part of the guide ring is designed to eliminate that exact issue? This is the second Holtec engineering issue (loose shims being the first). Who is doing QA? The manufacturer itself? Is an outside objective QA process occurring?
- You keep using the words “don’t believe” what are the facts?
- The chromium oxide coating can only be integral below 2 nanometers scratches.
- Just examined the photo of contact point of silo/canister, why not open up the silo and look at the damage before determining the canister is done
- Has NRC posted your summary comments somewhere we can access?
- Our analysis indicates significant gouging to the canisters that exceed 1/4". Have you examined MPC29 to find these gouges?
- How long would it take to install a hot cell at San Onofre?
- What is reference for 1/4" depth? The chromium oxide film is only approximately 2 nanometres.
- You've said whistleblowers can contact NRC at any time without fear of harrassment and retribution. [REDACTED].
- Scrapping the film on the canister is cracking it. There is no shipping a canister not designed for transport- so why would you say it could be shipped for repair! Is anyone reading these?
- Will all the slides that have been shown in the webinar be posted to the NRC website (e.g. Slides 34)
- What about the corrosion from two types of metals with the standoff pins?
- Will the full deck of slides be made available to the public (and not just the 32 slides provided for the webinar)?
- I am unclear on the tsunami question: does the gentleman mean to indicate that the ISFSI pad could be submerged under 125 ft of water without significant radiation leakage or damage? or merely that projections of tsunami flooding do not indicate that the pad could be submerged?
- Again, what is stopping Edison from loading more fuel tomorrow? All you have is a "verbal" agreement. Is there anything in writing?
- Can the NRC please advise the public about the use of the chromium oxide coating that prevents long term cracking and the effect of the loading process, in specific point please

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advise of the scratching of #29 fuel storage canister for public information. The chromium oxide coating can be intact only with less than 2 nanometers depth scratching. Otherwise the cracking process can be initiated due to the compromised chromium oxide coating that is a questionable integrity for the process of loading spent fuel canisters into a guide-ring cylinder.

- Get them to address the question, which was passed by: how long would it take to install a hot cell at San Onofre, if needed? Who would be responsible for it? How much would it cost and who would have to pick up the expense?
- NRC speaks confidently about the insignificance of the damage done to this canister in this incident. But what about the sum of the parts -- the damage done here; the quality assurance violations in design and fabrication of Holtec canisters, [REDACTED] What if the damage is the straw that breaks the camel's back, leading to failure of these containers?
- are the downloading procedures video recorded? if so, did you use these recordings in the determination of your findings?
- Would a similar event be possible with a standard above ground ISFSI? Or is this very specific to a UMAX design?
- Were my questions submitted? I have not heard them addressed about procedures and training programs at other sites and other vendors
- ML13032A008 for criticality if through wall crack and unborated water enters canister.
- Why can't NRC require drop testing?
- Will you please order a Stop Load until this is thoroughly resolved?
- OMG!! Do you hear your selves! The fox is garding the henhouse
- Where do you find the comments?
- On November 29th, there will be a Community Engagement Panel Meeting. Can a NRC representative attend?
- BUT THE DROP ALMOST DID OCCUR! To not require analysis is a pathetic disregard for your requirements!
- Drop test isn't required because the NRC does not believe the canister will be dropped? Wow, talk about sunny conditions spedifications... NCR needs to be more diligent in their process of deciding what to specify.
- Why are you not pulling the the fuel handling permit from Edison?? Especially until thick casks are used and a sound storage design is implemented with a hot cell.(which the Holtec system is not)
- How was the picture of the shield ring taken, when it is 4 ft down in the hole?
- When is the cone shaped lid removed?
- Is there a plan to require full-scale cask size for training purposes?
- Is there a way for the public to intervene to require analyssi of this drop?
- If the canister were dropped, is there a way to get it out, if it became lodged in the pit?
- But there was a near miss event! NRC has to include human error.
- You have not answered my first two questions. My third question is: Since both drop protection cables are attached to the same device (and went slack at the same time with the

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same controls), how come that considered redundant? Experience proves that it is insufficient!

