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RE: Comments for the Record on U.S. Department of Energy the Draft Environmental Assessment for Use of DOE-Owned High Assay Low-Enriched Uranium Stored at INL [1]

In Environmental Defense Institute's (EDI) view, the Draft Environmental Assessment (EA) fails to provide the public a credible analysis of potential environmental impacts for the use of DOE-owned high assay low-enriched uranium (HALEU) currently stored at Idaho National Laboratory (INL). This literally thumbs DOE's collective nose at the National Environmental Policy Act that this EA is theoretically intended to serve. The proposed use of this HALEU would involve fabrication of advanced reactor fuel from used spent nuclear fuel (SNF) in support of nuclear energy.

DOE fails to document how much sodium-bearing SNF at INL is going to be reprocessed, how much high-level waste (HLW) as defined by the Nuclear Waste Policy Act (NWPA) will be produced and how this HLW will be disposed as required by the NWPA. DOE's authority to reclassify HLW produced from reprocessing SNF is not a settled legal question. Judge B.Lynn Winmill, Chief Judge U.S. District Court for Idaho, July 2, 2003 states:

> "While DOE has the authority to 'fill any gap left…by Congress,'…it does not have the authority 'to adopt a policy that directly conflicts with its governing statute.'… DOE's Order 435.1 directly conflicts with the NWPA's definition of HLW. NWPA's definition pays no heed to techical or economic constraints in waste treatment. Moreover, NWPA does not delegate to DOE the authority to estblish 'alternative requirements for solid waste.' Because Congress has spoken to that subject "that is the end of this matter,' leaving no room for 'alternative requirements'" [2] [Pg. 12]

The Materials Fuels Complex (MFC) formerly Argonne National Laboratory-West at INL holds significant inventories or high-level waste (HLW) both in the form of spent nuclear fuel (SNF), special nuclear material (plutonium), HLW from sodium [3] cooled reactor fuel handling and waste from various nuclear fuel experiments and SNF reprocessing operations

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[1] Pursuant to 10 CFR 1021.321, the U.S. Department of Energy (DOE) has prepared the Draft Environmental Assessment for the Use of DOE-Owned High Assay Low-Enriched Uranium Stored at INL, 10/31/18, DOE-EA-2087. Hereinafter called DOE-EA-2087.

[2] B.Lynn Winmill, Chief Judge U.S. District Court for Idaho, July 2, 2003, Memorandum Decision in NRDC v. DOE, Civ. No. 01-0413-S-BLM, pg. 12.

[3] Sodium is highly reactive when exposed to air or water.

(pyroprocessing/ electroprocessing). All of these HLW waste materials [4] are covered by Nuclear Waste Policy Act, DOE's Order 435.1 and the P.L. Section 3116 rules. The Nuclear Waste Technical Review Board report on SNF notes the safety issues with MFC inventory of sodium-bearing SNF:

