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Holtec-US NRC Pushing for More Safety Related Exemptions for Nuclear Dry Cask Storage.

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Additional submitted attachment is included below.

Holtec-US NRC Pushing for More Safety Related Exemptions for Nuclear Dry Cask Storage. 2nd Month in a Row! Holtec wants to Avoid Quality Testing! April 20th NRC Comment Deadline

16 Thursday APR 2015

POSTED BY MININGAWARENESS IN UNCATEGORIZED

Some will recall that March 9th 2015 was the comment deadline for another of Holtec's attempts to decrease safety by asking for exemptions re dry cask storage of damaged spent nuclear fuel rods, and other safety related exemptions. Well, **they are at it again this month, trying to avoid material quality testing for the basket which holds the spent nuclear fuel, within the flimsy 5/8ths inch metal container. Basket failure could lead to a catastrophic nuclear accident.** The deadline for this one is April 20th: "*NRC-2014-0275, List of Approved Spent Fuel Storage Casks – Holtec International HI-STORM Flood/Wind Cask System, Amendment No. 1, Revision 1, 04/20/2015*" Comment here:http://www.regulations.gov/#!docketDetail;D=NRC-2014-0275

Yet another safety related amendment was run through by Holtec-NRC with only one month comment between October 3rd and November 3rd: "*The direct final rule amends the Commission's regulations by revising the Holtec International HI-STORM FW System, listing to include Amendment 1 to the Certificate of Compliance No. 1032. The amendment adds* ***a new heat loaded pattern, broadens backfill pressure range****, updates certain definitions, and provides editorial correction.*"http://www.gpo.gov/fdsys/granule/FR-2014-10-03/2014-23633

In fact, it seems that tracking down all of Holtec's "Amendment"-Exemption requests would take more time than we have. Already, **a decade ago**, on May 10, 2005, Raymond Shadis, for the "New England Coalition", stated: "*The proposed amendment to HOLTEC's Hi-Storm 100 Certificate of Compliance, contains* ***numerous proposed changes to the design of the system, including to the materials used in construction, changes to the types of fuel that can be loaded, changes to shielding and confinement methodologies and assumptions, revisions to various temperature limits, changes in allowable fuel enrichments, and more****… Most changes in this Certificate of Compliance (CoC)/Amendment, though not all,* ***appear to diminish engineering conservation and increase impact or risk****…*" More here: http://www.state.nv.us/nucwaste/news2005/pdf/nec050510holtec.pdf This group seems to have stopped Holtec that time around. It certainly looks like Holtec waits until no one is looking and then gets the NRC to run the "Amendments" on through.

Why does Holtec want so many amendments? Why does Holtec's Metamic basket require so many exemptions? Why was the public only given one month to comment in each instance? Why have there been new exemption requests two months in a row? And a third one a few months ago? There may well be more. These are clear proof that the NRC-Holtec are pulling a fast one-running a con game. **By now this is criminal fraud and people need to report it**, as well as complaining to the US NRC. This is high level nuclear waste. It is dead serious:http://www.justice.gov/actioncenter/report-crimehttp://www.stopfraud.gov/about.html Additionally, **request should be made to strip Holtec owner-CEO Kris Singh of his ASME membership, if he really has it.** https://www.asme.org/about-asme/contact-ushttps://www.asme.org/getmedia/7f2a4c04-1a03-459c-8cda-c5448c039a96/SocietyPolicies_15-4_EthicalConductViolationProcedures.aspx

Complaint to the US NRC is strictly for public record and to let them know they are being watched, as the NRC has amply demonstrated that they are hopelessly stupid and/or corrupted. Unfortunately, **they are backed by an almost completely corrupted Congress, due to legal bribes called campaign donations** (along with possible conflicts of interests-illegal bribes).

