

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA**

Beyond Nuclear,	)	
Nuclear Information and Resource Service,	)	
Savannah River Site Watch,	)	Case No. <u>16-cv-1641</u>
Citizens for Alternatives to Chemical	)	
Contamination,	)	
Lone Tree Council	)	
Sierra Club	)	.
and Environmentalists, Inc.,	)	
	)	
Plaintiffs,	)	
	)	
-vs-	)	
	)	
U.S. Department of Energy	)	
1000 Independence Ave., SW	)	
Washington, DC 20585	)	
	)	
and	)	
	)	
Ernest Moniz, Secretary	)	
U.S. Department of Energy	)	
1000 Independence Ave., SW	)	
Washington, DC 20585	)	
	)	
and	)	
	)	
Monica C. Regalbuto	)	
Assistant Secretary for Environmental	)	
Management	)	
U.S. Department of Energy	)	
1000 Independence Ave., SW	)	
Washington, DC 20585	)	
	)	
and	)	
	)	
David Huizenga	)	
Assistant Deputy Administrator	)	
National Nuclear Security Administration	)	

U.S. Department of Energy )  
1000 Independence Ave., SW )  
Washington, DC 20585 )

and )

Jack R. Craig, Jr., Manager )  
U. S. Department of Energy )  
Savannah River Site Operations Office )  
P. O. Box A )  
Aiken, SC 29802, )

and )

United States of America )  
c/o Attorney-General of the )  
United States )  
U.S. Department of Justice )  
Environment and Natural Resources )  
Division )  
Law and Policy Section )  
950 Pennsylvania Avenue, N.W. )  
Washington, DC 20530-0001 )

and )

United States of America )  
c/o United States Attorney's Office )  
Civil Process Clerk )  
555 4th Street, NW )  
Washington, DC 20530, )

Defendants. )

)

**COMPLAINT FOR DECLARATORY AND ADMINISTRATIVE RELIEF,**  
**PRELIMINARY AND PERMANENT INJUNCTIONS**

Now come Beyond Nuclear, the Nuclear Information and Resource Service, Savannah  
River Site Watch, Citizens for Alternatives to Chemical Contamination, Lone Tree Council,

Sierra Club, and Environmentalists, Inc., all Plaintiffs herein, by and through counsel, and set forth the following as and for their Complaint:

### ***I. PRELIMINARY STATEMENT***

1. This lawsuit arises under the National Environmental Policy Act of 1969, as amended (“NEPA”), 42 U.S.C. § 4321 *et seq.*, wherein the Plaintiffs seek declaratory judgment relief and for the Court to require an Environmental Impact Statement addressing a proposed radioactive waste import and transport project which would be undertaken by the Defendant U.S. Department of Energy. Plaintiffs further seek temporary restraining orders and the issuance of preliminary and permanent injunctions to halt implementation of the project until the NEPA document is completed. Suit is brought against the United States and its Department of Energy (“DOE”), the DOE Secretary, its Assistant Secretary for Environmental Management, an Assistant Deputy Administrator of the National Nuclear Security Administration (part of DOE), and DOE’s Manager of the Savannah River Site Operations Office. Collectively, they will be referred to as the “DOE Defendants.”

2. The Plaintiffs seek to have the DOE Defendants enjoined from permitting, allowing or causing the import and transport of inherently dangerous, highly radioactive liquid waste, designated by the DOE as Highly Enriched Uranyl Nitrate Liquid (“HEUNL”), across the 1,100+ mile distance from Chalk River, Ontario, Canada to the Savannah River Site (SRS) in South Carolina in the absence of full compliance with federal law. The proposed transport of the liquid waste is unprecedented and comprises a major federal action. DOE has not compiled an environmental impact statement (“EIS”) or environmental assessment (“EA”) in compliance with the National Environmental Policy Act. For DOE to undertake the approximately 150 planned

shipments of this dangerously-radioactive waste over the next several years without NEPA compliance will also violate DOE's obligations under the Atomic Energy Act and will cause serious and irretrievable procedural injury, if not actual personal physical injury and property damage, to people living along the route in two countries.

3. The liquid waste results from the Canadian government's use of highly-enriched uranium (HEU) targets provided by the U.S. Department of Energy for production of medical radioisotopes. The targets are irradiated in a nuclear reactor and then dissolved in nitric acid so that certain useful medical isotopes can be chemically extracted from the liquid solution. The residual highly radioactive liquid waste which results, containing a multitude of radioactive byproducts of nuclear fission, is the material in question in this suit.

4. The designation "HEUNL" is a misnomer, as highly-enriched uranyl nitrate is just one particular radioactive compound out of dozens that are actually present within the radioactive liquid waste in question. In particular, highly-enriched uranyl nitrate represents less than one hundredth of one per cent (0.01%), or 1/10,000th of the radioactivity contained in the liquid waste that DOE has chosen to designate as HEUNL. The liquid waste does contain a relatively small but important percentage of highly-enriched uranium ("HEU"), which is nuclear weapons usable material, in the chemical form of uranyl nitrate. But the waste also contains many other dangerous isotopes, including radioactive varieties of cesium, niobium, zirconium, rhodium, rubidium, iodine, xenon, tellurium, barium, lanthanum, cerium, strontium, praseodymium, neodymium, europium, neptunium and plutonium. Thus the material to be shipped is functionally equivalent to liquid high-level radioactive waste ("LHLRW") that results from dissolving spent nuclear fuel in nitric acid for the purpose of reprocessing.

5. The dangers of the many highly radioactive and/or radiotoxic isotopes in this inappropriately designated liquid waste are significant and in some cases even legendary. For example, radioactive cesium-137 (Cs-137) and strontium-90 (Sr-90) are known to pose considerable public health dangers. Cesium-137 is highly water-soluble and volatile, and can easily be taken up into plant and animal tissue, and thus enter the food chain. Cesium-137 is mistaken by the body for potassium, and readily incorporated into muscle and other tissues, especially the soft organs, where it can cause very serious damage. The concentration of cesium-137 in the proposed waste shipment from Chalk River is on average four times greater than that in the liquid post-reprocessing liquid high-level radioactive wastes (“LHLRW”) held in steel tanks at Hanford Nuclear Reservation. Strontium-90, infamous as a byproduct of nuclear bomb tests, is chemically similar to calcium, so the body readily incorporates it into bone and teeth tissue, from whence it bombards surrounding cells with radiation and has been known to cause cancers and fatal blood disorders including leukemia.

6. DOE’s proposal for import and transport of highly radioactive liquid material that is equivalent to liquid high-level radioactive waste (LHLRW) is unprecedented. Such import and transport poses a wide spectrum of dangers, whether from leakage of the liquid contents due to sabotage, accident, or malfunction or from the emanation of penetrating gamma and neutron radiation from the cargo during transportation due to accidental criticality or inadequacies in shielding. The Plaintiffs seek to have the DOE Defendants enjoined from undertaking, allowing or causing the import and transport of inherently dangerous, highly radioactive liquid waste. The waste cargoes, misleadingly named highly-enriched uranyl nitrate liquid (“HEUNL”), would be hauled across the 1,100+ mile distance from Chalk River, Ontario, Canada to the Savannah River

Site (SRS) in South Carolina without having complied with United States law.

## ***II. JURISDICTION AND VENUE***

7. This lawsuit arises under the National Environmental Policy Act of 1969, as amended (“NEPA”), 42 U.S.C. § 4321 *et seq.*, and its implementing regulations, adopted by the Council on Environmental Quality (“CEQ”) and applicable to all federal agencies. Further, suit is brought under the Atomic Energy Act, 42 U.S.C. § 2011 *et seq.*, including but not limited to §§ 2011, 2060, 2111, and 2114.

8. Judicial review is sought pursuant to the Administrative Procedure Act (“APA”), 5 U.S.C. §§ 701-706, which authorizes judicial review of all federal agency actions. The Court has jurisdiction over this lawsuit pursuant to 28 U.S.C. §§ 1311 and 1361, including the power to grant a declaratory judgment and further relief, pursuant to 28 U.S.C. §§ 2201 and 2202.

9. Venue is laid in the U.S. District Court for the U.S. District of Columbia pursuant to 28 U.S.C. § 1391(e) by reason of the fact that the Department of Energy, DOE Secretary Ernest Moniz, Assistant Secretary for Environmental Management Monica Regalbuto, and Assistant Deputy Administrator of the National Nuclear Security Administration David Huizenga, have their offices within the District in which they conducted reviews and granted administrative approvals which have given rise to the proposed import and transport project.

10. This case seeks remedies under 28 U.S.C. §§ 2201 and 2202, 42 U.S.C. § 1988, and Fed.R.Civ.P. 65. This Court may issue a temporary restraining order and preliminary injunction pursuant to Fed.R.Civ.P. 65(b).

## ***III. PARTIES***

### ***A. Plaintiffs***

11. Plaintiff Beyond Nuclear is a nonprofit § 501(c)(3) organization which educates and activates the American public about the connections between nuclear power and nuclear weapons and the need to abolish both to safeguard our future. Located at 6930 Carroll Avenue, Suite 400, Takoma Park, MD 20912, Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic. The organization brings suit on behalf of three of its approximately 15,000 members, Michael Keegan, Jason “Jocko” Randall and Jessica Azulay Chasnoff.