> **"Sodium-bonded SNF from the Experimental Breeder Reactor 2.**
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> "Sodium-bonded driver fuel element from INL's Experimental Breeder Reactor 2. Corroded SNF elements from a sealed metallic canister, initially air-filled, that leaked while in a water storage basin. After leakage of water into the container, corrosion of the stainless steel cladding in some elements ruptured the cladding. The metallic fuel reacted with water to produce hydrogen gas and uranium corrosion products, and also released radionuclides into the water in the container. Moisture in dry storage containers penetrated small holes—pinhole-sized—in stainless steel cladding surrounding the spent nuclear fuel from a reactor that used sodium for heat transfer (cooling) and reacted vigorously with metallic sodium inside the cladding, creating hydrogen and sodium hydroxide, which split the cladding. Hydrogen evolved and accumulated in the storage canisters due to reaction of water with sodium." [5] [pg.21]
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> **"Sodium SNF**
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> "Not all DOE SNF that is currently stored will be disposed of without processing. As described in Section 5.2.2.4, DOE is using an electrometallurgical treatment at INL to process approximately 22 MTHM of sodium-bonded SNF [foot note 31] that is currently unsuitable for disposal. This process uses an electrorefiner with a molten salt electrolyte to dissolve the fuel. The process separates the cladding from the fuel, which results in the sodium and fission products accumulating in the molten salt. The cladding, along with some added metals, is then converted into a metallic HLW form in a furnace. Once the molten salt reaches its capacity to accumulate radionuclides, the salt and accumulated radionuclides in the salt will be converted into a ceramic **HLW form**. DOE believes these waste forms [6] are acceptable for repository disposal, but this has not yet been confirmed as part of a repository licensing process." [7] [pg. 26]
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> "**DOE-NE treats sodium-bonded driver SNF by dissolving it in a molten salt medium. This process creates two waste streams (metallic and salt) that are both considered HLW**. Because DOE-NE is not a "waste custodian" and, hence, is not subject to the waste acceptance system requirements that apply to all SNF and HLW that will be disposed in a repository, the fate of these waste streams is uncertain." [8] [pg. 106]
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> "Approximately 0.25 MTHM of the fuel used in the Fast Flux Test Facility is known as sodium-bonded SNF because it has a small amount of sodium inside the cladding . The remainder of the Fast Flux Test Facility SNF is non-sodium-bonded. In 2008, Hanford shipped the sodium-bonded SNF to INL for processing. Sodium is highly reactive when exposed to air or water. [9] [pg.67] [emphasis added]
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> "DOE plans to continue treatment of the driver SNF at the Fuel Conditioning Facility that is located at the Materials and Fuels Complex, and evaluate possible interim dry storage of this SNF (Lacroix 2014a, 2014b). In developing its plans, DOE is considering whether the driver fuel is suitable for treatment. For fuel that may not be suitable for treatment, "that will have to be further investigated" (Lacroix 2014b). Other considerations include shipping schedules, processing rates at the Fuel Conditioning Facility, funding, and receipt and storage capabilities indicates that non-EBR-II sodium-bonded SNF stored at the

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[4] U.S. Nuclear Waste Technical Review Board, Management of U.S. Department of Energy Spent Nuclear Fuel, Report to the United States Congress and the Secretary of Energy, December 2017, Pg. 10. Hereinafter called NWTRB SNF Report. "High-level radioactive waste is the highly radioactive material that results from SNF reprocessing. Historically, reprocessing also separated the fissile material for reuse. All defense-related domestic HLW is owned and managed by DOE. Some of the liquid HLW from reprocessing has been converted to solid form, *e.g.*, by vitrification and calcination, but most HLW created from reprocessing is in tanks in the form of liquid, salt cake, or sludge. The solid waste forms created from the tank wastes is also HLW. Treatment to convert the HLW into a solid form is necessary to meet transportation and disposal requirements."

[5] NWTRB SNF Report, Pg. 21.

[6] NWTRB SNF Report, Pg. 181. Waste form: Radioactive waste materials and any encapsulating or stabilizing matrix.

[7] NWTRB SNF Report, pg. 26.

[8] NWTRB SNF Report, pg. 106

[9] NWTRB SNF Report, pg. 67

Radioactive Scrap and Waste Facility includes sodium debris bed material [foot note 139] from Sandia National Laboratories." [10]

"5.2.2.4 Treatment and Management of Sodium-bonded Spent Nuclear Fuel

"In 2000, DOE issued a final EIS and record of decision to manage and treat sodium-bonded SNF, which addressed the issue that 'sodium could complicate compliance with the eventual final repository waste acceptance criteria'. DOE currently manages about 55.7 MTHM of sodium-bonded SNF and considers and treats the SNF as hazardous waste. Approximately 34.2 MTHM of this inventory consists of blanket fuel from the Fermi-1 reactor; another 19.2 MTHM, approximately, is blanket fuel from the EBR-II reactor. The remaining roughly 2.3 MTHM is driver fuel from the EBR-II reactor (Box 2-2 describes driver and blanket fuel). In addition, DOE manages a small quantity of sodium-bonded material (approximately 50 kilograms) from experiments at the Hanford Site and Sandia National Laboratories. [11] [pg.94]][Emphasis added]