If Americans don't find a way to replace these corrupted officials, then all will perish soon, and probably take Canada and possibly Mexico with them. For those who missed it, **Holtec's CEO-owner Singh was fined in the past for what appears to have been [illegal] bribery**:https://miningawareness.wordpress.com/2015/02/05/why-was-holtec-debarred-as-tva-contractor/ Also regarding Holtec:
"***Christie agency awarded $260m to politically connected New Jersey firm Mayor's administration gave tax break to firm headed by Democratic rival with whom Christie signed non-aggression pact***", by Jon Swaine, 11 July 2014: "*New Jersey governor Chris Christie's administration has awarded a public subsidy worth more than a quarter of a billion dollars to a politically connected manufacturing firm.*" http://www.theguardian.com/world/2014/jul/11/christie-260m-subsidy-holtec-international-new-jersey

Last month Holtec-NRC exemption requests included reducing the Minimum Guaranteed Values (MGV) for stress-strength for the fuel basket material, Metamic HT. They reported a 20% reduction of MGV during a tensile test: "*Tensile testing, also known as tension testing, is a fundamental materials science test in which a sample is subjected to a controlled tension until failure. The results from the test are commonly used to select a material for an application, for quality control, and to predict how a material will react under other types of forces.*" http://en.wikipedia.org/wiki/Tensile_testing And, they report 10% average reduction for material yield stress, ultimate strength and Young's modulus. They do not tell us what kind of average they are using. If it is an arithmetic average (mean) the reduction could be huge:https://www.federalregister.gov/articles/2015/02/05/2015-02310/list-of-approved-spent-fuel-storage-casks-holtec-international-hi-storm-100-cask-system-certificate

This month Holtec-NRC are trying to run through more exemptions, which reduce safety. When questioned last October 14th in California, Holtec owner Kris Singh stated that even with a small crack "*millions of curies of radioactivity" will be "coming out of the canister*".https://miningawareness.wordpress.com/2015/04/16/holtec-ceo-kris-singh-on-not-repairing-cracked-nuclear-dry-casks/

A curie is 37 billion becquerels, i.e. radioactive emissions per second. So, this is millions of billions of radioactive emissions per second. **Holtec seems to be protected from liability under the Price Anderson Act.** Since his company is comparatively small he may not even have to pay into the Price Anderson insurance pool (payment is retroactive, after the fact), when an accident occurs with his nuclear waste casks – and accidents will occur with these flimsy casks, with untested basket welds and materials, sooner or later, barring a miracle. **Testing exists because even in the best of circumstances, mistakes can occur.** Furthermore, **Singh was born, raised, and allegedly received a university degree in India**

and can easily return home, after having wreaked nuclear armageddon upon America, with defective spent fuel casks. Even if not protected by Price Anderson he could evade liability in this way. Either Singh is truly an idiot, lacking the education that he claims, or he has no allegiance to America and only to India. Interestingly, **he is the "American" contractor for nuclear waste facilities in the Ukraine, about which there has been flak by pro-Russian media**, so appears to be contributing to the US-Russian conflict in Ukraine.

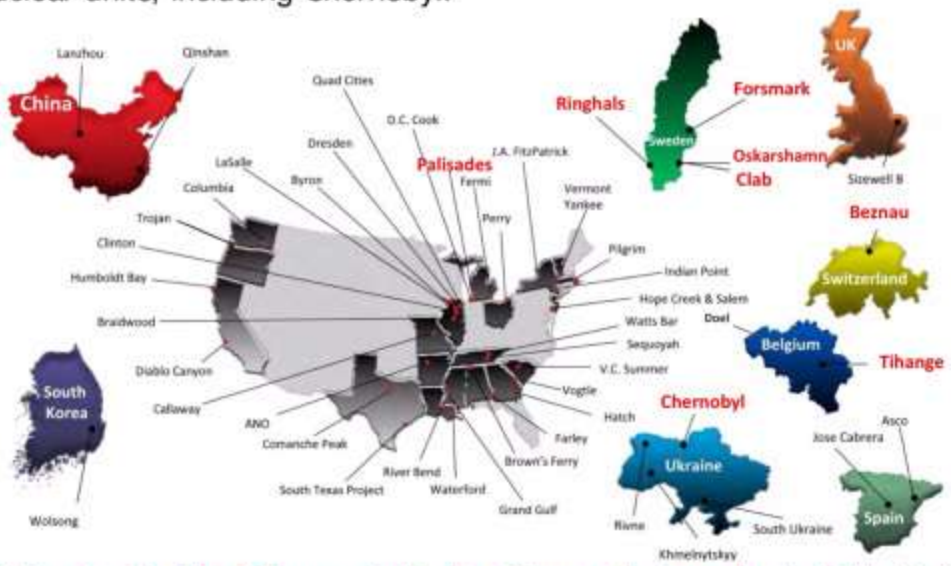
The late Oscar Shirani's **Allegations of Quality Assurance Violations Against Holtec** Storage/ Transport Casks, subsequent to an 8 day audit, **appear relevant still**. The issues are **all similar to the issues for which Holtec wants exemptions – cheaper welding techniques, issues with quality assurance and "*Holtec's failure to report holes in neutron shielding material*", which is the Metamic! And, Holtec wants to remove testing requirements for Metamic!** See summary of Shirani's concerns here: http://www.nirs.org/radwaste/atreactorstorage/shiranialleg04.htm