12. Beyond Nuclear member Michael Keegan lives at 811 Harrison, Monroe, Michigan. His home is approximately 35 miles south of downtown Detroit, Michigan, and within 2 miles of Interstate Highway 75. Keegan regularly drives on I-75. He is concerned that shipments of this liquid high level radioactive waste will pass near his home via I-75 if they are transported from Ontario into Michigan. A spill near Monroe, Michigan on I-75 could contaminate the extensive, connected rivers, streams and estuaries of nearby Lake Erie which at some locations are on either side of the highway with waterborne radioactive waste contamination. A spill also could create a radioactive plume which could travel for miles downwind. Keegan notes that I-75 is more or less constantly being maintained and repaved and traffic backups are a daily occurrence, such that even if the highly-radioactive wastes from Chalk River were not involved in an accident, penetrating gamma radiation from the shipments could irradiate people in other vehicles, especially in a lengthy stop-and-go situation.

13. Beyond Nuclear member Jessica Azulay Chasnoff lives at 203 Bassett Street, Syracuse, NY, about a mile from Interstate Highway 81. Chasnoff is concerned that at least some of the projected 150 shipments of casks containing so-called Highly Enriched Uranyl Nitrate Liquid (HEUNL) from Chalk River, Ontario to the Savannah River Site (SRS) in South Carolina

will cross at the Thousand Islands border crossing north of Syracuse and transit through the City of Syracuse on I-81. Her employment is about 1.2 miles from I-81. Syracuse is located about one hour's drive south of the Thousand Islands border crossing from Canada, and I-81 is the only interstate highway which connects to that crossing and proceeds southwest through Syracuse. Chasnoff spends much of her time within a two-mile distance from I-81. Her partner, Jason "Jocko" Randall, owns an apartment and recording studio within a few hundred feet of I-81 and they often spend time at that location. Chasnoff has learned from expert opinions that the fact that the highly-radioactive liquid waste from Chalk River is in liquid form that it is considerably more dangerous than solid high-level radioactive waste. In the event of accident, the liquid waste can travel more readily through soil, water and air more than solid radioactive waste. Chasnoff believes that such a release could contaminate the lands and surface waters of Syracuse and threaten, impair or damage her home and place of employment as well as recreational opportunities public water supply. Chasnoff further anticipates possible exposure to routine radiation emissions from the device used to haul the liquid radioactive waste. She has been told by competent authority that the shipping casks will constantly emanate some gamma and neutron radiation, which means that in traffic backups from accidents, construction and peak usage of I-81, slow-moving or stopped traffic in Syracuse might mean inadvertent exposure to potentially significant penetrating radiation from a slowed or stopped truck carrying the waste. As a woman of child-bearing age, the risk of being exposed to radiation from the shipping containers or the residual contamination on the outside of shipping containers is of personal concern.

14. Beyond Nuclear member Jason "Jocko" Randall lives in an apartment and runs a recording studio business a few hundred feet from Interstate Highway 81 at 132 Burnett Ave,

Syracuse, NY. He spends the great majority of his time within a mile of I-81, living, working and recreating, sometimes with his partner, Jessica Azulay Chasnoff. Randall, also, after reviewing expert opinions, believes that the proposed DOE shipments from Chalk River are considerably more dangerous than solid high-level radioactive waste because of being transported in liquid form. He worries that spilled or leaked liquid radioactive waste can travel more readily through soil, water and air more than solid radioactive waste and that a spill could threaten, impair or damage his home, place of employment, recreational opportunities and public water supply. He, too, worries about potential exposure to “routine” radiation emissions from the transport device that will be used to haul the liquid radioactive waste simply by being on I-81 in stop-and-start traffic at the wrong time and place.

15. Plaintiff Nuclear Information and Resource Service (“NIRS”) is a nonprofit § 501(c)(3) organization situated at 6930 Carroll Avenue, Suite 340, Takoma Park, MD 20912. Founded in 1978, NIRS is a national information and networking center for citizens and environmental activists concerned about nuclear power, radioactive waste, radiation and sustainable energy issues.

16. Plaintiff NIRS brings suit on behalf of a member and employee, Mary Olson, who staffs NIRS’ Southeast Office at 45 Riverview Drive, Asheville, NC 28806. The Southeast Office, owned by NIRS, is located within one-half mile of the Interstate 26/Interstate 240 bridge across the French Broad River in Asheville. If there were a spill at or near that junction, NIRS could suffer catastrophic loss of property value and harm to its member or employee if there is airborne radiation, land contamination by the highly radioactive liquid waste, and/or airborne dispersal and/or waterborne leakage of it. Mary Olson uses the I-26 bridge almost daily.

Interstate 81 to I-26 (Johnson City, TN area) to Interstate 20 is a potential route which also connects to the I-81 to I-77 route which DOE might use as a delivery route for the HEUNL waste. Additionally, Olson lives within 3 miles of I-40, another possible waste delivery route, which intersects with I-26. Because greater Asheville's population is less than 500,000 people, in contrast to the 2.3 million population where Interstate 77 proceeds through Charlotte, North Carolina, there is certainly a strong likelihood that multiple shipments of the highly radioactive liquid waste which DOE calls HEUNL will travel through the Asheville area to avoid the higher-population Charlotte area. Olson frequently canoes on the French Broad River immediately below her home, up and downstream from the interstate crossings. She frequently takes her dogs to play in a dog park next to it. She drives on the two interstate highways that could be waste routes nearly every time she leaves her home since the mountainous Appalachian terrain offers few alternative conduits. Gamma and neutron radiation is routinely allowed to emanate from the radioactive waste transport vehicles, such that even unremarkable shipping methods could result in her being exposed to penetrating radiation while traveling along an interstate route being used for HEUNL shipments. Frequent traffic tie-ups on these interstates for hours, from accidents, bad weather and tourist overcrowding further could cause Olson risks from exposure merely by being situated near the transport vehicles in stop-and-go traffic for extended periods of time. Medical experts recognize no "safe" exposure to radioactivity. Finally, Olson maintains that a radioactive spill could harm the economy of the Asheville region, which centers a lot on providing goods and services in support of a healthy mountain lifestyle. This in turn could harm the economic prosperity of her life partner, and their household income.

17. Plaintiff Savannah River Site Watch is a nongovernmental § 501(c)(3) organization

located at 1112 Florence Street, Columbia, SC 29201, which seeks to intervene in this lawsuit on behalf of its member and director, Tom Clements. SRS Watch conducts public interest oversight monitoring of the DOE at SRS, with a focus on cleanup of radioactive waste, import of nuclear waste and plutonium, management of nuclear processing and reprocessing facilities and storage and disposition of nuclear weapons materials. Clements lives at the Florence St. address, which is approximately one mile from the Broad River, over which Interstate 20 passes on a bridge located upstream about three miles. I-20 is a principal highway in South Carolina and is the main interstate highway nearest the Savannah River Site and is thus a key shipping route into SRS from points to the north and east. Clements lives about two miles from the Saluda River, which has a bridge near I-20. He lives roughly 2 miles from the Congaree River, which is formed when the Broad River and Saluda River come together approximately 4 miles below the I-20 bridges that cross the rivers upstream. Clements bicycles on an almost-daily basis during warm weather on the bike path by the Broad River and swims and kayaks occasionally on it, about a mile downstream from the I-20 bridge. He boats and floats on the Saluda River from time to time, including annual tubing trips down a segment of the river approximately 2 miles south of the I-20 bridge. According to Clements, the City of Columbia draws drinking water from the Broad River, which Clements uses as his water source. Dozens of times annually, Clements drives his personal automobile over the I-20 bridges, often to meetings held in Aiken, SC and Augusta, GA on business related to the Savannah River Site. Besides having concerns about spillage or contamination of the public and the environment from the proposed waste shipments to SRS from Canada, Clements rates the 60-year-old materials processing facility at SRS known as "H-Canyon," where the liquid high-level waste would be processed, as one of the

most likely facilities at the SRS to suffer an accident that could result in worker and public radiation exposure and environmental contamination because of its dated physical infrastructure. Clements has repeatedly commented for three years, orally and in writing, to the Department of Energy that there has been no serious analysis and disclosure to the public by the DOE of the potential breaches of the transport casks, nor of threats to safety, nor of environmental threats, public health threats, mitigation measures and alternatives to shipping highly radioactive liquid waste to SRS. As a public overseer of SRS, he believes that there has been no consideration of the apparent long-term project of DOE to repatriate nuclear waste from several countries, including the waste from Canada, to SRS and that no Environmental Impact Statement has been compiled on the import and transport of liquid waste, nor has a Programmatic Environmental Impact Statement been prepared to address contemplated imports of nuclear waste.

18. Plaintiff Lone Tree Council is an environmental nonprofit membership organization since 1978 in the Bay City/Saginaw region of Michigan, dedicated to protecting the Michigan environment through action and education. It brings suit on behalf of its chairman, Terry Miller, who lives at 4649 David Ct., Bay City, MI 48706. Miller lives within one mile of U.S. Highway 10 and within two miles of the U.S. 10/Interstate 75 highway interchange. Miller believes that if the DOE ships HEUNL liquid waste via the Canada-U.S. border crossing in northern Michigan or at Port Huron, an hour north of Detroit, that transport will ultimately involve use of Interstate-75. Miller travels on the U.S. 10 overpass over I-75 nearly daily, and frequently takes the U.S.10 to I-75 interchange and drives south to Saginaw. Miller obtains his drinking water from Lake Huron (along with 1.5 million other people) and states that a radioactive waste spill accident into the watershed of the Saginaw River and Bay could compromise drinking water, fisheries, and

recreational tourism for him, and many others. Miller fishes in Lake Huron and Saginaw Bay, boats in those waters and regularly visits both Tobico Marsh Nature Area and the Bay City State Park on the shores of Saginaw Bay. Also, Monitor Township, Michigan, where Miller lives, is primarily agricultural. Farm fields run the length of the township and are intersected by I-75. These fields, consisting of corn, sugar beets, and soy beans, would be vulnerable to a serious radioactive waste accident with emissions or spills to the air, water or land. Since Miller obtains some of his family's food from farms located along the I-75 corridor, a serious radioactive waste accident could affect his access to locally-grown food.