"DOE is in the process of retrieving the EBR-II fuel and transferring it in 227 shipments to the Materials and Fuels Complex. The remaining shipments of EBR-II SNF to the Materials and Fuels Complex are scheduled to be completed by fiscal year 2022. This will allow DOE to meet the December 31, 2023, deadline—established as part of the 1995 Settlement Agreement—for removing all SNF at INL from wet storage." [12]

SNF using electrometallurgical treatment or to use another treatment method and/or disposal technique." As of 2010, about 85% of the EBR-II fuel remained untreated, and DOE had not made any decision concerning the treatment of Fermi-1 blanket SNF. Since 1996, DOE has treated approximately 4.5 MTHM of sodium-bonded SNF—less than 10% of **the 55.7 MTHM awaiting treatment at INL**. [13] [pg. 95] [emphasis added]

"***5.3.2.1.5 Continue Treating Sodium-bonded Spent Nuclear Fuel***

"DOE continues to treat sodium-bonded SNF in the Fuel Conditioning Facility at the Materials and Fuels Complex. In fiscal year 2013, DOE treated approximately 170 kilograms (DOE 2013e). DOE planned to treat 76 kilograms in fiscal year 2014 (DOE 2013e) and to continue treatments[159] into the future." [14] [15]

"***Why does sodium-bonded SNF require special consideration and treatment?***

"Metallic sodium reacts with water to produce explosive hydrogen gas and corrosive sodium hydroxide that would likely not be acceptable for geologic disposal" (DOE 2000a). Elemental sodium is considered a hazardous waste and is regulated under the Resource Conservation and Recovery Act (RCRA) of 1976. Sodium-bonded SNF is not listed under RCRA as a hazardous waste, but it could be considered characteristically hazardous under RCRA because of its chemical reactivity.[16] [emphasis added]

"To overcome the waste acceptance obstacle, DOE opted for electrometallurgical treatment for EBR-II driver fuel and small quantities of other miscellaneous sodium-bonded SNF at INL. The treatment uses an electrorefiner with a molten salt electrolyte to dissolve the chopped fuel. This chemical treatment process separates the cladding from the fuel and results in the sodium and fission products accumulating in the molten salt, creating two waste streams that are considered HLW. First, the cladding, along with some added metals, is converted into a metallic HLW form in a furnace. Second, once the molten salt reaches its capacity to accumulate radionuclides, the salt and accumulated radionuclides in the salt will be converted into a ceramic HLW form. After the electrometallurgical treatment of the sodium-bonded SNF, the HLW

[10] NWTRB SNF Report, pg. 88. Foot note 139 states: "[139] This material was formed in experiments that used crucibles containing high-enriched uranium dioxide (93% U-235) that were immersed in sodium."

[11] NWTRB SNF Report, pg. 94.

[12] NWTRB SNF Report, pg. 95

[13] NWTRB SNF Report, pg. 95

[14] NWTRB SNF Report, pg. 99.

[15] DOE 2013e. Department of Energy FY 2014 Congressional Budget Request Energy Efficiency and Renewable Energy, Electricity Delivery and Energy Reliability, Nuclear Energy, Race to the Top for Energy Efficiency and Grid Modernization, Fossil Energy Research and Development, Naval Petroleum and Oil Shale Reserves, Strategic Petroleum Reserve, Northeast Home Heating Oil Reserve, Ultra-Deepwater Unconventional Natural Gas, Elk Hills Lands Fund, Advanced Tech. Vehicle Manufacturing Loan Program, Title 17 Innovative Tech. Loan Guarantee Program, Energy Information Administration. DOE/CF-0086, Vol. 3. April.