- WRONG! You need to consider the possibility of a drop!
- Yoo hoo! Once again: How much would a hot cell cost to install at SanO, who would pick up the expense, how long would it take to install? Is this a pre-existing piece of equipment that can just be picked up and brought in, like a used car from a lot? Or will it have to be constructed from scratch? Or brought in from another nuclear facility?
- Are there differences between the Callaway loading system and the San Onofre system? e.g., clearance from canister to canister guide ring?
- Did the same VCT operators lower canister 30?
- Did the same VCT operators present for the Jul event?
- Why wasn't there a load cell with a power cutoff if load was lost on the cell? Isn't this a design flaw?
- How many years are the canisters expected to function at SONGS, and do the flood studies take into account expected rises in sea level over that period of time?
- Shame on the NRC for saying the canister did not drop so we don't have to consider situations that follow a dropped canister. Can't you see that it is possible that this situation is possible again with humans involved? I am now much more concerned after hearing the NRC's prezel logic to avoid protecting the public. As an engineer I am apalled that the NRC would not take this as an opportunity to ensure their is not possibility of a dropped canister.
- Are horizontal vaults inherently safer than vertical vaults?
- On Oct. 10th Simpson indicated that the NRC 'had urged Edison to file an event report as was done with the August 3rd near mis event'. Has Edison complied with this NRC request and 10 CFR requirement?
- what is the difference in inches between guide ring and canister at Sano and Callaway?
- how many people analyse whether what you decide is adequate? For example who decides that "dual redundancy is sufficient? What are the qualifications of these people, and is there a mechanism in place for other qualified people to challenge decisions in order to come up with the best final NRC rule?
- There are not two retaining features when one failure caused "both" to "Fail".
- For the proposed interim storage facilities, are vertical vaults also planned?
- Hi Rachel! Rather than a "nuanced approach" to lowering the canisters, wouldn't it be consistent with all NRC safety requirements to engineer a failsafe system and then insure it's produced as designed through effective QA.
- The pictures clearly show that there is only one device.
- Will you share your radiation report with measurements of each of the inlet and outlet air vents in both the Holtec and Areva system?
- How far has a fully-loaded canister been dropped for test purposes? (Full weight but presumably not loaded with spent fuel.) And onto what sort of surfaces?
- Using the analogy that football players experience brin damage from impact despit wearing helmets.... there is still significant impost to the brain. When the cannister was lying with it's

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weight shifted, jostled, doesn't this warrant that the canister be opened in order to inspect the fuel?

- Scratch "Hi Rachel" from previous.
- What happens if a License is not renewed??
- Could you please mention that Holtec only warrants the system for 10 years and the cans for 25 years. Were you aware of this? Is this Okay with the NRC?
- please read chat question in it's entirety when you state the question, your summary is changing what's really being asked.
- Does NRC have any indication on the ability of a different type of canister (such as a thicker bare cask like Castor) to provide greater safety and repair benefits than the thinner canisters, such as MPC-37 used at SONGS?
- Gently with 50 tons.
- Previous inspection reports of the San Onofre ISFSI provided an inventory of each canister as an attachment, including kW. Would you please include these in your future inspection reports?
- What is the structural rating of the shield ring?
- Has the shield ring been analyzed for structural strength?
- Holtec warranty: <http://bit.ly/HoltecWarranty>
- How is the guide ring attached to the wall?
- What is the shield ring actually designed for?
- Were the NRC engineering requirements for San Onofre's flood/tsunami made before estimates of climate change induced ocean rise and storm surge increases?
- Is there a way for the public to intervene so as to require an analysis of this possible drop?
- Earlier you said they'd either have to pursue a license renewal for damaged fuel, or retrieve the can? Which would they pursue, would the NRC make an exception for a canister with failed fuel?
- What are the green things in the picture of the shield cone?
- And if so, are there any remedies or mitigation possibilities for protection against ocean incursion into the ISFISI?
- The tech specs call it a MPC Guide with the sole purpose of helping to guide the canister into the hole. It's not a shield ring.
- How often are the canvas sheaths for the cables removed for inspection of the cables themselves? What regulations cover this?
- Here is a copy of the Holtec 10-year warranty secured under court order. The system is warranted 10 yrs. The cans are warranted 25 years. Is this an "NRC-Approved Warranty?" <https://bit.ly/2PjAeZZ>
- I understand that the NRC has determined the MPC canisters are robust and acceptable, but are they absolute best option available for safe longterm storage?
- How was the picture of the shield ring taken, when it is 4 ft down the hole?
- Please continue conducting webinars. Eric did a very nice job explaining the problem and the causes of the problems. Thank you for answering the questions so frankly and in plain english.