19. Plaintiff Citizens for Alternatives to Chemical Contamination (CACC) is a grassroots environmental education and advocacy organization headquartered in central Michigan at 8735 Maple Grove Rd., Lake, MI 48632. CACC is dedicated to the principles of social and environmental justice, pollution prevention, citizen empowerment, and protection of the Great Lakes ecosystem. CACC sues on behalf of its member, Connie Beauvais, who resides at 13031 Center, Bath, MI 48808-8437. Beauvais lives in central lower Michigan, about four miles from the interchange of Interstate 69 and U.S. Highway 127. U.S. 127 splits off from nearby Interstate 75, which comes south from the bridge at Sault Ste. Marie after crossing the border from Canada and could potentially be used as an alternate route for import and transport of the waste. Beauvais has studied the DOE plan for transport and notes that I-69 East to I-75 South or I-69 South could be potential routes to the SRS. Beauvais frequently visits the Bengal Wildlife Center in Bath, MI which is located within a mile of I-69 and is also within a mile of U.S. 127. Further, Beauvais often hikes and hunts for morel mushrooms in Rose Lake State Wildlife Area, which lies within two miles or even closer to I-69. Beauvais has an organic garden at her residence and is

concerned that it could be damaged by emissions or spills to the air, water or land. Beauvais is concerned that the transports could also be attacked by terrorists. Beauvais believes that a spill of liquid highly radioactive waste could contaminate area lands and water, and would pose a threat to public health and the environment. The many acres of surface water in her township, if contaminated, could carry radiation through interconnections to curtail Beauvais' use of the Rose Lake Wildlife Area, access to regional major highway transportation, and usage of the Bengal Wildlife Center for recreation.

20. Plaintiff Sierra Club is a national nonprofit organization with 64 chapters and over 635,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The New York State Chapter of the Sierra Club has approximately 40,000 members in the State of New York. The Sierra Club's concerns encompass preservation of the natural and associated human environments, and basic systems and resources which sustain life on Earth. The Club's particular interest in this case and the issues which the case concerns stem public health and environmental safety aspects of the U.S. policies concerning transport and re-use of dangerous radioactive wastes generated from U.S. Department of Energy exports of highly-enriched uranium.

21. Three New York Sierra Club Chapter members claim an interest in this litigation. One is Lynda Schneekloth, who lives at 601 W. Ferry St., Buffalo, NY 14222. Her home is within 1.5 miles both of the Peace Bridge which crosses the Niagara River from Canada into the United

States, and also of Interstate-90, a route that could be used for transport of the waste along the Niagara River. Schneekloth's water supply comes from Lake Erie. That water intake is located two miles southwest of the Peace Bridge, where Lake Erie enters the Niagara River, flowing north. Schneekloth frequently uses the public parks adjacent to the Niagara River more than weekly. She walks her dog along the upstream and downstream shores of the River. During the summer months, she kayaks on the Niagara River on Grand Island, the Lake Erie shoreline along the Outer Harbor, and also in the Buffalo River, which empties into the Niagara River. She has fished with her grandchildren from Broderick Park on Unity Island just north of the Peace Bridge on the River, and often walks along the Bird Island pier that sits between the Niagara River and Black Rock Canal. She patronizes commercial establishments and the dog park along the Niagara River and at Lasalle Park, all of which are in her neighborhood. Besides being a longtime member of the Sierra Club, Niagara Group and serving as its chair for the past four years, Schneekloth is a founding member of the Buffalo Niagara Riverkeeper, which has worked for more than a quarter-century to bring millions of dollars' worth of grant money into the area to clean up long-standing industrial contamination in the Niagara River and the Buffalo River to the point where the waters are nearly meeting the goals of the federal Clean Water Act. Besides her concerns that a liquid radiation spill could contaminate land, air and water and threaten her home and family, Schneekloth believes there may be longer-term implications for declining property values in such event.

22. Plaintiff Sierra Club also brings suit on behalf New York Chapter member Pamela Hughes, who resides at 935 Creek Road Extension, Lewiston, NY 14092. Hughes lives approximately one mile from the Niagara River and less than two miles from the Lewiston-

Queenston Bridge at the U.S.-Canada border. The I-190 Niagara Thruway precedes and connects onto the Lewiston-Queenston Bridge and becomes the 405 Highway in Ontario, Canada. For more than eight years, Hughes has at least weekly, year-round, taken her dogs for hikes along the Niagara River gorge on the American side, beginning at the back end of Art Park and along the gorge up to and just under the Lewiston-Queenston Bridge. Hughes' U.S. Congressman from the Niagara region, Brian Higgins, is a member of the House Committee on Homeland Security, and he has told Hughes and other constituents that the Department of Energy provides little assurance that an act of terrorism or accident involving the HEUNL transports would be properly managed to minimize danger to the environment or the public. Hughes fears losing her drinking water source and recreation opportunities in the event of a liquid highly-radioactive waste spill.

23. Plaintiff Sierra Club also sues on behalf of New York Chapter member Sara Moretta, who makes her home at 3383 Greenway Road, Grand Island, NY 14072. She lives on the northernmost tip of Grand Island, and the Niagara River is only 1 to 1.5 city blocks from her home. The I-90 Thruway (Grand Island North Bridge) is just northwest of her house. Moretta can see the Bridge, and Niagara Falls from the end of her street. During the warm months of the year, Moretta and her family ride bicycles with friends along the Niagara River in Buckthorn Park. On a weekly basis, her family goes to the Sandy Beach Park Club to play on the beach and swim in the River. Moretta and her family are avid boaters and weekly go out on Lake Erie and the Niagara River, where they often swim. She and her spouse enjoy watching their young children learning to appreciate the natural areas on and around Grand Island. Moretta believes that if HEUNL liquid waste is hauled through western New York State, it will cross from Canada within the vicinity of her home on Grand Island. If there were a liquid radioactive waste accident

causing a spill, Lake Erie and the Niagara River could be seriously harmed as a recreation and drinking water source for Moretta and her family.

24. Plaintiff Environmentalists, Inc. is headquartered at 354 Woodland Dr., Columbus, NC 28772, and is a § 501(c)(3) nonprofit corporation which for more than 40 years has organized and educated the public in North Carolina and South Carolina of threats and dangers to the public health and environment from major projects. Environmentalists, Inc. sues on behalf of two members. One, Joanne Williams, resides at 6436 Sylvan Dr., Columbia, SC 29206, and lives twelve miles from the junction of U.S. Interstates 20 (I-20) and 26 (I-26). She resides about 90 miles from the SRS and believes that the DOE will import and transport one or more shipments of the liquid waste via these interstate highways. Consequently, it will not be possible for the shipments to avoid this intersection. Locally, this interstate exchange is known as “malfunction junction” because of frequent traffic tie-ups. In the event of an accident involving the liquid waste, Williams is concerned that she and her family might find themselves residing within a downwind danger zone of an airborne plume of radioactivity from a breach of a canister or canisters. The I-26 Pedestrian Trail Bridge is 11 miles from Williams’ house, where Williams and her husband have regularly walked for years, half a dozen times per year, year-round. I-26 passes close to Lake Murray, which is a major water recreation asset that Williams and her family visit from time to time. Williams is concerned that she and her family would lose the use of Lake Murray in the event of a serious spill accident.

25. The other member being represented in this litigation by Plaintiff Environmentalists, Inc. is Marvin Lewis, who is a retired professional engineer with 50 years of professional experience, resident at 3133 Fairfield Street in northeast Philadelphia, Pennsylvania. Lewis lives

within sight of Interstate highway 95, which begins at the New York/Ontario border and runs south to the Savannah River Site. There have been innumerable auto and train accidents in the area of Philadelphia where Lewis lives in recent years. I-95 carries vehicular traffic within a few hundred feet of railroad traffic. The railroad cargoes include Bakken crude oil, often in trains of 100 tank cars carrying the volatile oil. One recent Bakken oil train accident overturned 100 rail cars, put dozens of people in local hospitals and killed eight. Marvin Lewis is concerned about the prospect of a simultaneous “bomb train” explosion coincident to a highly radioactive liquid waste cargo traveling on the nearby interstate system, and particularly, the downwind dangers to his family and community if there were a breach of the transport canisters leading to a dispersal of radioactive materials.

### **B. Defendants**

26. The U.S. Department of Energy (“DOE”) is a statutorily-created department of the Federal Government which is headquartered at the Forrestal Building, 1000 Independence Ave., SW, Washington, D.C. 20585. Defendant DOE is capable of being sued.