Furthermore, American NRC "approval" is used as leverage for approval in other countries. So, proceeding with exemptions – fraudulent by definition – may have international repercussions. Holtec is located all over the world and people need to be alarmed the world over.

Holtec Casks Diablo Canyon Dec. 2005 or 06; NRC or DOE

This is the only documentation of the thinness of the canisters, which we've found. It shows that they are 5/8 inch (1.5 cm) thin. As seen in the pictures above, the dry casks are huge, so the thinness is very disproportionate. The diagram below is from a presentation by Kris Singh for a San Onofre Stakeholders presentation in California last October. As we've discussed, the "protective" concrete could actually cause additional problems over time. Note that it is corrosion "resistant" and not corrosion proof. Those who've gone swimming in water "resistant" watches, know the difference between "resistant" and "proof".

Holtec has a large international footprint in used fuel management with 67 nuclear units, including Chernobyl.



Holtec has the Most Transportable Dry Storage Systems Loaded Worldwide

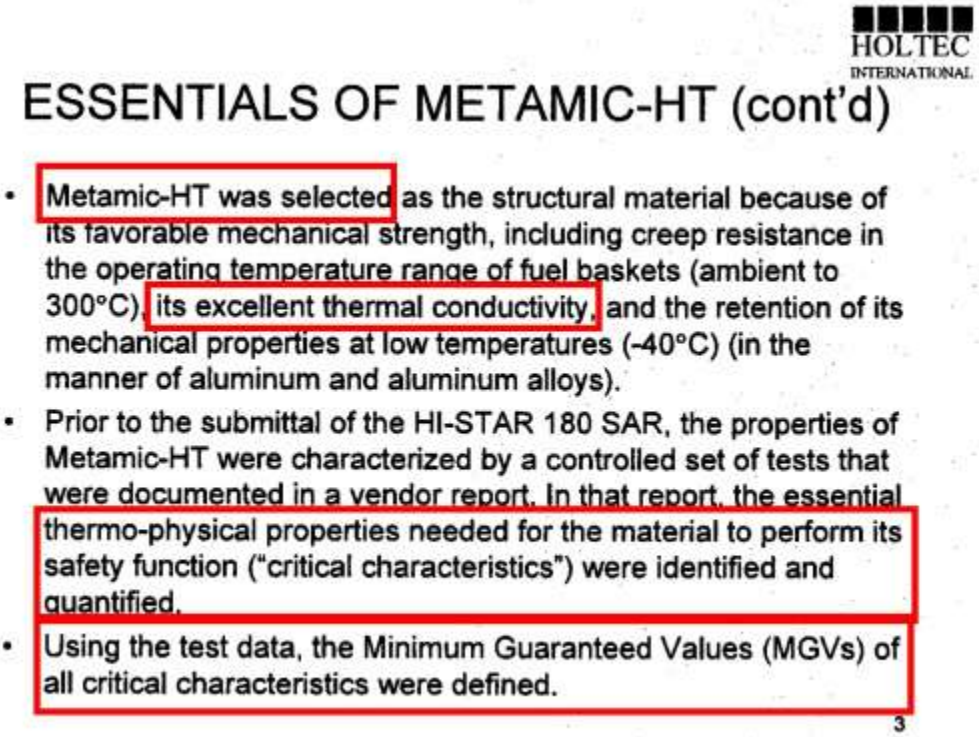
From: "*HI-STORM UMAX: Holtec's Underground Dry Storage System, State-of-the-Art Solution for the Safety and Security of the People and Environment at SONGS, A Presentation to Community Stakeholders By: Kris Singh, PhD, PE President & CEO, Holtec International October 14, 2014 San Juan Capistrano, California*"