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- How can a canister weighing 1,000 lbs rest “gently” on a ring that is not designed to hold it? Can this canister itself be inspected while underground?
- Why not require more gussets on the shield ring?
- If the gussets are "there to guide the mpc into the storage vault" why is the fact that they actual fail to do what they are designed to do not being addressed by your inspection report? Do you verify quality assurance?
- Who is the NRC material engineer(s) you consult with on the potential cracking issues you discussed today?
- I'm worried about the amount of radiation during loading if you have to have a low radiation area where people should stand. Can you explain why that is needed?
- The other picture of the shield ring....
- It is obvious that the gussets are too far apart.
- If the gusset came flush to the shield ring, that would still not solve the problem because the area between the gussets could still catch the canister.
- Will such an engineering enhancements be made at SONGS? Such as at Callaway?
- Why not require the gussets be fixed as a corrective action?
- Correct Alignment requires human intervention. Humans make mistakes.
- without cameras, how can they tell which way they need to adjust the canister to center it?
- Imperfect gussets and loose shim pins. Are we proactively looking for future issues caused by Holec mfg?
- But they cannot align in that tight space? Operators say not possible?
- Why not require that the gussets be enhanced?
- Thanks for answring my questions!!!
- what contingency plan is there for when a canister is lowered halfway, and a tolarance mismatch wedges the canister?
- It looks like there's a gap between the shield and the cannister wall, rith? Is this a design or aging problem?
- Is the high turnover of workers due to radiation exposure?
- That 1/4" ledge is the engineering flaw that would seem to insure scratching at the very least during the loading. Scratching the sides of thin stainless steel will begin the corrosion process of stainless steel on the oceanfront. The super high heat from high burn up fuel will also speed up corrosion for through wall cracking according to studies I've seen. Has the NRC calculated this risk?
- So the inspectors were avoiding the radiation of down loading the canister into vault?
- Point to the gap so I know you're talking about the same shield ring gap
- Is there any type of quantifiable requirement by NRC for qualifications for frontline workers and supervisors actually performing the work or is the that purely the judgement of the licensee?
- Do you think radiation is an issue to the 8.5 million people within 50 miles of San Onofre?
- What are the potential civil penalties that may be assessed?
- Are continous levels of radiation going into the open air and the further immediate environment from the air vents in the storage system?

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- Could you please expound on the metal to metal contact that occurs during loading? We are VERY concerned about this, especially since the canisters can't be inspected.....
- Must maintain oversight, what happened on canister 29 should not be allowed with the same procedures. NRC should make sure it is not possible to have the inspectors/supervisors to witness down loading.
- i'm looking at where the RING doesn't quite touch the wall
- There is a requirement for training per CFR. But is it quantifiable?
- Workers are loading blind. Are they giving them cameras? They cannot see in those holes. Is that problem being fixed?
- I'll ask the question again - to minimize the alignment problem - why isn't NRC investigating an alignment tool to help guide the canister past the gussets?
- Mr. Pruitt, you said that the metal shards on slide 21 are probably "paint" scrapings. Are the cans and vaults painted? Why would they paint stainless steel? Are the walls on the vault made of normal steel?
- Why not have two spotters? Rad dose is less there, so increase the number of trained eyes on the job?
- Why is there such high turnover of workers at SONGS?
- Why was the inability to view the work from the low level area not something found by an NRRC or vendor inspection ?Whats is being done to preclude this happening again.
- Seems like experience and gained skill is crucial.
- Please provide the tech reference for the transfer cask cooling system? I don't see it.
- You did not answer the qualification question. Is it objectively quantifiable or is it the judgement of the licensee. Where are these requirements/standards detailed?
- 50 tons on a 1/2" wide gusset could easily deform a 3" bottom of the canister. Its not a scratch, there could be deformation of the canister bottom.
- The paint is there to protect corrosion. Since it's scraped off, how are they mitigating that?
- where do we find the monitoring reports?
- What do the NRC's metallurgists say about scratches on the cans causing Chloride-Induced Stress Corrosion Cracking? Does the NRC have metallurgists?
- Once a year reporting on radiation is totally unacceptable!
- How should I search for the monitoring reports in ADAMs? Name please.
- The internals to MPC are there for proper gas flow for needed cooling. What about the strength needed to withstand the reported incident in August.
- Is there an outside private agency that measures radiation levels or is it only left to Edison to measure and report these levels to the public
- Why does the NRC not include the risk of fire from build up of hydrogen gases from hydrides from the high burn up fuel, as well as from the zirconium cladding?
- During the implementation of a typical aging management program, once the "highest potential" canisters are identified, how are they inspected for cracks? What is the process?
- high burnup fuel creates zirconium hydrides and uranium hydrides. Combined with air creates hydrogen gas. Zirconium hydrides ignite at 270 C.
- Is that the divider shell for canister 29? Again, how was that pic taken?