27. Defendant Ernest Moniz is sued in his official capacity as Secretary of the U.S. Department of Energy and his office is located at 1000 Independence Ave., SW, Washington, D.C. 20585. Defendant Moniz is supervisor of other DOE employees who directly oversee the liquid radioactive waste transport project and the repatriation of HEU waste from other countries, and is ultimately responsible for decisions made relative to transport, storage and reprocessing.

28. Defendant Monica C. Regalbutto is sued in her official capacity as Assistant Secretary for Environmental Management of the U.S. Department of Energy (hereafter “Defendant Assistant Secretary”) and her offices are located at 1000 Independence Ave., SW, Washington,

D.C. As Assistant Secretary, Defendant Regalbuto approved and signed, on or about December 2, 2015, a key decisional document related to the import and transport scheme titled “Supplement Analysis for the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program: Highly Enriched Uranium Target Residue Material Transportation” (“2015 Supplement Analysis”). She did so within the scope of her employment as DOE Assistant Secretary for Environmental Management.

29. Defendant David Huizenga is sued in his official capacity as Assistant Deputy Administrator of the National Nuclear Security Administration of the U.S. Department of Energy and his office is located at 1000 Independence Ave., SW, Washington, DC 20585. Defendant Huizenga approved and signed, on or about April 5, 2013, a key decisional document related to the import and transport scheme titled “Supplement Analysis: Savannah River Site Spent Nuclear Fuel Management” (“2013 Supplement Analysis”). He did so within the scope of his employment in his then-capacity of DOE’s Senior Advisor for Environmental Management.

30. Defendant Jack R. Craig, Jr. is sued in his official capacity as Manager of the NNSA’s Savannah River Operations Office. Defendant Craig is involved in the chain of decision-making related to compliance with the National Environmental Policy Act at SRS. He has, or shares, responsibility for the decision to proceed with the import and transport plan. Defendant Craig’s office is located at the Savannah River Site installation.

#### ***IV. THE PROPOSED AGENCY ACTIONS***

31. DOE, DOE/NNSA and DOE/SRS officials are preparing to import into the United States and to transport on its highways a toxic liquid stew containing weapons-usable highly-enriched uranium and a host of dangerous, even lethal radioisotopes via truck from the Fissile

Solutions Storage Tank (“FISST”) at Chalk River, Ontario to the Savannah River Site in South Carolina. The unprecedented mission will see shipment of 23,000 liters (about 6,100 gallons) of highly radioactive liquid waste from Chalk River to SRS, a distance of more than 1,100 miles depending on the highway route selected. The project would require an estimated 150 or more separate transport missions to deliver the waste from Chalk River to SRS over several years.

32. As previously stated, the mixture slated for shipment is formally designated by the DOE Defendants as highly-enriched uranyl nitrate liquid, or HEUNL. That designation is a misnomer, however. Radioactive waste experts consulted by the Plaintiffs consider the liquid mixture to be equivalent to Liquid High-Level Radioactive Waste (LHLRW). What would be shipped is a highly radioactive liquid waste mixture of many different radioactive isotopes, currently stored in the FISST at Chalk River. Because the liquid waste in question results from dissolving irradiated uranium targets in nitric acid, the resulting liquid solution contains fission products and transuranic elements that are typically found in irradiated nuclear fuel. The residual uranium in the liquid waste is highly-enriched uranium, or HEU and it represents an extremely small component of the total radioactive inventory of the liquid waste. The mixture is similar in nature to the post-reprocessing liquid waste stored in hundreds of steel tanks at the Hanford Nuclear Reservation in Washington State. That waste has never been transported over public roads in liquid form. The radioactive waste byproducts resulting from processing the HEU targets at Chalk River are acknowledged to be among the most radioactively hazardous materials on Earth. They would be more easily dispersed into the environment in liquid form than in solid form, in the event of a breach of containment during transport.

33. The FISST tank at Chalk River which holds the HEU waste is a double-walled,

stainless-steel vessel containing 17 years' worth of an intensely radioactive acidic solution from the production of molybdenum-99, a medical isotope created as a fission product by irradiating HEU targets. The highly radioactive liquid must be carefully monitored and constantly mixed and warmed to prevent it from solidifying or evaporating in ways that could conceivably concentrate the HEU. Under worst-case circumstances, if the concentration of HEU is sufficiently elevated, there is the potential for inadvertent causation of a self-sustaining chain reaction of fissioning atoms, which is called "criticality." The energy and heat from such a spontaneous chain reaction could potentially rupture the tank and release or expel much of the highly radioactive solution into the environment, endangering workers and the general public in the vicinity. Even absent a breach of the container, the neutron and gamma radiation burst would endanger those nearby; as would radioactive gases and volatiles generated and emitted by the criticality.

34. The U.S. Nuclear Regulatory Commission ("NRC") has certified transport of the liquid waste in stainless steel casks that were designed and previously used only for the carriage of solid nuclear waste, such as spent irradiated nuclear fuel rods from reactors. NAC International Inc., a U.S. company specializing in packaging and transport of nuclear materials, has obtained NRC and Canadian Nuclear Safety Commission ("CNSC") approvals to use its Nuclear Assurance Corporation - Legal Weight Truck ("NAC-LWT") cask system to haul the radioactive liquid from Canada in an unprecedented transport campaign.

35. In its NRC filings, NAC International proposes that each cask carry up to 257 liters (about 68 gallons) of the highly radioactive liquid waste from the FISST tank divided into four smaller containers which would each hold about 64 liters (about 17 gallons). The estimated HEU

content in each of these smaller containers would be about 1.8 grams (a mere 0.063 ounces). These containers of liquid waste would be placed inside the NAC-LWT cask in the same position that has been previously used to hold only solid radioactive cargo. At Savannah River, the liquid would be taken to H-Canyon and following chemical separation of HEU, the highly-enriched uranium component would be down-blended using a liquid uranyl nitrate process. The resulting product would no longer be highly-enriched (weapons-grade) HEU but low-enriched (reactor grade) LEU, suitable for use as commercial reactor fuel. The LEU would then be transported to a facility in Erwin, Tennessee, and used as feedstock to fabricate fuel for nuclear power reactors operated by the Tennessee Valley Authority.

36. The import and transport of highly radioactive liquid waste is being justified under a US-Canada agreement to return highly-enriched uranium to the United States. However, shipping of high-level radioactive waste in liquid form over public roads has never occurred in the 75-year history of U.S. nuclear power, research, medical isotope production, and weapons programs. The proposed trucking of highly radioactive liquid waste, the so-called HEUNL, presents a host of unexamined risks, such as a breach of containment allowing the liquid to be dispersed; external gamma and neutron radiation hazards to workers and bystanders during transport and following arrival at SRS; internal radiological contamination of workers and bystanders due to inhalation or ingestion of radionuclides following a spill; the potential for accidents en route; the possibility of theft, sabotage or acts of terrorism; and the potential for accidentally triggering a criticality event.

37. There is no justification to import and transport the material in liquid form because there are alternatives which have not been analyzed and considered in an EIS with a mandatory

public process. The highly radioactive liquid waste can be solidified and stored on-site at Chalk River in a solid form, as was originally intended by the Canadian authorities. At Chalk River, solidification has been done since 2003 for material that is virtually identical in form, origin and content to the wastes intended to be exported to the United States. The FISST tank has been completely full since 2003, and since then all subsequent HEU-bearing liquid waste – waste that would have been stored in the FISST tank in earlier days – is being subjected to solidification. Additionally, the liquid radioactive contents of some 21 deteriorating storage tanks at Chalk River are being solidified on site, and the same solidification procedure was originally intended for the contents of FISST.

38. Another alternative to the import and transport of the waste in liquid form that has not been analyzed and considered in an EIS with its obligatory public process is down-blending the highly radioactive liquid waste on-site at Chalk River, thereby eliminating the rationale for importing it into the USA and transporting it on public roads. Down-blending is a procedure that was originally planned by the Canadian authorities to alter the isotopic composition of the highly-enriched uranyl nitrate component, converting it from HEU to LEU so that it is no longer nuclear weapons-usable material, thereby eliminating the stated rationale for importing and transporting the material from Chalk River to the Savannah River Site. In its 2011 “Evaluation of the Nuclear Legacy Liabilities Program (NLLP) of the Energy Sector, Natural Resources Canada,”<sup>1</sup> the Canadian Department of Natural Resources indicated that the intention of the Canadian government was to “design, licence, construct, and cold commission the equipment, materials and facilities necessary to . . . down-blend the contents of the Fissile Solution Storage

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<sup>1</sup><http://www.nrcan.gc.ca/evaluation/reports/2011/814>

Tank (FISST) to a Uranium-235 enrichment level – low enough to minimize criticality and safeguard constraints during storage and future processing.” As previously noted, down-blending is also one of the procedures intended to be used at the Savannah River Site following receipt of the liquid waste from Chalk River and extraction of the HEU from the highly radioactive liquid waste in the H-Canyon.

39. The DOE Defendants have revealed that the option to down-blend the waste on-site at Chalk River is viable and acceptable. The viability of this option has also been affirmed by the Canadian Department of Natural Resources, as noted earlier. Plaintiffs have long requested of DOE an analysis of such an on-site down-blending option, as a safer alternative to the present scheme involving import and transport of highly radioactive liquid waste. Such an analysis should be detailed and reviewed in an EIS.

