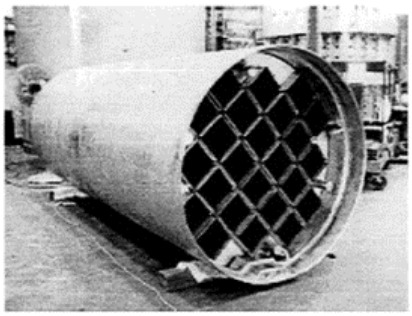
August 15, 2017

To Elected Officials and others:

Shimkus Bill H.R. 3053, The Nuclear Waste Policy Amendments Act of 2017 makes nuclear waste problems worse. Vote "NO" on H.R. 3053 because it:



- **Eliminates critical storage and transport safety requirements.**
- **Eliminates critical federal, state and local water, air and other rights.**
- **Wastes the already inadequate Nuclear Waste Funds.**

This bill is a threat to our national security, our economy, and our democracy, and increases our risks for major nuclear disasters. Please oppose H.R. 3053.

H.R. 3053 puts the cart before the horse by allowing transport of thousands of aging thin-wall nuclear waste canisters across the country without first resolving critical storage and transport safety issues, such as inability to inspect for cracks in thin-wall (mostly ½" thick) stainless steel canisters. It allows payments for interim storage facilities before resolving these critical storage and transport problems.

Each thin-wall stainless steel canister contain about as much lethal highly radioactive Cesium-137 as was released from the Chernobyl nuclear disaster. These "Chernobyl canisters" may start leaking in a few years and the Nuclear Regulatory Commission (NRC), Department of Energy (DOE) and utilities have no approved plan in place to deal with leaking "Chernobyl canisters" or to prevent major radioactive leaks.

Moving Chernobyl canisters around on the Titanic will not solve the U.S. nuclear waste problems. This "Mobile Chernobyl" bill, H.R. 3053, will make the problems worse:

- It eliminates Nuclear Waste Policy Act (NWPA) nuclear waste storage and transport safety laws.
- It eliminates or preempts federal, state and local water and air rights and other rights.
- It eliminates Congressional and public democratic rights for oversight, input, and transparency.
- It spends limited and inadequate Nuclear Waste Funds without addressing current short-term and critical U.S. nuclear waste dry storage and transport problems. *Each nuclear fuel waste storage container (one thin-wall canister, vented overpack, and labor) now costs about $4 million.*
- It eliminates the requirement for a permanent repository before approving consolidated interim storage sites, yet provides inadequate funding for both.
- It gives total authority to the DOE to negotiate contracts (MRS Agreements) with private companies without any oversight and without any requirements to evaluate the site, transport routes or transport infrastructure prior to issuing contracts for consolidated interim storage sites. The bill refers to these facilities as Monitored Retrieval Storage Facilities, but eliminates the requirements for monitored retrieval fuel storage.

H.R. 3053 relies on the NRC for all safety issues. However, the NRC provides limited safety evaluations.

- The NRC certifies U.S. thin-wall steel canisters for short-term storage without considering aging management or transport requirements.
- **This has already resulted in over 2000 nuclear fuel waste thin-wall canisters that cannot be inspected (inside or out), that cannot be repaired, maintained or monitored to prevent radioactive leaks, and that have no plans in place to deal with cracking or leaking canisters.** *Other countries use thick-wall cask systems that do not have these problems, including the thick-wall casks at Fukushima that survived the March 11, 2011 Great Earthquake, tsunami and resulting on-going nuclear power disaster.*

- The NRC is still evaluating whether normal train vibrations will cause the high burnup nuclear fuel assemblies (used by most utilities) to become damaged in transport.
- NRC transport regulations do not allow partially cracked canisters to be transported, yet utilities have no way to inspect existing thin-wall welded canisters for cracks and no way to inspect the contents of the canisters before or after transport.
- The NRC still allows use of aluminum alloy fuel assembly baskets (required to hold each fuel assembly inside the canister or cask). Japan abolished use of aluminum fuel baskets due to shorter expected lifespan of 60 years.
- The NRC is not responsible for selecting sites, does not evaluate transport routes or infrastructure issues, does not address cost or funding issues, and is not responsible for managing nuclear waste storage facilities or for transporting nuclear waste.