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- When there is potential through wall cracks from corrosion from scratching combined with the high burn up fuel?
- Where is canister 30 in the transfer cask being stored?
- Does the transfer cask absorb radiation?
- Okay, just so we are clear, the outer shell is "coated carbon steel" and the coating is what Mr. Simpson calls an "impact absorbing paint," correct? Is this steel subject to rust from the salt air?
- The through wall cracks can allow oxygen or moisture to enter the canister..
- You've said, "We'll see" regarding cameras, and maybe they'll have more than one spotter. As regulators, why does it sound like you are outside observers? Don't you have the authority to require these changes? Why is it possible for them to proceed in a manner that you won't know until you happen to inspect?
- Why not demonstrate the ability of removal of a canister and the procedures proposed to removing a canister by doing a visual of the bottom of canister 29?
- Does the air moving through the annulus between the canister and transfer cask cool the canister (convection) or is it transferred from the canister shell through the transfer cask shell (conduction)? You seemed to give two different answers
- Although the bottom of the canister is 3" thick, the outer side wall is less thick and would have been leaning against the transfer cask when it was out of position. Wouldn't this stress that thin wall
- Repeat question that has not been addressed: Does not high burn-up fuel require longer cooling time than 5 years before being put in dry storage?
- Did you get these questions, because they have not been answered. Please confirm.
- I like to know why the NRC does not require a multi-billion dollar bond paid for by SCE to pay for any future costs related to San Onofre instead of leaving those costs to be funded by Southern CA rate payers or US tax payers?
- How will Edison determine the status of the bottom of the canister that may have incurred damage from the 50 tons weight causing gouging while moving against the edge of ledge beyond the gusset?
- If slide #21 is of the actual problem vault, why do we not see the canister?
- How hot does the fuel get in the transfer cask? Will the NRC provide the thermal analysis showing the cooling is sufficient? I have not seen this nor NRC tech documents that address this. How long can a canister stay in the transfer cask before overheating.
- no, it was only 4 ft down
- Seems like an abundance of caution of radiation of employees of SCE and the NRC but there seems to be a reluctance to do any additional inspection of canister 29 to assure integrity, which would provide safety of the public... Abundance of caution for the public please!
- Regarding canister 30: Does the air moving through the annulus between the canister and transfer cask cool the canister (convection) or is it transferred from the canister shell through the transfer cask shell (conduction)? Note: Seems you said convection at start of Q&A and later the conduction answer...

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- On Aug. 3, was it the first time performing the work without supervisorial oversight for *both* the spotter and the vertical cask transporter operator?
- How would it be possible to mitigate, as you said, cracks in the canister of any size?
- At time of 2:16 a scratch was mentioned as not being urgent. SCC is also dependent on levels of tensile stress and temperature. I am concerned that the "scratch" will change the compressive stress envelope to tensile stress. The chloride levels are high, the temperature is very high, if there are tensile stresses then time for SCC cracking will be fast, immediately not delayed.
- I thought you said they didn't have a way to light it back out if there was a problem?
- Plenty of time to build a hot cell = how much time?
- How hot (thermally) is the exterior of the canister? Is it different temps on the top and sides because of the different thicknesses?
- You've allowed over 27 years to develop inspection and repair technology in these thin-wall. Why should we be optimistic about either?
- WHERE IS THIS HOT CELL COMING FROM?
- HOW LONG DOES IT TAKE TO GET ONE ON SITE?
- Has a hot cell ever been used to open a canister EVER in the US?
- WHO PAYS FOR IT?
- What about the 1st four cans that have been buried & have defective standoff shims (bolts). Since demonstrated broken on the 5th can, can we trust the bolts can/will withstand the weight of the a fully loaded can?
- Why does the NRC not list any "service related" issues that are related to the cannister maintenance for the next 50 to 100 years? If the NRC is not able to provide such a list, why is the NRC so confident that the current long term storage site will provide leak proof storage of San Onofre's nuclear waste to become non-radioactive no matter what Nature has in store for the future?
- Farenheit or Celcius?
- Are those scratches on the CEC with canister 29? And what is the whitish looking material on the canister lid?
- can you provide a diagram showing a cutaway side view of how the cannister was positioned when it got caught on the guide.
- Have you heard of the HELMS proposal for long term (1000 years) storage? It was submitted to the NRC for study earlier this year by Ray Lutz of Citizens' Oversight. It could be used as a system to enclose these canisters when they begin to crack.
- Does the NRC consider allowing PROMISES to be able to figure out how to inspect, repair, retrieve fuel, inspect fuel to be a strong regulatory framework?
- please just take the question #2 ASSUMING THE CANISTER IS BREACHED AND THERE IS EXPOSURE TO AIR OR WATER PENETRATION. It is not safe to assume the situation would allow time to build a hot cell!
- Thank you
- Or could it be dried salt from the fog that comes through the air vents?