40. The on-site down-blend option for the type of liquid waste currently stored in the FISST tank at Chalk River was revealed to be viable to the DOE as an acceptable alternative to import and transport of highly radioactive liquid waste in a Federal Register notice on February 22, 2016. In that notice, DOE stated that similar highly radioactive liquid waste in Indonesia, also a by-product of medical isotope production from the irradiation of U.S.-origin HEU, would be down-blended in place in Indonesia. Through down-blending, the enrichment of the waste in Indonesia will be reduced to 18% U-235 content, which will eliminate HEU from Indonesia.<sup>2</sup> After down-blending, low-enriched uranium (LEU) can be left in Indonesia for long-term management and disposal, with no need to import and transport the radioactive liquid waste. The

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<sup>2</sup>“Proposed Subsequent Arrangement,” DOE notice in Federal Register dated February 22, 2016, <https://www.federalregister.gov/articles/2016/02/22/2016-03572/proposed-subsequent-arrangement>

Federal Register notice states that “514 bottles of irradiated HEU targets in liquid form and 14 containers of un-irradiated liquid HEU” would undergo a “down-blend operation ... scheduled to last for approximately three months.” The Defendants DOE conclude that such down-blending “will not be inimical to the common defense and security of the United States of America.” Though the amount of liquid waste in Canada is larger than that in Indonesia, a similar down-blending process can be applied to the Canadian liquid material. Plaintiffs allege that implementation of this process in Canada, which would render the import and transport of highly radioactive liquid waste unnecessary, must be thoroughly analyzed by DOE Defendants in an EIS.

41. There has been little public discourse on this unprecedented transport plan. The reported \$60 million payment by the Canadian government to DOE will be used to keep the H-Canyon reprocessing plant at SRS operating for purposes of reprocessing. The H-Canyon is regarded as an income source for SRS and is the only remaining reprocessing plant in the U.S. Department of Energy nuclear complex. Maintaining H-Canyon reprocessing capability on financial life support is no reason to violate NEPA, and to take such unprecedented risks by transporting a highly radioactive liquid mixture of some of the most dangerous radionuclides known to be shipped on American highways, especially when viable alternatives exist that would forego those risks altogether.

42. Despite the unprecedented nature of the shipment scheme, the DOE has conducted no environmental impact statement (“EIS”) on the proposed HEUNL shipments. DOE asserts that its May 17, 1996 announcement of the Record of Decision (“ROD”) (61 FR 25092) for the “Final Environmental Impact Statement on a Nuclear Weapons Nonproliferation Policy

Concerning Foreign Research Reactor Spent Nuclear Fuel” (“FRR SNF IS”) (DOE 1996) represents DOE’s decision to accept and manage foreign research reactor spent nuclear fuel and irradiated “target” material, including the HEUNL liquid radioactive wastes. Neither the FRR SNF IS nor its ROD mention the transport or processing/reprocessing at SRS of liquid highly radioactive waste which DOE calls HEUNL. Nor did the 1996 EIS consider the implications of import and transport, and subsequent reprocessing of liquified waste laced with HEU and a multitude of dangerous isotopes. In fact, DOE has recognized the need to solidify liquid highly radioactive wastes in order to minimize the chance of dispersing deadly radioactivity into the air in the event of nearly any accident. FRR SNF IS p. 4-4.

43. *In lieu* of compiling an EIS on the proposed transport scheme, the DOE in 2013 and 2015 published two documents purporting to survey the need for NEPA compliance for the project. Called “Supplement Analyses,” the reports, according to 10 C.F.R. § 1021.104, were meant to be a “DOE document used to determine whether a supplemental [E]IS should be prepared pursuant to 40 CFR 1502.9( c).” Generally, DOE must prepare a supplemental EIS if there are “substantial changes to the proposal or significant new circumstances or information relevant to environmental concerns, as discussed in 40 CFR 1502.9(c)(1).” 10 C.F.R. § 1021.314(a).

44. A Supplement Analysis is an intra-agency inquiry into whether there should be a NEPA document written. A Supplement Analysis is thus not subjected to the rigors of an Environmental Impact Statement or an Environmental Assessment under NEPA. An IS involves formal initial announcement to the public of an agency’s intention of preparing it, followed by a formally-noticed public comment opportunity, and coupled with legal notifications to other

federal agencies by the lead agency, inviting scoping comments and suggestions at the Draft EIS stage. By contrast, Supplement Analyses are prepared solely for DOE's own internal use.

45. Plaintiffs requested in a letter sent February 27, 2013 to Defendant DOE that the agency prepare an Environmental Impact Statement on the proposed highly radioactive liquid waste transport, and also for a Programmatic EIS to document expanding efforts by the U.S. DOE to transport similar nuclear wastes in solid form from several foreign countries. A copy of the comment letter is annexed to this Complaint as Exhibit A and its contents are incorporated fully herein by reference. The letter was signed by multiple grassroots environmental and weapons watchdog groups, including three of the Plaintiff organizations and one individual member of a Plaintiff organization to this lawsuit.

46. The commenters in Exhibit A stated that the proposed shipments are unprecedented and the implications are of international significance and required a thorough EIS. The letter conveyed concerns about such matters as the failure to address regulation and packaging of shipments; the proliferation implications of transport, storage and processing of liquid HEU-bearing radioactive waste; the lack of meaningful analysis and discussion of less-risky alternative disposal options and alternatives in Canada, including down-blending and/or solidification of the waste prior to, or *in lieu* of, shipment; the possible chances and effects of accidents along transport routes, including leakage of the entire contents of a shipping container during transport; risks of terrorist acts and their possible resulting environmental, worker and public health threats; the chances of a dangerous, even deadly, inadvertent nuclear criticality event en route; details on storage of the waste at the Savannah River Site, including possible long-term storage of un-solidified liquid waste; accidents involving storage of containers or in handling containers at

SRS, including leakage of the total contents of a container at SRS; the potentiality of a criticality event at SRS; processing and reprocessing of the waste in the SRS H-Canyon and possible accidents; the possible need to upgrade the H-Canyon; the potential remediation of possible catastrophes in storage or processing; criticality risk during processing and transport; changed security requirements at SRS as a result of the project; routine radiation exposure, especially of gamma and neutron radiation along transport routes and at SRS to workers and the public; length of the processing campaign at SRS; the processing of recovered HEU, down-blending, fabrication into fuel and shipment to nuclear reactors for use as fuel; the effects of introducing new waste streams into the SRS tank waste system and other disposal systems; disposition of the waste from reprocessing in H-Canyon; the return of any portion of the waste to Canada, and the total cost to U.S. taxpayers of the program, including costs at SRS.

47. Exhibit A also noted DOE's anticipated receipt at SRS of a shipment of solid highly radioactive waste containing U.S.-origin HEU from a German experimental power reactor, in the form of HEU-embedded "pebbles," graphite spheres generated by a graphite matrix from a German Pebble Bed Modular Reactor ("PBMR"). The signing organizations stated that this novel waste material had not been addressed in earlier NEPA documents and that a Programmatic EIS ("PEIS") should be prepared in order to accommodate the apparent DOE policy change of repatriating, not just HEU waste, but waste containing very little HEU and dozens of other, far more radioactive, isotopes. Overall, the target and other HEU-bearing materials being considered for return to the U.S. are quite different from the waste characterizations in earlier NEPA documents.

48. The Department of Energy never directly responded to Exhibit A. Instead, in March

or April 2013, the agency published a “Supplement Analysis: Savannah River Site Spent Nuclear Fuel Management” (“2013 Supplement Analysis”) in which DOE summarily decided that there was nothing particularly significant about the unprecedented shipment of liquid highly radioactive waste:

HEU target residue material from Canada would be shipped and received as a liquid. The target material is currently stored at the Chalk River facility in Ontario, Canada. HEU solutions would be placed in small tanks which would be placed in a Nuclear Regulatory Commission (NRC) certified Type B cask. Use of the small tanks helps ensure safety, including eliminating the potential for criticality. Each cask would be placed in an International Standards Organization container and transported one per truck. DOE has conservatively estimated the number of shipments for purposes of analysis, to account for uncertainty regarding factors such as the actual loading of each tank and dilution rates. (Citation omitted). This would be the first shipment of target material under DOE/National Nuclear Security Administration's (NNSA) Global Threat Reduction Initiative for the purpose of eliminating material in civilian commerce that can be used in an improvised nuclear device as evaluated in the FRR IS.

The security, safety, and technical issues or concerns associated with transporting target material (liquid HEU) are similar to those for other forms of nuclear material.

“Supplement Analysis: Savannah River Site Spent Nuclear Fuel Management” (“2013 Supplement Analysis”), p. 8 (p. 9/36 of pdf). The 2013 Supplement Analysis is annexed to this Complaint as Exhibit B and is incorporated herein by reference.

49. The 2013 Supplement Analysis was adopted as formal policy in 2013. “Amended Record of Decision,” 78 Fed. Reg. 20625, 20627 (April 5, 2013), <https://www.federalregister.gov/articles/2013/04/05/2013-07994/spent-nuclear-fuel-management-at-the-savannah-river-site>. (Exhibit C hereto, which is herein incorporated by reference).