Please oppose H.R. 3053 and any similar bills that reduce nuclear safety and our democratic rights. This bill is a threat to our democracy, our national security, our economy and our safety.

Instead, demand the NRC, DOE and utilities enforce Nuclear Waste Policy Act and other nuclear safety requirements. Currently, they do not even enforce basic safety requirements we expect in a car.

- **Ability to inspect (inside and out), repair, maintain and monitor to prevent major leaks.**
- **Ability to minimize transport, environmental and security risks.**
- **Defense in depth (e.g., no single point of failure).**
- **Materials not subject to premature failure, such as cracking.**
- **Continuous monitoring systems to both prevent leaks and monitor leaks.**

Vote "NO" on H.R.3053 – The Nuclear Waste Policy Amendments Act of 2017

- Do not vote to eliminate critical storage and transport safety requirements.
- Do not vote to eliminate critical federal, state and local water, air and other rights.
- Do not vote to waste the already inadequate Nuclear Waste Funds.

For more details and recommendations to solve our "interim" nuclear waste problems, see *U.S. Commercial Nuclear Waste Storage and Transport – Problems and Solutions*, August 2017

Sincerely,

H.R.3053 - Nuclear Waste Policy Amendments Act of 2017 website
https://www.congress.gov/bill/115th-congress/house-bill/3053

U.S. Nuclear Waste Policy Act of 1982 (NWPA)
https://www.epw.senate.gov/nwpa82.pdf

Technical References available at *SanOnofreSafety.org*

U.S. COMMERCIAL NUCLEAR WASTE STORAGE AND TRANSPORT — PROBLEMS AND SOLUTIONS

EXECUTIVE SUMMARY

- **STORAGE PROBLEMS:** Nuclear waste is unsafely stored, maintained and monitored at most U.S. nuclear power facilities, with no adequate plan for cracking, leaking dry storage canisters and no adequate funding. These problems are not being addressed. Instead, proposed DOE and private company interim storage proposals ignore these problems and assume nothing will go wrong with these aging canisters.

- **TRANSPORT PROBLEMS:** Transport of thin-wall nuclear waste canisters and high burnup nuclear fuel waste is unsafe and these problems are not being addressed. Proposed DOE and private company interim storage proposals ignore these problems and assume nothing will go wrong when transporting these aging canisters and high burnup fuel waste.

- **SHIMKUS BILL 3053 PROBLEMS:** The Shimkus bill H.R. 3053 will make these problems worse. This inadequately funded bill ignores the nuclear fuel waste canister storage and transport problems, eliminates storage and transport safety requirements, eliminates oversight and transparency, and overrules existing federal, state and local water rights and other rights. This bill is a major threat to our safety, economy, security and democracy.

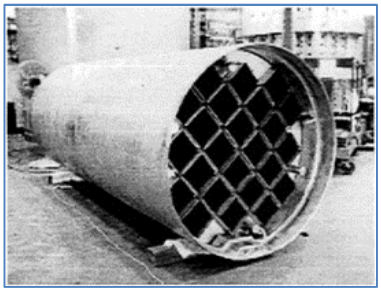
- **CONSEQUENCES**: Each canister contains as much lethal highly radioactive Cesium-137 and other radionuclides as was released in the Chernobyl nuclear disaster. A failure of only one "Chernobyl Canister" could result in permanent evacuation of over a 100 mile radius, permanent contamination of major food and water supplies, destabilization of the U.S. economy, increased security risks, major health and economic consequences to families, farmers, ranchers and other businesses, and permanent genetic damage affecting future generations of people and other living creatures on land and sea.