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- with that yellow marker, please point to gap between ring and wall that I keep asking about but haven't gotten an answer.
- Waiting for a crawler to find SCC cracks is unacceptable. Any visual inspection to find SCC is too late. Acoustic Emissions testing and transducers will well detect any SCC initiation at beginning, don't wait for cracks to grow to find visually.
- Again, how do we intervene to require that the licensee analyze this possible accident?
- Does the US intend to continue the production of nuclear energy given the longterm hazardous material?
- Do you guys have nuclear engineering degrees?
- Comment: A lot of your statements today began with some form of "I believe..." or "I think" without providing technical references to support your OPINION.
- why dont you insist on having a hot cell on site NOW?
- how do we provide more comments to NRC?
- The public is sceptical.....
- Would prefer phone calls, so we can have more interaction with our questions. Also, would prefer a local public meeting.
- How can the licensees inspect or monitor their canisters?
- I'm going to write a very critical newsletter about this proceeding if you dont answer the key questions!
- The webinar shows me that the NRC believes most of the dangers I've been concerned about are unimportant. I look forward to reading the responses of other experts outside the NRC to your assurances. In other words, I've learned a lot from your point of view but I want to check it out with other experts.
- how do U ensure the safety of the 8 million people within the 50 mile radius of songs/
- So how can we hold the licensees' feet to the fire and do their jobs properly?
- Comment: With 10,000 dry casks either loaded (about 3,000) or to be loaded from existing spent fuel in America, far too much reliance is placed on "training" even while "complacency" is obviously a problem. With 10,000 casks (and more every day the reactors stay open) and each one needing to be moved at least twice (if an Interim Storage Location becomes available), a far better safety program is needed. NRC should be "out inspecting these licensees" far more often. And unannounced.
- Comment: I thought Eric did an excellent job of explaining the SI results, and displayed excellent knowledge of the subjeqy matter. Troy provided the right level of management input and support in areas that Eric may not have had the program level knowledge. Well done.
- Erik, so would you say SCE should have more participation and training during each download of canisters?
- Please clarify! The spotter and vertical cask transporter operater were BOTH doing their jobs without supervisor oversight for the first time?
- "Feedback: Please be fully transparent - there is incomplete information here that leaves viewers confused or mislead. Please acknowledge that this facility is defective and must be no Longer used - every canister loaded is scratched and therefore cracked. A hot cell needs

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to be required to off load hot fuel. The pools will not work. A 100k canister would be completely deformed at 5/8 inch thick from 18' - Require actual safety - we are counting on you.."