From the most recent request (posted, March 19; comment deadline April 20): "*On July 31, 2013, Holtec submitted a revision request for the Holtec HI-STORM FW System CoC No. 1032, Amendment No. 1… Amendment No. 1, Revision 1, also* ***removes fabrication testing requirements for the thermal expansion coefficient and thermal conductivity of Metamic HT neutron-absorbing structural material***". The reason? "*as these properties have little variability in this aluminum alloy when fabricated according to the manufacturer's manual.*"
http://www.regulations.gov/#!docketDetail;D=NRC-2014-0275

The whole point of testing is to verify that the materials have indeed been made according to specifications. The defects recently reported in Areva's new nuclear reactor pressure vessel, in France, are proof of the need for testing, and of its importance.

If Holtec owner Kris Singh is really a member of ASME and if he really has any sort of science or technical degree at all, he knows this very well. The whole point of Metamic is its thermal conductivity and neutron absorbing capacity, which one hopes will compensate for its corrosive potential.
Another NRC kicker is that they want to give exemptions (so why have rules?) and if the NRC doesn't give a blanket exemption then the NRC will have "*administrative burden*" and the licensee have additional costs! They even have the unmitigated gall to say that this increases environmental impact (by which they apparently mean paper or computer, since in their eyes a nuclear disaster is not an environmental impact!)
"*Consequently, any 10 CFR part 72 general licensee that seeks to load spent nuclear fuel into the Holtec HI-STORM FW System in accordance with the changes described in proposed Amendment No. 1, Revision 1, would have to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, interested licensees would have to prepare, and the NRC would have to review, each separate exemption request, thereby increasing the administrative burden upon the NRC and the*

*costs to each licensee. Therefore, the environmental impacts of the alternative to the action would be the same or more than the impacts of the action."*http://www.regulations.gov/#!docketDetail;D=NRC-2014-0275



"*Material Qualification Program for Metamic-HT for use in the Hi-Star 180 Fuel Basket, US NRC Docket No 71-9325, A Presentation to the SFST by Dr. Phillip Blue, Consultant Holtec International Jan. 21, 2009*" http://pbadupws.nrc. gov/docs/ML0903/ML090330785.pdf

More change requests in the NRC docket. All of the exemptions seem to increase the risk of a criticality accident: "*Discussion of Changes: On July 31, 2013, Holtec submitted a revision request for the Holtec HI-STORM FW System CoC No. 1032, Amendment No. 1. Holtec supplemented its request on November 5, 2013. As a revision, the CoC will supersede the previous version of the CoC and its TSs, effective December 17, 2014, in their entirety. Amendment No. 1, Revision 1,* ***revises the authorized contents of the cask in Appendix B to the TSs to include 14X14B fuel assemblies with minor changes in the internal diameter of the fuel cladding, diameter of the fuel pellet, and fuel rod pitch (distance from fuel pin centerlines)****. The amendment also updates testing requirements for the fabrication of Metamic HT neutron-absorbing aluminum alloy structural material used to secure the spent fuel inside the cask. These changes to Appendix B of the TSs are identified with revision bars in the margin of the document.*