- **SOLUTIONS:** Oppose Shimkus bill H.R. 3053. Instead, expedite storage of spent nuclear fuel from inferior thin-wall canisters to thick-wall transportable cask systems, similar to those used in Germany, Japan and most other countries. Existing sites should be assessed for environmental and other risks to determine if fuel needs to be relocated to a different location on-site or to a nearby site without those risks, such as another operating nuclear reactor site. Transport is a major risk factor, so transport risks should be minimized. States should be given authority to raise minimum safety nuclear waste safety standards and to regulate nuclear waste stored and transported in their states. Adequate funding is needed for these efforts.

Following is a more detailed list of problems and recommended solutions. More information and source material is available upon request.

Other nations use safer thick-wall metal casks

Safety Features	Thin-wall canisters	Thick-wall casks
1. Thick walls	1/2” to 5/8”	**10” to 19.75”**
2. Won’t crack, maintainable		✓
3. Ability to inspect (inside & outside)		✓
4. Ability to repair, replace seals		✓
5. Early warning monitor to prevent leaks		✓
6. Continuous radiation monitoring		✓
7. ASME container certification		✓
8. Defense in depth (redundancy)		✓
9. Stored in concrete building		✓
10. Gamma & neutron protection	Requires vented concrete overpack	✓
11. Transportable w/o add’l cask	Cannot transport with cracks	✓
12. Proven technology	Unknown if cracked	✓
13. Market leader	U.S.	**World**



Thick casks in buildings for security & environmental protection

Japan – thick-wall casks in building at Fukushima

Survived 2011 Great Earthquake and tsunami

Germany – thick-wall casks in building at Gorleben

Stored for over 40 years without major problems

U.S. COMMERCIAL NUCLEAR WASTE STORAGE AND TRANSPORT — PROBLEMS AND SOLUTIONS

STORAGE PROBLEMS

1. Most U.S. nuclear plants store spent nuclear fuel waste in thin walled (1/2" to 5/8" thick) welded shut stainless steel canisters.
2. The thin wall canisters may crack and start leaking radiation after 20 years due to atmospheric and other corrosion factors and the nuclear industry has no on-site plan to deal with this.
3. Thin wall canisters can't be inspected for either interior or exterior cracks, and cannot be repaired, maintained or monitored to prevent leaks.
4. High burnup fuel used by reactors can cause fuel cladding to become damaged after dry storage.
5. The fuel and other contents (e.g., fuel baskets) in thin-wall canisters cannot be inspected.
6. If any of the over 2000 U.S. thin wall canisters have cracks, detection occurs once they start leaking radiation. The NRC only requires quarterly testing of radiation levels at canisters.
7. The Holtec canister vendor states even a microscopic through-wall crack will release millions of curies of radionuclides.
8. Thin walled canisters have no early warning monitoring system to prevent leaks, no continuous radiation monitoring system and no defense in depth.
9. Most utilities plan to destroy spent fuel pools after decommissioning. However, the only method utilities currently have to replace containers is to unload the fuel in a spent fuel pool. A dry fuel handling facility may be needed (due to explosive nature of irradiated high burnup fuel rods and to avoid damaging fuel). However, none exist at current sites to do this.
10. There is no adequate emergency plan. No one is addressing these problems.

TRANSPORT PROBLEMS

1. Canisters with even partial cracks are not approved for transport. NRC Regulation 10 CFR § 71.85.
2. High burnup fuel can become damaged in dry storage and transport, with no way to inspect for damage in thin-wall welded canisters.
3. A transport accident can result in a criticality, making communities permanent exclusion zones.
4. Transporting high burnup fuel in thin-wall canisters via trains has not been verified safe, so it is uncertain if train vibrations will cause the fuel cladding to fail and result in a criticality.
5. Our nation's crumbling infrastructure and system of highways, roads, and bridges is rated a D+, according to the American Society of Civil Engineers.
6. There is no adequate emergency plan. A truck or railway accident or terrorist attack involving transported nuclear waste would render entire cities and surrounding areas uninhabitable