50. In the Appendix to the 2013 Supplement Analysis (Exhibit B), DOE stated its determination that no latent cancer fatalities (LCFs) would occur in workers or the public as a result of incident-free transportation, and that per-shipment incident-free impacts would be small and of the same order of magnitude as those estimated for the shipment types analyzed in the

1996 FRR SNF IS. The Department of Energy concluded that non-radiological accident risks (potential fatalities as a direct result of traffic accidents) presented the greatest risks related to transportation of the target residue material, but no traffic fatalities would be expected. The evaluation assumed a representative transportation route for purpose of analysis. According to the DOE, radiation doses from the most severe accident, a long-duration high-temperature fire, would not cause a latent cancer fatality. The overall impacts of transporting the target residue material were determined to be very small, and less than those described in the FRR SNF IS. 2013 Supplement Analysis pp. 8-9 (pp. 9-10/36 of .pdf).

51. DOE further confirmed that the HEUNL import and transport effort would be the first shipment of irradiated HEU target material under the DOE/National Nuclear Security Administration's (NNSA) Global Threat Reduction Initiative for the purpose of eliminating trafficking of material in civilian commerce that can be used in an improvised nuclear explosive device. 2013 Supplement Analysis p. 8 (Exh. B, p. 9/36 of .pdf). The Analysis noted that Argentina, Belgium, and Indonesia are three other holders of irradiated HEU-blended target materials from the U.S. *Id.*

52. DOE determined in the 2013 Supplement Analysis that there will not be any significant departures for the Chalk River liquid wastes from established techniques used for the processing and reprocessing of solid spent nuclear fuel in H-Canyon which would call for a new NEPA process:

. . . [T]he potential environmental impacts of processing up to approximately 3.3 MT [metric tons] of SNF and target material by conventional processing in H-Canyon at SRS and down-blending HEU to LEU for use in commercial nuclear reactors, represents neither substantial changes to the proposed action relevant to environmental concerns nor significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. This SA also finds that potential

environmental impacts associated with transportation of liquid HEU solutions to the SRS from Canada would not significantly differ from the impacts reported in the FRR IS and would be expected to result in no radiological or non-radiological fatalities. Therefore, pursuant to 10 CFR 1021.314( c ), I have determined that a supplemental or new IS is not required.

2013 Supplemental Analysis pp. 12-13 (Exh. B, p. 13-14/36 of .pdf). The 2013 Analysis was signature approved by David Huizenga, who signed it in his then-capacity as DOE's Senior Advisor for Environmental Management.

53. On July 16, 2014, U.S. Representative Brian Higgins, ranking member of the House Subcommittee on Counterterrorism and Intelligence, and the Subcommittee on Emergency Preparedness, whose 26<sup>th</sup> District includes New York's Niagara region, sent a letter to Defendant DOE Secretary Ernest Moniz. Rep. Higgins compared the radioactivity of the liquid waste from Chalk River to the radioactivity of spent nuclear fuel, and pointed out that "its liquid form could make containment in the event of a spill or other adverse event nearly impossible." Rep. Higgins requested that DOE "undertake a formal environmental impact statement before proceeding." Rep. Higgins' letter is annexed hereto as Exhibit D and is incorporated herein by reference.

54. On July 25, 2014, Eric Schneiderman, Attorney General of the State of New York, also wrote to Defendant Secretary Moniz. Schneiderman warned of the dangers of radionuclides contained in the liquid highly radioactive waste in the event of a spill, and noted that the DOE's justifications for not conducting an EIS on the HEUNL shipping plan all were based on prior NEPA studies of solid, not liquid waste. Schneiderman pointed out that "liquids and solids are fundamentally different states of matter" and that "the potential release and spread of highly radioactive liquid materials during these shipments presents the potential for environmental harms that are materially distinct from those posed by solid radioactive material." The letter is

annexed to this Complaint as Exhibit E and is incorporated herein by reference.

55. On December 2, 2015, the DOE published a second “Supplement Analysis for the Foreign Research Reactor Spent Nuclear Fuel Acceptance Program: Highly Enriched Uranium Target Residue Material Transportation” (“2015 Supplement Analysis”). The 2015 Supplement Analysis is annexed to this Complaint as Exhibit F and is incorporated herein by reference. In it, the DOE restated its conclusion that “Because the quantities of radioactive material in the target materials are much less than in SNF or highly radioactive waste, DOE concluded that the estimated impacts of an intentional destructive act on the proposed shipments of target materials would not exceed the potential impacts associated with the results reviewed for SNF and high-level waste.” 2015 Supplement Analysis p. 11 (Exh. F, p. 12/23 of .pdf). This conclusion disregards the obvious difference between the dissemination of radioactive materials in liquid form compared with those same radioactive materials in solid form.

56. The DOE also affirmed its previous conclusion from the 2013 Supplement Analysis regarding minimal environmental effects from the proposed transport:

This SA supports DOE’s determination in the SRS SNF SA (DOE 2013) that the potential environmental impacts associated with transport of target residue material in the form of HEU solutions from Canada to SRS would be very low and not significantly different from the impacts reported in the FRR SNF IS (DOE 1996a). Nothing was identified in this SA that would indicate a need to re-assess DOE’s conclusions in the SRS SNF(a mere 0.063 ounces)

SA (DOE 2013) that once the HEU solutions were received on site, the potential risks associated with onsite storage, conventional processing in H-Canyon, and HEU down-blending would not significantly differ from those reported in previous NEPA reviews.

2015 Supplement Analysis p. 19 (Exh. F, p. 20/23 of .pdf).

57. The overall conclusion of the 2015 Supplement Analysis, which was signed by Monica C. Regalbuto, DOE’s Assistant Secretary for Environmental Management, located in

Washington, D.C., was:

This SA reaffirms that the potential environmental impacts associated with transport of target residue material in the form of HEU solutions from Canada to SRS would be very low and not significantly different from the impacts reported in the *FRR SNF EIS* (DOE 1996a). There would be no expected radiological or non-radiological fatalities. Therefore, pursuant to 10 CFR 1021.314( c), I have determined that a supplemental or new EIS is not required.

2015 Supplement Analysis p. 20 (Exh. F, p. 21/23 of .pdf).

58. The Department of Energy has not published the conclusions of the 2015 Supplement Analysis in the Federal Register. DOE has not published an Amended Record of Decision since 2013.

59. Through the date of filing of this lawsuit, no Environmental Impact Statement has been prepared relative to the proposed HEUNL shipments.

60. Down to the date of the filing of this lawsuit, no Programmatic Environmental Impact Statement has been prepared regarding the DOE aims of repatriating HEU wastes, liquid or solid.

## ***V. CAUSES OF ACTION***

### ***A. First Cause of Action: Failure to Compile Environmental Assessment of HEUNL Waste Transport Plan***

61. Plaintiffs incorporate by reference and re-allege as though written herein the contents of the above paragraphs 1 through 60.

62. The DOE Defendants have unlawfully omitted and failed to compile an Environmental Assessment (“EA”) on the so-called HEUNL liquid highly radioactive waste transport project.

63. The National Environmental Policy Act (“NEPA”) establishes a national policy to “prevent or eliminate damage to the environment and biosphere.” 42 U.S.C. § 4321. The Act

recognizes “the critical importance of restoring and maintaining environmental quality,” “declares that the federal government has a continuing responsibility to use ‘all practicable means’ to minimize environmental degradation,” and directs that “to the fullest extent possible . . . the policies, regulations and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act.” 42 U.S.C. § 4331( c).

64. Federal agencies receive guidance in their preparation of a detailed “Environmental Impact Statement” (“EIS”) from the Council of Environmental Quality (“CEQ”). Established by NEPA with the authority to issue regulations interpreting that statute, the CEQ has promulgated regulations determining what actions are subject to that statutory requirement. *See* 40 C.F.R. § 1500.3. According to these regulations, the federal agency may instead prepare a more limited document, called an Environmental Assessment (“EA”), if the proposed action is categorically excluded from the requirement to produce an EIS or does not clearly require the production of an EIS. 40 C.F.R. §§ 1501.4(a), (b)). An EA, as compared to an EIS, should be a “concise public document . . . that serves to . . . [b]riefly provide sufficient evidence and analysis for determining whether to prepare an [EIS].” 40 C.F.R. § 1508.9(a). “If, pursuant to the EA, an agency determines that an EIS is not required under applicable CEQ regulations, it must issue a ‘finding of no significant impact’ (FONSI), which briefly presents the reasons why the proposed agency action will not have a significant impact on the human environment.” 40 C.F.R. §§ 1501.4(e), 1508.13.

65. The federal Council on Environmental Quality (“CEQ”) regulations implementing the provisions of NEPA are binding upon all federal agencies, including the Department of Energy. At 10 C.F.R. §1021.103, “DOE adopts the regulations for implementing NEPA published by CEQ

at 40 CFR parts 1500 through 1508.” Moreover, “It is DOE's policy to follow the letter and spirit of NEPA; comply fully with the CEQ Regulations; and apply the NEPA review process early in the planning stages for DOE proposals.” 10 C.F.R. §1021.101.

66. By compiling two Supplement Analyses and not preparing an Environmental Assessment, the DOE has circumvented NEPA regulations and deprived the public as well as other federal agencies of the procedural regularity imposed by CEQ guidelines for Environmental Assessments. Unlike the Supplement Analyses, an EA must be circulated for review and comment from other federal agencies and the general public, contains formal identification, analysis and discussion of alternatives to the proposed action, is concluded by a formal decision to prepare an EIS or a proposed Finding of No Significant Impact (“FONSI”) for public and other-agency review and comment; generates obligatory agency responses to public and other-agency comments; and results in, and is part of, an identifiable, final agency action which may be judicially reviewed.