- If engagement by licensee is THE difference in safe performance, does the NRC self-examine to see how they can improve in their role as licensor to improve engagement?
- Given that Edison created this fuel under the impression that there would be a national repository, would you consider it fair for Edison and other companies to be getting national assistance and help for maintaining a safe procedures and monitoring systems for this fuel?
- We are 15+ years into San Onofre's loading of dry casks. Obviously nothing is adequate about how it is done there or anywhere else.
- The crawler might have a hard time getting into s 1/4 inch annulas at SONGs
- While the Webinar is a good way to cover material for numerous people at a low cost. The difficulty is answering questions. At NASA they log a question with a RFA (request for action). That question needs to answered and the person should be notified of the answer. Everyone should see these Q&A's. That is fully transparent. That would be a great follow-on to these webnair.
- How much longer will the loading take.
- Are you suggesting that it is up to the public to insist on petitioning for hot cells and drop tests? Things are worse than I imagined at the NRC.
- So no backup plans are required for a failing canister?
- Why wouldn't the NRC err on the side of protecting us rather than having us petition for more oversight?
- In the case of San Onofre, there's no room for cameras or apparent ability to do any other checks after loading into the vault. The industry reports I've read indicate that robotic inspections can't determine depth of cracks or whether a crack is an imperfection or a crack or any other characteristics. Why does the NRC not stipulate that the SONGS/Holtec system allow for that?
- My biggest concern is the damage to all the canisters from the guide ring -- scratching and banging against the guide ring, initiating cracks.
- It was just mentioned that robotic inspection will be done under aging management and the technology is well known, this statement is contrary to NRC's 2014 document. When can I found the technical description of the monitoring? Thanks.
- There's no ample opportunity to make repairs There's no question about this... The woman speaking is not answering a CRITICAL QUESTION- the robotics are not effective NRC need to require a hot cell- Edison has not been able to prove they can handle any form of emergency: Why has the NRC offered so many safety exemptions?
- Cameras cannot find microscopic cracks nor crack depth with a camera. See details at SanOnofreSafety.org
- Why is there no requirement for inspecting the interior of the canister to know the condition of the fuel and fuel basket?

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- Any residue from PT testing fails the test. An NCR. You can't be casual about not conforming to all written and approved procedures. That is an NCR. The welding inspection is not acceptable according to your own written procedures.
- Do you consider the 51 Areva canisters at San Onofre, which are 15 yrs old, to be 'transportable' in light of the fact that neither the canisters or fuel can be inspected?
- if the shim pins at the bottom of the sims are broken, now can proper ventilation occur?
- How involved has Edison been in the oversight of the moving of this waste? You mentioned on the webinar that the big difference in the success of these storage situations is how involved the licensee is. How would you rate this licensee as far as being involved since the beginning of this process and going forward?
- This Holtec system must be recalled! <https://sanonofresafety.org/2018/11/08/san-onofre-defective-holtec-nuclear-waste-storage-system-must-be-recalled/>
- "Eddy current is only good for finding known cracks. Learn about inspection technology in this Parrott report. <http://www.hse.gov.uk/research/rrpdf/rr902.pdf>"
- If the canister were dropped and if the containment boundary was breached, what is the worst-case consequences?
- "Why is the Mesa not being discussed for safer storage within thick walled casks?"
- Putting fuel 108 feet from the Pacific Ocean is not acceptable.
- Make it right - we are counting on you to protect us and this planet."
- To what extent did the public have say over the construction and implementation of this site?
- The MPC is welded to seal the waste. How are the welds and HAZ put into compression so they are immune to SCC?
- when you don't "believe" there's be a ventilation problem with broken shims, isn't that wishful thinking? Will will assure actual analysis and share how that was done?
- in the hands on of the staff in the boom monitoring his instruments since he can't see the MPC will it be a more seasoned person rather a person having a 2nd time experience? Is there a standard in the industry of a certain amount of years for specific types of positions that are directly part of the loading of a MPC? How experienced are the field supervisors? WHY were there such a small number of oversight staff especially after a incident in July?
- You "believe," you "believe," you "believe..." Here's the big question: WHAT IF YOU'RE WRONG?
- Why is the NRC allowing Edison to provide an annual report on radiation levels when they've had a leakage in the past and didn't report it immediately (just like this last issue that should have been reported)?
- What are the internal mechanisms in NRC to identify opportunities for improvement from this/other situations where licensee has multiple violations? Who is in charge of thinking about those questions and how do corrective actions program(s) occur within NRC itself?
- Edison just wants to expedite fuel out of the pools to save money. Major overhead cost savings to eliminate the pools. They also want to access the over \$4 billion Decom. Trust Funds. Holtec likely has a contract incentive to expedite loading. Is this allowed by the NRC?
- experience level of vertical operator please!

