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From: Ace Hoffman [mailto:rhoffman@animatedsoftware.com]

Sent: Sunday, February 12, 2017 2:05 PM

Subject: [External\_Sender] Darrell Issa's New Nuclear Waste Policy Act (H. R. 474) is a disaster for taxpayers, but would be Nirvana for nuclear utilities

February 12, 2017

Dear Readers,

U.S. Representative Darrell Issa -- my Congressman -- wants to screw the American public by forcing them (us) to take all the nuclear waste the nuclear industry has ever produced -- with no safe place to put it.

Meanwhile, local residents of the closed San Onofre Nuclear (Waste) Generating Station have renamed the spent fuel there as the "Darrell Issa Nuclear Waste Dump" because of his support for the plant while it was open, and his (failed) attempts to have it reopen after the plant was shut down permanently on January 31, 2012 due to faulty steam generators. And there the waste sits in enormous, thin-walled, so-called "stainless" steel casks. Now, Darrell Issa is playing on the fears of local residents who want the waste moved away from the coast in order to push his proposal.

Issa's proposed changes to the Nuclear Waste Policy Act of 1982 (which was enough of a screwing of the American public in itself) will, in the long run, probably cost taxpayers trillions -- yes, trillions -- of dollars, and result in millions -- yes, millions -- of deaths over the coming centuries. These deaths are nearly inevitable, because his bill guarantees new nuclear waste will be made ad nauseam, and that means the waste will almost surely be released into the environment eventually. No one has ever built a containment that will last longer than the nuclear waste. Not even the Egyptian pharaohs.

The first paragraph of Issa's detestable bill says it all: He wants the U.S. Government -- that's actually us, the citizens of the United States, since we're a "government of the people" -- to "take title to certain high-level radioactive waste and spent nuclear fuel." That means the federal government would be responsible for all of the most nasty property any private company has ever held title to (known in the industry as "Greater than Class C" nuclear waste).

And Issa wants to take money away from the Nuclear Waste Fund -- which was set up to create a permanent geologic repository somewhere in America -- to bribe local officials at interim storage sites and enrich sleazy corporations that want to build large, open, cement pads to hold thousands of school-bus-sized, thin-walled canisters, each containing enough nuclear waste to devastate an entire state.

Currently, this waste -- about 80,000 tons altogether -- is being stored on site at more than 70 active and former nuclear power stations. And currently, more nuclear waste is being generated at nearly 100 nuclear power plants around the country -- about 10 tons of new nuclear waste per day in America (about 50 tons globally, per day).

Nuclear waste contains short-lived and long-lived "fission" isotopes. Most fission products -- the result of splitting fissile atoms such as Uranium-235 and Plutonium-239 -- have half-lives of less than about 30 years, so they'll require about 600 years to fully decay (20 half-lives leaves about

one millionth of the original amount). (A few fission isotopes will take millions of years to decay to stable elements.)

Nuclear waste also contains unburned "fissile" material: Unsplit Uranium-235 and Plutonium-239 atoms. These are present because the fuel was removed when it was no longer profitable to the utility to continue using it -- the yield had dropped too much, and not because all the fissile isotopes had been split.

These fissile isotopes can be used by a rogue government headed by a rogue leader to make nuclear weapons. They can be stolen by terrorists (not easy, but not impossible). Perhaps worst of all the fissile isotopes can still achieve criticality.

A criticality event can occur when the fissile materials accumulate together too closely. There are various shields and other separators within the storage casks that keep the material sufficiently far apart to prevent this from happening under "normal" circumstances. But if things go wrong, a VERY large explosion occurs, tremendous heat is produced almost instantaneously, and radioactive material is spread throughout the planet. Worst of all, one criticality event in one dry cask is liable to spread to other casks, because the casks, in the current proposed configurations, will be stored very close together with no barriers in-between each cask.

Proposed interim storage configurations that have been submitted to the Nuclear Regulatory Commission for approval comprise simply an enormous rectangular cement pad covered from one end to another with dry casks. This type of configuration is a perfect target for a hijacked airplane: Large, easy to locate, and not surrounded by anything that would prevent an airplane from striking it (no anti-aircraft guns, no roof, no walls, nothing).

It's the cheapest possible "solution" to the nuclear waste problem America has been unable to solve for more than half a century -- despite putting tens of thousands of scientists on the task, who got nowhere. Those scientists could not get a permanent repository at Yucca Mountain approved because there are still hundreds of unsolved technical problems. At the time Yucca Mountain was cancelled, California alone had submitted dozens of technical issues that needed to be dealt with, and Nevada had submitted nearly 300 more. It is inaccurate to think that Yucca Mountain was stopped because of "political" pressure from Nevada. Yucca Mountain was stopped because of volcanic concerns, water seepage problems, cave-ins, climate change issues, earthquakes possibilities, and many problems with the containers themselves.

The nuclear industry is pushing Issa's "Interim Storage" solution because it completely solves THEIR problem: Ownership of the waste. A single "small" accident with that waste would bankrupt even the largest nuclear utility. But by giving the "ownership" of the spent fuel and other high-level waste to the taxpayers and citizens of America, the utilities can "wash their hands" of the problem they created.