Specifically, Amendment No. 1, Revision 1, ***changes the fuel cladding internal diameter, the fuel pellet diameter, and the fuel rod pitch (distance from fuel pin centerlines) of the fuel assembly class 14X14B. These changes in spacing between the fuel pins would result in a volumetric increase of 0.6 percent of the fuel and a reduction of 0.13 percent of the original flow area.*** *Because this reduced flow area is still larger than the 17X17 assembly flow area used as the bounding scenario, the flow resistance factor is still less restrictive than the bounding scenario, and the passive decay heat removal of the proposed 14X14B assembly is still conservative.*

Amendment No. 1, Revision 1, also ***removes fabrication testing requirements for the thermal expansion coefficient and thermal conductivity of Metamic HT neutron-absorbing structural material, as these properties have little variability in this aluminum alloy when fabricated according to the manufacturer's manual.***

As documented in the safety evaluation report (SER), the NRC staff performed a detailed safety evaluation of the proposed CoC Amendment No. 1, Revision 1 request. There are no significant changes to cask design requirements in the proposed Revision 1 to the CoC Amendment No. 1. Considering the specific design requirements for each accident condition, the design of the cask would prevent loss of containment, shielding, and criticality control. If there is no loss of containment, shielding, or criticality control, the environmental impacts would be insignificant. Amendment No. 1, Revision 1 does not reflect a significant change in design or fabrication of the cask. In addition, any resulting occupational exposure or offsite dose rates from the implementation of Amendment No. 1, Revision 1, would remain well within 10 CFR part 20 radiation protection limits. Therefore, the proposed CoC changes will not result in any radiological or non-radiological environmental impacts that significantly differ from the environmental impacts evaluated in the environmental assessment supporting the October 3, 2014 (79 FR 59623), final rule that approved the HI-STORM FW System design Amendment 1. There will be no significant change in the types or amounts of any effluent released, no significant increase in individual or cumulative radiation exposure, and no significant increase in the potential for or consequences from radiological accidents." What insane bull-shit! They aren't going to do quality testing. They are going to reduce cooling. The casks are thin so they most likely would not protect from a criticality "excursion" "event"! And what a radioactive "party" that will be! Cancer is just a laugh a minute for the NRC.
[…]
"*D. Alternative to the Action*
The alternative to this action is to deny approval of Amendment No. 1, Revision 1, and end this direct final rule. Consequently, any 10 CFR part 72 general licensee that seeks to load spent nuclear fuel into the Holtec HI-STORM FW System in accordance with the changes described in proposed Amendment No. 1, Revision 1, would have to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, interested licensees would have to prepare, and the NRC would have to review, each separate exemption request, thereby increasing the administrative burden upon the NRC and the costs to each licensee. Therefore, the environmental impacts of the alternative to the action would be the same or more than the impacts of the action."
https://www.federalregister.gov/articles/2015/03/19/2015-06367/list-of-approved-spent-fuel-storage-casks-holtec-hi-storm-floodwind-system-certificate-of-compliance
http://www.regulations.gov/#!documentDetail;D=NRC-2014-0275-0006

SO WHY DOES THE NRC EXIST? SAVE YOUR TAX MONIES AND YOUR LIVES! SHUT DOWN THE NRC! FIRE THE BASTARDS! PUT FRAUD CHARGES AGAINST THEM AND HOLTEC AND LET THEM BE SPEND THEIR DAYS CLEANING UP WIPP, HANFORD, SAVANNAH RIVER SITE AND THEIR NIGHTS IN JAIL. THEN FIRE THE CONGRESSMEN WHO PROTECT THESE JOKERS.