67. The DOE Defendants used the Supplement Analyses to determine there would be no significant environmental impacts from the proposed project. By using SA's, The DOE Defendants circumvented the public notification and comment opportunity required when an EA is performed, as well as the duty to provide a discussion of alternatives to the proposed project, which would have implicated leaving the radioactive waste in Canada, or down-blending and solidification prior to shipping. Because the DOE document was a Supplement Analysis, the DOE Defendants had no obligation to formally solicit nor to respond to public comments.

68. The failure or omission of the DOE Defendants to prepare an Environmental Assessment, and instead to use the Supplement Analysis procedure to take the place of an EA, has

caused a significant procedural injury to Plaintiffs. It is subjecting Plaintiffs and the public to irreparable harm, and violates or fails to comply with NEPA.

**B. Second Cause of Action: Failure to Compile Environmental Impact Statement of HEUNL Waste Transport Plan**

69. Plaintiffs incorporate by reference and re-allege as though written herein the contents of the above paragraphs 1 through 68.

70. At 42 U.S.C. § 4322(2), NEPA requires “responsible [federal] officials” to prepare an environmental impact statement (“EIS”) on proposals for “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(c). That EIS must contain a detailed discussion of environmental impacts (40 C.F.R. § 1502.16) and of alternatives (40 C.F.R. § 1502.14). Under NEPA, an agency must prepare an EIS when an action may have significant environmental effects. 40 C.F.R. § 1508.3.

72. A “major federal action” under NEPA is defined at 40 C.F.R. § 1508.18 to include “actions with effects that may be major and which are potentially subject to Federal control and responsibility.” “Major” is used interchangeably in the NEPA regulations with “significantly.” “Significantly” involves “intensity,” which at 40 C.F.R. § 1508.27(b) “refers to the severity of impact.” “Intensity” requires recognition that environmental impacts may exist even where the federal agency believes that on balance the effects will be beneficial; that the proposed action may affect public health or safety; that there may be unique characteristics of the project such as proximity to historic or cultural resources, park lands, wetlands, or ecologically critical areas; that the effects on the quality of the human environment may be highly controversial; that there may be cumulatively significant impacts which cannot be avoided by breaking the project down into small component parts; that the project may cause loss or destruction of significant scientific,

cultural, or historical resources; that the action may adversely affect an endangered or threatened species or its habitat; or that the proposed action may threaten violations of Federal or State laws or requirements imposed for the protection of the environment.

73. NEPA regulations require that: (1) alternatives be presented in comparative form to provide bases for choice by decision makers and the public (40 C.F.R. § 1502.14); (2) that “substantial treatment” be devoted to each alternative considered in detail to enable reviewers to evaluate the comparative merits of each alternative (40 C.F.R. § 1502.14(b)); and (3) that during the course of the NEPA process no actions go forward that have adverse environmental impacts or that would limit the choice of reasonable alternatives (40 C.F.R. § 1506.1).

74. A Draft Environmental Impact Statement is required to be circulated to agencies for comment, and agencies with special expertise or statutory responsibility along with the lead agency are obligated to comment and to be consulted by the lead federal agency. 40 C.F.R. §§ 1501.7(a)(6), 1502.19, 1503.1, 1503.2, 1503.3, 1503.4, 1506.6(f), 1502.25. The public also must be officially offered an opportunity to comment. 40 C.F.R. §§ 1503.1(a)(4), 1506.6. The DOE is required to have a public review and comment period on a draft EIS at least 45 days in length. 10 C.F.R. § 1021.313(a), DOE must hold at least one public hearing on draft EISs. 10 C.F.R. § 1021.313(b). The final EIS must respond to oral and written comments received during public review of the draft EIS. 10 C.F.R. § 1021.313(c).

75. Plaintiffs state that the discussion contained in the 2013 and 2015 Supplement Analyses of the HEUNL liquid waste import and transport project and the program to return irradiated HEU products from other countries has deprived them of an adequate opportunity for public scrutiny, analysis and disclosure of the true nature of and alternatives to the proposed

project as obligated by the National Environmental Policy Act, and that consequently the project cannot lawfully be allowed to proceed.

76. Following is a nonexclusive list of deficiencies which Plaintiffs assert must be corrected, analyzed in detail and covered in an environmental impact statement and/or programmatic IS, subjected to interagency consultation and comment, and to formal public comment:

! *Possible lack of viability of federal regulations for transporting and importing liquid highly radioactive waste.* In the event of an accident resulting in fire and heat, the consequences may differ significantly if the cargo is highly radioactive liquid waste, as opposed to solid radioactive waste material. Evaporation of water in an accident where there is elevated heat may concentrate the radioactive material and increase the chances of nuclear criticality.

! *Undisclosed shipment route scenarios, unexamined risks and mitigation steps.* The anticipated routes for the 150 shipments will traverse many water courses and elevated highways will cross valleys at a height which exceeds the safety standards for a dropped cask onto an unyielding hard surface.

! *Insufficient examination of accident scenarios.* The Supplement Analyses trivialized the chances of accident and did not address the distinct new information, *i.e.* the shipments of *liquid* radioactive waste. Under adverse weather circumstances, a serious radiological accident, different in sequence and hazards, may be possible or probable if the cargo is liquid highly radioactive waste instead of solid material. With no precedential highly radioactive liquid shipments to point to, the DOE relies on U.S. Nuclear Regulatory Commission packaging restrictions, which were conceived in contemplation of solid waste hauling. There is no evaluation of the implications

from partial or total release of contents from a transport container carrying liquid waste if a perforation causes breach or leakage.

! *Failure to evaluate alternatives, such as solidification prior to shipment, down-blending to eliminate HEU content, long-term storage on-site at Chalk River, or permanent disposal in Canada.* The agreed change between the two governments of the disposition plans more than a decade after the shipment of solid unirradiated HEU to Canada, itself, comprises a significant change which merits a supplemental EIS. There is a serious question whether the decision to return the liquid highly radioactive waste to the U.S. is prompted by the economics of keeping DOE's aging "H" nuclear processing canyon at SRS open for business by insisting upon return of HEU-bearing radioactive wastes from countries which pose no proliferation concerns.

! *Potentially inadequate design of current casks for use.* The licensing procedure at the U.S. NRC for highly radioactive waste shipments merely relies on the capabilities of existing casks, which were not designed in contemplation of carrying liquid highly radioactive waste contents. In late 2015, there occurred a caddy failure at Chalk River due to poor quality welding on the NAC caddy used to transfer solid irradiated fuel rods from a spent fuel bay to a waiting NAC-LWT cask – the same type of cask to be used in the proposed shipments of highly radioactive liquid waste from FISST to SRS. The bottom of the fully-loaded caddy unexpectedly fell open, dropping irradiated nuclear fuel rods to the bottom of the spent fuel bay. That there are quality assurance concerns with NAC equipment when used for solid highly radioactive fuel rods heightens Plaintiffs' concerns when equipment from the same company is to be used to load and deliver highly radioactive liquid waste to SRS.

! *Lack of analysis of terrorist acts and their impacts.* No serious discussion of terrorist

threats to transporting the liquid highly radioactive waste appears in the DOE's Supplement Analyses. The DOE relied on the transport risk assessment from the 2002 IS for the proposed Yucca Mountain high-level radioactive waste repository:

The quantity of HEU in solution transported would be less than that considered in the *Yucca Mountain IS* analysis. Therefore, estimates of risk in the *Yucca Mountain IS* envelop the risks from an act of sabotage or terrorism involving HEU solution.

2013 Supplement Analysis p. A-10 (p. 30/36 of .pdf). In other words, Defendant DOE claims that the risk assessment in the Yucca Mountain EIS portends greater harms than would be expected from the unanalyzed potential risks of the unprecedented policy of hauling *liquid*, as opposed to solid, highly radioactive wastes thousands of road miles. This is an anomalous conclusion; the liquid nature of the Chalk River waste raises ominous prospects of radioactively "dirtier" accident scenarios.

! *Incomplete analysis of holding provisions at SRS.* The adequacy of provisions for storage of the highly radioactive HEU-bearing liquid waste until there is sufficient delivery to economically justify its reprocessing and down-blending at H-Canyon requires examination. There is also the possibility of expensive and unanticipated long-term storage of unprocessed liquid waste if the predicted economic costs of the reprocessing and down-blending plan subsequently prove to be grossly underestimated, and the economies of scale grossly overestimated.

! *Lack of historical understanding of storage problems at SRS.* Lack of investigation and analysis of accidents involving storage or handling of containers holding the HEU-bearing waste at the Savannah River Site, including loss of the contents of a storage container at SRS in scenarios of slow and undetected leakage as well as more rapid, visible leakage.

! *Insufficient details of H-Canyon processing of HEUNL liquid waste.* The Supplement Analysis does not detail the expected processing of the waste in the H-Canyon, nor does it assess possible accidents. There has not been disclosure of the adequacy of present conditions at H-Canyon nor discussion of necessary upgrades that may be required as a prerequisite to processing the HEU-bearing liquid waste from Chalk River.

! *No analysis of accidents and rededication at SRS.* There is neither disclosure of accident scenarios, nor analysis of steps that would be required to restore the H-Canyon or other facilities to usefulness in the event of serious contamination incidents during storage or processing at SRS.