They could have closed their nuclear plants down decades ago and switched to renewables but they didn't, in part because of the 1982 NWPA, which promised to take the waste off their hands when a permanent repository opened a few years later. That never happened, and so the utilities have successfully sued the federal government to recover hundreds of millions of dollars each that they have been spending to store nuclear waste on site.

As dozens of reactors are sure to close or have already recently shut down permanently, due to aging concerns or other problems (including the cheaper cost of renewables and natural gas),

the nuclear waste fund is no longer increasing as much as it was previously, and the only way it will have enough money for a permanent repository is if the interest on the money already in the fund is allowed to accumulate (and even that will probably not be enough).

But Darrell Issa wants to rob the fund of the interest in order to pay for the interim storage! In other words, he won't even charge the utilities for this massive criminal enterprise! And he specifically intends to let the utilities continue to sue for the cost of continuing to store the waste on site in the meantime.

Issa's concept is currently illegal, hence the need for his new bill. He tried for several years to get similar bills passed with no success. His current proposal is called the "Interim Consolidated Storage Act of 2017" and he has 17 co-sponsors, including several Representatives from Texas, where the interim storage site will probably be located if it is ever built.

The politicians smell money coming into their state, and couldn't care less if the project destroys their state when an accident occurs, as it inevitably will. The waste canisters cannot be inspected on the inside. The ceramic fuel pellets -- hundreds of thousands of finger-bone sized pellets in each canister -- are already degraded from years of heat, vibration, radiation, and migration of fission products through the fuel. (The fission products are created when the fissile atoms are split in the reactor during operation. The fission products -- on average two for every atom that is split -- then migrate through the fuel towards the outer edges of the pellets, which tends to cause microscopic cracks in the fuel pellets, and the pellets expand, which puts pressure on the (flammable) zirconium fuel rods that contain them. There are thousands of fuel rods in each dry cask, packed into dozens of "assemblies" of several hundred fuel rods each.)

A couple of private security guards with pea shooters (side-arms, aka pistols) will guard the fences of this enormous target, and a couple of times a month a technician will walk around the canisters to "inspect" them -- but won't be able to see what's going on inside, where the fuel rods may be crumbling and the fuel collecting at the bottom of the canister -- risking a sudden explosive criticality event. The possibility of a criticality event exists even without an airplane strike. However, if an airplane did strike the pad, chances of a criticality event are very significant. The force of the impact could push the fuel together, and an airplane strike could also cause a fire which would destroy the containers within about 20 minutes. Either way, a criticality event becomes almost inevitable after an airplane strike.

Issa's bill specifically rejects the intent of the 1982 Act by stating that "nothing" in his bill will "require the disposal of Greater than Class C waste in a repository." In other words, the "Interim" storage site could become the "permanent" repository for many centuries! However, unless the Uranium-235 and Plutonium-239 isotopes are neutralized (which can be done through the use of lasers), nuclear waste will remain in danger of a criticality event for millions of years. And no utility wants to invest in neutralization, mainly because destroying the U-235 and Pu-239 would eliminate the possibility of reprocessing the fuel -- but that's actually another huge advantage of laser neutralization!

Issa's bill is so generous to the nuclear industry, they don't even have to sign a contract with anyone -- the liability for the waste will be automatically transferred to the federal government as soon as the waste is transferred to the interim storage site -- which will be run by a company that isn't liable for it at all!

This certainly isn't capitalism; it's worse than communism! It's madness!

Ace Hoffman  
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URL for Darrell Issa's reprehensible bill:  
<https://www.congress.gov/115/bills/hr474/BILLS-115hr474ih.xml>

Link to Dr. Peter M. Livingston's patent application for laser neutralization of nuclear waste:  
<http://goo.gl/7ro0tZ> (goes to the USPTO).

Dr. Livingston's patent was initially rejected, however on appeal, in November, 2016 most of his claims were reinstated, a huge and unusual victory, and additionally, the most important rejected portions were not rejected for being wrong, but for being already proven correct (or, in the first rejected item, because the patent officer illogically asserts that a beam of light from a flashlight is "collimated" like a beam of light from a laser, which is "patently" absurd):

[http://www.google.com/url?q=https://e-foia.uspto.gov/Foia/RetrievePdf%3Fsystem%3DBPAI%26fINm%3Dfd2013009519-11-01-2016-1&sa=U&ved=0ahUKEwiBt7WsgvnRAhXk7YMKHV9UCTsQFggWMAA&usg=AFQjCNHPRcwxOfKcy201Sxsf\\_b\\_g3a\\_PKRw](http://www.google.com/url?q=https://e-foia.uspto.gov/Foia/RetrievePdf%3Fsystem%3DBPAI%26fINm%3Dfd2013009519-11-01-2016-1&sa=U&ved=0ahUKEwiBt7WsgvnRAhXk7YMKHV9UCTsQFggWMAA&usg=AFQjCNHPRcwxOfKcy201Sxsf_b_g3a_PKRw)

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