SHIMKUS BILL H.R. 3053 PROBLEMS

1. Eliminates critical safety requirements for monitored retrievable spent fuel storage and transport.
2. Eliminates requirements to evaluate transport issues before building a site.
3. Eliminates state, local and public input, transparency and oversight after DOE contracts with a private company.
4. Eliminates (preempts) existing state and federal water rights, air rights and other rights.
5. Eliminates site specific environment review.
6. Eliminates the ability of States and local governments to use money received for hosting sites to challenge issues with the interim storage facility.
7. Eliminates congressional and other oversight of DOE nuclear waste storage and transport.
8. Distributes already inadequate Nuclear Waste Funds without first analyzing and resolving transport, storage, and site specific environmental risks.

U.S. COMMERCIAL NUCLEAR WASTE STORAGE AND TRANSPORT — PROBLEMS AND SOLUTIONS

SOLUTIONS

- **Require all nuclear waste storage systems be transportable and designed to be inspected, maintained and monitored to PREVENT radioactive leaks (*they currently are not*).**

1. Require transportable storage casks with proven ability to inspect (inside and outside the cask), repair, maintain and monitor to PREVENT leaks. Use materials that do not crack, designed for longer life, and have multiple redundancies to prevent radioactive releases.
2. Most of the rest of the world uses thick-wall metal casks that meet these requirements. Thick-wall casks survived the Great Earthquake and tsunami in Japan. Germany, France, Australia, Belgium, Italy, Switzerland, Russia, South Africa and most other countries use thick-wall metal casks.
    a. Thick-wall metal transportable storage casks are 10" to almost 20" thick, with two bolted lids and double metal seals in each lid for redundancies. *Thin-wall canisters are welded shut and cannot be inspected inside or out, and must be loaded into a reusable transport cask for transport. Thick wall transportable storage casks are directly transportable and can be inspected inside and have continuous pressure monitoring to prevent radioactive leaks.*
    b. Thick-wall transportable storage casks are proven technology for over 40 years. Most U.S. thin-wall canisters have been in use about 10 years or less and cannot be inspected, so are unproven technology. Utilities purchased them based on cost, not lifespan and safety.
3. Thick wall storage casks are designed for a longer life span. Thin-wall stainless steel canisters are vulnerable to short term cracks. Once a crack starts in a thin-wall canister, cracks continue to grow through the wall of the canister. The NRC states it can take 16 years for cracks to grow through the wall. Holtec canister vendor states even a microscopic through-wall crack will release millions of curies of radionuclides and cracks are not feasible to repair even if you could find them.
4. Require continuous remote early warning monitoring systems to **prevent** radioactive leaks.
5. Require ability to inspect and retrieve spent fuel assemblies without destroying the container. *Each thin-wall canister system cost about $4 million (includes materials and labor).*
6. Require an on-site replacement and repair plan.
7. Keep the spent fuel pools until after all nuclear waste is removed from the site.
8. Evaluate need to build a dry fuel handling facility, if returning fuel from dry to wet storage might cause an explosive reaction or damage the fuel.

- **Increase protection from environmental and security risks BEFORE the canisters leak**

1. Store casks in hardened reinforced buildings for additional environmental and security protection.
2. Require utilities fund state and local emergency planning, and on-line continuous radiation monitoring, until all waste is removed from site. Provide on-line public access to this information.

- **Improve safety of existing dry storage nuclear fuel waste BEFORE the canisters leak**

1. Expedite removal of fuel from thin-wall canisters to safer thick-wall casks, before these "Chernobyl canisters" leak and potentially explode.
2. For high risk sites, relocate waste to a safer site, while minimizing transport and environment risks (e. g., relocate from areas with high risk of flooding, coastal corrosion, or coastal erosion). Do not relocate waste for the purpose of consolidating waste. This is an unnecessary transport risk.
3. Permit states to regulate and oversee nuclear waste storage and transport, and allow them to set higher nuclear waste standards. It's time to end federal preemption of states' rights for nuclear waste stored in their states.
4. Allocate funding to address these urgent nuclear waste storage and transport issues.