! *Inadequate analysis of transport worker exposure and public exposure risks from radiation during movement.* There is insufficient analysis of risks of radiation exposure from the transport of the casks to drivers of the transport vehicle, workers likely to be nearby, and members of the public. There has been no thorough characterization of the penetrating radiation which could be expected to emanate routinely from the shipping casks, nor any measurement of the potential gamma and neutron radiation exposure during and following a criticality event from the transport device. DOE assumed fairly close proximity of workers or members of the public to the transport device, but then without scientific analysis, dismissed the chances of any serious radioactive dose to them, as by an unnoticed breach or accidentally opened lid to the transport device. 2013 Supplement Analysis p. A-9 (pp. 28-29/36 of .pdf).

! *No analysis of new waste streams at SRS.* There is no investigation nor analysis of the effects of introducing new waste streams into the SRS tank waste system and other disposal systems.

! *No investigation of impacts of end-use of HEU as reactor fuel.* Since part of the liquid

highly-enriched uranium (HEU) is to be down-blended into low-enriched uranium (LEU) for reactor fuel, no inquiry has been undertaken of the effects of fabricating, transporting and using that new fuel source in commercial nuclear power reactors, where it is slated to go.

! *Unidentified or undisclosed costs.* There has not been any overall economic audit undertaken to determine the total cost to U.S. taxpayers of the program as a whole, nor liability arrangements in the event of accident or injury to the environment, workers or the general public.

77. By compiling two Supplement Analyses and not preparing an Environmental Impact Statement, the DOE Defendants have circumvented NEPA regulations and deprived the public as well as other federal agencies of the procedural regularity imposed by CEQ guidelines for Environmental Impact Statements. Unlike the Supplement Analyses, a draft and final EIS must be subjected to scoping opportunities; must be circulated for review and comment from other federal agencies and the general public; must contain formal identification, analysis and discussion of alternatives to the proposed action; generates obligatory agency responses to public and other-agency comments; and results in, and is part of, an identifiable, final agency action which may be judicially reviewed. In the DOE Defendants' Supplement Analyses, the agency found that there would be no significant environmental impacts from the proposed project and provided no meaningful discussion of the potential risks from accident, terrorism, sabotage and the associated possible breach of the transport container. By using SA's, the DOE Defendants avoided the public notification and comment opportunity required when a draft EIS is performed and did not have to identify or discuss alternatives to the proposed project, which would have implicated leaving the radioactive waste in Canada, or down-blending and solidification prior to shipping. Using an SA, the DOE Defendants had no obligation to formally solicit nor to respond to public

comments and accordingly, they did not.

78. The failure or omission of the DOE to prepare a draft or final EIS, and instead to use the Supplement Analysis procedure to take the place of an EIS, has caused a significant procedural injury to Plaintiffs, violates or fails to comply with NEPA, and is subjecting Plaintiffs and the public to continued irreparable harm.

**C. Third Cause of Action: Failure To Compile A Programmatic Environmental Impact Statement To Cover Repatriated Waste HEU Target Materials**

79. Plaintiffs incorporate by reference and re-allege as though written herein the contents of the above paragraphs 1 through 78.

80. DOE has initiated a program of negotiating the return of waste HEU target material that appears to be piecemeal and *ad hoc*. Solidified HEU waste is being accepted from Germany. Arrangements for storage of down-blended and solidified waste in place have been established by the DOE with Indonesia. Indonesia has a relatively recent history of authoritarian government and popular insurgency, and currently experiences piracy and terrorist threats. While Germany faces terrorist threats, it is difficult to argue that those threats surpass the possibilities in Indonesia.

81. Present decision making about whether or not the radioactive wastes resulting from export of HEU targets are returned to the U.S. is occurring without central guiding principles and with inconsistent criteria for returning the wastes. Plaintiffs state that a “Programmatic Environmental Impact Statement” (“PEIS”) must be compiled before any further repatriation or leave-in-place agreements are made.

82. A PEIS facilitates the production of subsequent project-level EISs or Environmental Assessments through the process of “tiering.” 40 C.F.R §1502.20. “Tiering” refers to the assessment of general matters in broader programmatic environmental impact statements (PEISs)

with subsequent narrower analyses (such as regional program statements or ultimately site-specific EISs), that reference the general assessment while concentrating on the issues specific to the individual contemplated action.

83. DOE must prepare a programmatic EIS or Environmental Assessment when required to support a DOE programmatic decision. 10 C.F.R. § 1021.330(a). PEIS documents should be used to address “a group of concerted actions to implement a specific policy or plan” or “systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive.” 40 C.F.R. § 1508.18(b)(3). DOE regulations require a PEIS to be prepared, issued, and circulated in accordance with the requirements for any other NEPA document. 10 C.F.R. § 1021.330(b).

84. DOE has failed and omitted to compile a Programmatic Environmental Impact Statement or Environmental Assessment and in so doing, has deprived Plaintiffs and the public as well as other federal agencies of the procedural regularity imposed by CEQ guidelines for Environmental Impact Statements. Unlike the Supplement Analyses, a draft and final programmatic EIS, or a programmatic EA, must be scoped using public and agency comments; must be circulated for review and comment from other federal agencies and the general public; must contain formal identification, analysis and discussion of alternatives to the proposed action; must be accompanied by DOE’s official responses to public and other-agency comments; and results in, and is part of, an identifiable, final agency action which may be judicially reviewed. Compilation of a Programmatic Environmental Impact Statement would prompt a programmatic approach to the repatriation of dangerous radioactive waste materials which would address public health and environmental risks and their mitigation in a systematic way.

85. The failure or omission of the DOE to prepare a draft and final programmatic EIS, or a programmatic EA, and instead to use the Supplement Analysis procedure to take the place of strict NEPA compliance, has caused a significant procedural injury to Plaintiffs, violates or fails to comply with NEPA, and is subjecting Plaintiffs and the public to continued irreparable harm.

**D. Fourth Cause of Action: Violations of Atomic Energy Act  
and Department of Energy Organization Act of 1977**

86. Plaintiffs incorporate by reference and re-allege as though written herein the contents of the above paragraphs 1 through 85.

87. The highly radioactive liquid waste from Chalk River is source, byproduct and/or special nuclear material as defined by 42 U.S.C. § 2014 that was generated, directly or indirectly, by the U.S. Department of Energy. As such, the waste is governed by the Atomic Energy Act, 42 U.S.C. § 2011 *et seq.* and the Department of Energy Organization Act of 1977, 42 U.S.C. § 7112. The DOE is obliged “[t]o assure incorporation of national environmental protection goals in the formulation and implementation of energy programs, and to advance the goals of restoring, protecting, and enhancing environmental quality, and assuring public health and safety.”

88. By failing to comply with NEPA as alleged above, the DOE Defendants have violated the Atomic Energy Act and the Department of Energy Organization Act in that they have not properly or fully addressed national environmental protection goals within the proposed project and have not fulfilled the statutory prerequisites of assuring public health and safety.

**D. Fifth Cause of Action: Administrative Procedure Act Violated**

89. Plaintiffs incorporate by reference and re-allege as though written herein the contents of the above paragraphs 1 through 88.

90. The acts and/or omissions of which Plaintiffs complain comprise failures by the DOE

Defendants to comply with NEPA. Plaintiffs have suffered legal and procedural harm and damage because of agency actions taken in contravention of law. Plaintiffs are adversely affected and aggrieved by agency action within the meaning of the Administrative Procedure Act (“APA”), 5 U.S.C. § 702.

91. Plaintiffs state that the acts and/or omissions of one, some or all of the DOE Defendants, separately or in combination, to cause the approval of the proposed HEUNL liquid highly radioactive waste import and transport scheme were and are arbitrary and capricious and an abuse of discretion and not in accordance with law.

92. Plaintiffs state that the acts and/or omissions of one, some or all of the DOE Defendants, separately or in combination, to cause the approval of the proposed Chalk River liquid highly radioactive waste import and transport scheme as a component of a program to repatriate radioactive waste products produced by DOE were and are arbitrary and capricious and an abuse of discretion and not in accordance with law, in excess of statutory jurisdiction and made in derogation of legal procedure.

93. The Court should enforce Plaintiffs’ procedural rights under the Administrative Procedure Act, specifically, 5 U.S.C. §§ 701-706.

***PRAYER FOR RELIEF***

**WHEREFORE**, Plaintiffs respectfully pray this Court grant them the following as and for their relief:

1) To find and declare the DOE Defendants’ actions in authorizing the proposed DOE import and transport of highly radioactive liquid waste which DOE has designated as HEUNL to be violations of NEPA, the Atomic Energy Act and the Department of Energy Organization Act,

and to grant a temporary restraining order, preliminary and permanent injunctions against the implementation of the import and transport of that waste from Chalk River to SRS until an Environmental Impact Statement has been compiled and there has been full compliance with those statutes;

2) To find and declare the DOE Defendants' actions in authorizing the repatriation of liquid highly radioactive wastes from other countries to SRS absent a Programmatic Environmental Impact Statement to comprise violations of NEPA, the Atomic Energy Act and the Department of Energy Organization Act, and to grant temporary restraining orders, preliminary and permanent injunctions against such actions until a Programmatic Environmental Impact Statement has been compiled and compliance with NEPA has been achieved;

3) To award Plaintiffs their costs of this action, including statutory attorney fees; and

4) To grant such other and further relief as the Court deems just and proper in the premises.

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