Document which they list as relevant on the docket:
"*ADAMSAccession No./Web link/FederalRegistercitation*
CoC No. 1032, Amendment No. 1, Revision 1
ML14276A621

CoC No. 1032, Amendment No. 1, Revision 1, Appendix A to the Technical Specifications ML14276A618
CoC No. 1032, Amendment No. 1, Revision 1, Appendix B of the Technical Specifications ML14276A617
CoC No. 1032, Amendment No. 1, Revision 1, Preliminary SER
ML14276A620

Holtec International HI-STORM Flood/Wind Multipurpose Canister Storage System, License Amendment Request 1032-2, July 31, 2013 ML13214A023
Submittal of Response to First Request for Additional Information for License Amendment Request No. 2 to the Holtec International HI-STORM Flood/Wind Multi-Purpose Canister Storage System, November 5, 2013 ML13311A103"http://www.regulations.gov/#!documentDetail;D=NRC-2014-0275-0006

MORE DETAILS ON LAST MONTH'S REQUEST:
"*The second part of the change request addresses changes to the MGVs for Metamic HT. The MGVs for Metamic HT are used in calculations to demonstrate that the structural components will satisfy engineering requirements such as stress limits or deflection limits. By providing MGVs, all calculations performed with those values will represent a bounding calculation for a given engineering requirement. The applicant referenced its engineering change order (ECO) process supported by a 10 CFR 72.48 evaluation to make changes to the MGVs, but elected to additionally submit the proposed changes in those values to the NRC for review and approval through the revision process. A review of the material properties submitted by the applicant indicates an average reduction in MGVs of approximately 10%, for material yield stress, ultimate strength, and Young's modulus. A reduction of 20% of the MGV was reported by the applicant for the reduction in area criteria measured during a tensile test. The applicant applied these changes to structural calculations (stress strain curve development for finite element analysis) and determined that positive margin remains for basket performance criteria. The positive margins include the areas of peak stress criteria, maximum deflection criteria, and crack propagation criteria. The staff reviewed these results and, because positive margin remains for basket performance criteria even with the reduced MGVs, finds this acceptable*

3.1 Evaluation Findings

Based on evaluation of the supporting documentation and calculation for Amendment No. 8 to CoC No. 1014, the staff finds that the revision acceptably meets the review criteria identified in NUREG-1536, REV. 1. Specifically, the staff finds:

F3.1 The structural properties of the CoC No. 1014, Amendment No. 8, SSCs remain in compliance with 10 CFR Part 72, and the applicable design and acceptance criteria have been satisfied. The evaluation of the structural properties provides reasonable assurance that the CoC No. 1014, Amendment No. 8, Revision No. 1, will allow safe storage of spent nuclear fuel (SNF). This finding is reached on the basis of a review that considered the regulation itself, appropriate regulatory guides, applicable codes and standards, and accepted engineering practices."
http://pbadupws.nrc.gov/docs/ML1426/ML14262A476.pdf

"*SAFETY EVALUATION REPORT DOCKET NO. 72-1014 HOLTEC INTERNATIONAL HI-STORM 100 CASK SYSTEM CERTIFICATE OF COMPLIANCE NO. 1014 AMENDMENT NO. 8, REVISION NO.1*"
Feb. request/ March comment period:https://www.federalregister.gov/articles/2015/02/05/2015-02310/list-of-approved-spent-fuel-storage-casks-holtec-international-hi-storm-100-cask-system-certificate

"*In Ukraine, a dry storage facility has been accepting spent fuel from the six-unit Zaporozhye Nuclear Power Plant (VVER-1000 reactors) since 2001, making it the longest-serving such facility in the former Soviet Union. The system was designed by the now-defunct Duke Engineering of the United States, with the storage casks being manufactured locally.[17]*

Another project is underway with Holtec International** (again of the USA) **to build a dry spent fuel storage facility at the 1986-accident-infamous Chernobyl Nuclear Power Plant (RBMK-1000 reactors). The project was initially started with Framatome (currently AREVA) of France, later suspended and terminated due to technical difficulties. Holtec was originally brought on board as a subcontractor to

dehydrate the spent fuel, eventually taking over the entire project.
[18]"http://en.wikipedia.org/wiki/Dry_cask_storage

Some Places to Start with to report Holtec-NRC fraudhttp://www.justice.gov/actioncenter/report-crimehttp://www.stopfraud.gov/about.html