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- will you allow edison to proceed before you do your further analysis for a breached canister?
- Do you think that the nuclear waste should be taken under the freeway, on the rail spur, and placed into storage on the San Onofre mesa east of the freeway and railroad tracks? This is relevant because of sea level rise and the proximity of salt air and its effect on the corrosion of metal canisters.
- why is there ongoing release of radioactive water into the ocean from the plant? Who's recording dates and amounts?
- How can it be considered remotely a safe location considering it's location to the ocean and in an earthquake zone?
- How does petitioning actually work. Can one person do it or does it have to be a city council?
- Do you consider this site safe indefinitely, because you have generally approved these isfss for indefinite use??
- Please provide technical reference for your conclusions about worst case scenario? Does it include analysis of high burnup fuel hydrides?
- So, if So Cal Edison wanted to bury this stuff in downtown Los Angeles, the NRC would approve it?
- What action is needed by the public or NRC to mandate thick walled casks?
- will all the questions be answered - and where?
- Did Edison know they were not getting the improved guide rings? Did they verify this? Palmisano told us they were getting the improvements from lessons learned at Callaway.
- NRC Mr Araguas stated at an NRC meeting Oct 11, 2018 that inspection technology still does NOT exist. promises promises to figure out all these problems..... They need to be addressed now, not leave it for our grandkids children.
- What gives the NRC ANY confidence that there will be a "long term solution" in 100 years? We're ~75 years into producing the waste, and tens of thousands of scientists have worked on finding a solution. What gives you confidence? Certainly not the science of ionizing radiation!
- Are the thinner walled casks drop-rated with full load? What drop-heights were they tested for? Were the cask to have dropped (est. 20 ft.) in the recent near miss by contractors -- could the cask have cracked and would the waste products inside leaked out?
- If leak was detected whether it is via a drop or a fatigue crack or by earth-movements, if a leak is detected in the dry cask storage -- what specifically is the remediation and clean-up plan?
- How do you lift those casks back up and will their weight be a factor +1 year or +10 years down the road?
- Why aren't the casks monitored 24x7 and data made available to the public - why not be transparent with this issue?
- Why would you put nuclear waste on a California beach? On a fault zone? Near an ocean flow? Why in proximity to the Pacific Ocean (a global ocean)? Why in proximity to the public access to beaches up and down the CA coast? Who exactly [specifically] at the NRC thought this was a good idea? Who shall we litigate against?

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- Why does the NRC think the plan to push the first-response for any nuclear disaster at SONGS to undersized (as it relates to Nation-sized emergencies), to untrained (as it relates to Radiation exposure), and to local-civilian first responders is a sensible plan?
- "Who is in charge of safe operations at the facility?"
- Who is liable for damages to life and property as a result of accidents that affect 8 million people in Southern California?
- Why can I not trust NRC to do the right things? Nor SCE?
- Who will provide confidence of "thought" and "planning" to the tax paying base?"
- 20-30 nuclear power stations will be decommissioned in the next 10-20 years in the USA. Are ALL of them going to have to deal with all the particulars that So. California has had to deal with? Is each locality on their own without oversight or help from the NRC? Is the NRC help harmless in planning and disaster preparedness?
- How are you going to insure the safety of the 8 million people who live, own property, operate business, within the 50 mile radius of SONGS? We, the public, hold Southern Californian Edison, the NRC, the Coastal Commission, for putting us in mortal danger and the Senate and politicians for not taking action to fund, license nuclear waste depositories and move this toxic waste away from the water, quickly and safely.
- Will this webinar be available to view after the original airing?
- I am unable to watch the event that evening due to a prior commitment, but would like to watch it later. How can I do that?
- I'm interested in earthquake issues. If the CEA has it right, the "big one" can happen at "any time". How prepared in SONGS for an earthquake? How about a tsunami?
- Is there any risk of nuclear exposure or danger to the public in the immediate surrounding area (air, land, sea) area homes, passing Amtrak trains, or passing cars on the freeway, with San Onofre housing the nuclear spent fuel in wet storage or dry cask storage? Has there been any exposure/danger over the years with San Onofre going off line to the same listed above? Should I have any concerns driving my car up the 5 fwy past San Onofre or taking the Amtrak train line that goes right past San Onofre?
- What information does the Nuclear Regulatory Commission have about the licensee's preparations for an event that would require moving the spent fuel from a canister that can no longer safely contain it?
- "The NRC requires licensees ensure that canisters are capable of performing their design function to safely store spent fuel. If a licensee has reason to believe a canister cannot do so, they are required to unload the fuel and place it in a new canister." (Victor Dricks)
- Has this process ever been done, and if so where, by whom and how ?
- What specific information has the licensee provided about their preparations for this, should it become necessary?
- Will you address the options available to dispose of and/or reuse the spent fuel? Technology is giving us more options, right?