Regarding the metal containers "*Module Cask System*" (MPC) "*All MPCs have identical exterior dimensions which render them interchangeable.*"
http://pbadupws.nrc. gov/docs/ML0037/ML003733900.pdf
http://pbadupws.nrc. gov/docs/ML0330/ML033020058.pdf
http://pbadupws.nrc. gov/docs/ML0724/ML072420254.pdf

Importance of Fuel Basket and Fuel Rod Spacing
"***Criticality control is maintained by the geometric spacing of the fuel assemblies and fixed borated neutron absorbing materials (Boral) incorporated into the fuel basket assembly****… The construction features of the PWR MPC-24 and the BWR MPC-68 are similar. However, the PWR MPC-24 canister in Figure 1.2.4, which is designed for high-enriched PWR fuel, differs in construction from the MPC-68 in one important aspect:* ***the fuel storage cells are physically separated from one another by a "flux trap", for criticality control.*** *All MPC baskets are formed from an array of plates welded to each other, such that a honeycomb structure is created which resembles a multiflanged, closed-section beam in its structural characteristics.*

The MPC fuel basket is positioned and supported within the MPC shell by a set of basket supports welded to the inside of the MPC shell. Between the periphery of the basket, the MPC shell, and the basket supports, heat conduction elements are installed. These heat conduction elements are fabricated from thin aluminum alloy 1100 in shapes which enable a snug fit in the confined spaces and ease of installation. The heat conduction elements are installed along the full length of the MPC basket to create a nonstructural thermal connection which facilitates heat transfer from the basket to shell. In their installed condition, the heat conduction elements contact the MPC shell and basket walls." "*FINAL SAFETY ANALYSIS REPORT for the HOLTEC INTERNAT[ONAL STORAGE AND TRANSFER OPERATION, REENFORCED MODULE CASK SYSTEM, (HI- STORM 100 CASK SYSTEM), DOCKET 72- 1014, VOLUME I OF II*" http://pbadupws.nrc. gov/docs/ML0724/ML072420254.pdf (NRC Documents can be found with either the title or the ML number which serves as an ID.) Volume II of the same document or part of Volume II: http://pbadupws.nrc. gov/docs/ML0227/ML022730080.pdf

Note: **The MPCs are apparently all the same, meaning that they must all be the same thickness as given for San Onofre – 5/8ths inch thick.** The variations come from the over-pack. The Holtec Star is apparently for transport; Holtec Hi-Storm is not. Some over-packs are above ground; some underground. **Hi-Storm overpacks are vented, meaning that the inner MPC is the only real protection for the outside world. The concrete overpacks can be subject to degradation.**

We wonder if this Metamic (Aluminum boron carbide) material is appropriate or if it may set up galvanic corrosion, or other problems, especially in the context of damaged fuel rods? If it is a problem, you can be certain that we won't learn about it from either Holtec or the US NRC.https://miningawareness.wordpress.com/2015/03/10/holtec-nuclear-waste-snf-casks-friction-stir-welds-kissing-bonds-other-safety-concerns-comment-now/

People should complain to Kris Singh's supposed Alma Mater of University of Penn, as well, though since he just donated a large amount of money there's no chance that they will strip him of his degree, if he really has one. The university would give him an "honorary" doctorate anyway for the money. Someone should inquire if he really has a degree from India, as well. It is possible that he entered U. of

Penn based on fraudulent claims of a degree from India. Foreign students have entered US graduate schools with no undergraduate records, though this tends to be when their countries are at war, so they cannot access records.

Kris Singh is living proof that countries should only allow immigration by refugees who cut all ties with their country of origin, to be on the safe side. There should be no economic migrants. As far as we know, every country in the world has qualified, educated, unemployed people who want to work. This is certainly true of Europe and North America. An Iranian American, Oscar Shirani, probably refugee from the Iranian revolution, tried to call attention to what he felt was the poor quality of the Holtec casks years ago, as discussed above. Oscar Shirani apparently loved America and knew that it was his new home. Singh clearly considers India his home for he has no allegiance to America, unless he is lying about his credentials and doesn't know better than what he is doing.