[16] NWTRB SNF Report, pg. 21

> metallic and ceramic forms created will be stored at the Radioactive Scrap and Waste Facility to await geologic disposal (Hill and Fillmore 2005). Alternatively, the salt waste could be stored and disposed of in a repository other than Yucca Mountain. [17] [emphasis added]
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> "In contrast to driver SNF, mechanical stripping is an option for blanket SNF cladding, which opens up other treatment alternatives 151 for this type of SNF. Also, 'because of the different physical characteristics of the Fermi-1 sodium-bonded blanket SNF,' decided to continue to store its inventory of this material while alternative treatments were evaluated. According to DOE's record of decision, 'while EBR–II SNF is undergoing electrometallurgical treatment and the Fermi-1 blanket SNF remains in storage, DOE has approximately four years in which to evaluate the operating experience of electrometallurgical treatment technology and further evaluate other alternatives for the Fermi-1 blanket SNF'. The record of decision goes on to state that "after these data are evaluated, DOE will decide whether to treat the Fermi-1 blanket."
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> "DOE did not include sodium-bonded SNF in the Yucca Mountain license application; This SNF does not meet the waste acceptance technical requirements. Unless the sodium-bonded SNF can be shown to not be regulated under the RCRA, sodium-bonded SNF disposal options need to include either physical removal or chemical deactivation of the sodium. Classifying ceramic and metallic waste products from the electrochemical treatment of sodium-bonded SNF as HLW and disposing of these wastes in a geologic repository will require action to ensure that the waste products meet waste acceptance requirements. These waste forms may need their own DOE waste acceptance product specification, comparable to the specification for vitrified HLW forms." [18] [emphasis added]
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> "Most of the mass of SNF in the 200 Area Interim Storage Area is from the Fast Flux Test Facility (approximately 10 MTHM). The Fast Flux Test Facility reactor was cooled with liquid sodium. DOE removed any adhering sodium113 from the SNF cladding before storing the fuel. Approximately 0.25 MTHM of the fuel used in the Fast Flux Test Facility is known as sodium-bonded SNF because it has a small amount of sodium inside the cladding (Box 2-2). The remainder of the Fast Flux Test Facility SNF is non-sodium-bonded. In 2008, Hanford shipped the sodium-bonded SNF to Idaho National Laboratory (INL) for processing (Simpson 2010)." [19] [emphasis added]

DOE is apparently using the new Section 3116 HLW reclassifying policy as a way to reclassify the MFC electroprocessing waste product as non-HLW in violation of the NWPA. As the above Nuclear Waste Technical Review Board report notes, unless DOE commits to MFC waste product vitrification there will be problems with repository waste acceptance criteria.

The federal government Environmental Assessment (EA) proposes fabricating approximately only **10 metrics tons** of HALEU nuclear reactor fuel, to support near-term research, development and demonstration needs of private-sector developers and government agencies, including advanced reactor developers. The preferred action identified in the EA calls for establishing the capability at INL to fabricate HALEU ceramic and metallic fuels from the HALEU produced through the electrometallurgical treatment system currently operating at INL, and by using other **small** quantities of HALEU stored at INL. Most of the HALEU to be used for "feed stock" fuel fabrication results from the processing and treatment of **10 MT** [20] used fuel from the now-decommissioned EBR-II reactor. DOE is deliberately not disclosing all of the sodium SNF eventually intends to reprocess – discussed more below.

The EA is also leaving out the INL radiological air emissions from other processes at MFC

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[17] NWTRB SNF Report, pg. 94

[18] NWTRB SNF Report, pg. 100

[19] NWTRB SNF Report, pg. 67

[20] Environmental Assessment for Use of DOE-Owned High-Assay Low-Enriched Uranium Stored at Idaho National Laboratory Draft October 2018 DOE/EA-2087, Pg. 3. Herein after DOE/EA-2087.

and for the entire INL. The cumulative effects of all INL radiological air emissions have not been presented. And the air emissions from this HALEU processing are going to be harmful and EA does provide a table of which radionuclides are calculated to contribute the most to the dose they've calculated. But the emissions are for long-lived radionuclides that will be in the environment forever. The americium-241 will decay to unstable radionuclides that will keep decaying.

DOE announces the 2,000 ^{0}C electrometallurgical treatment [21] of SNF High-Assay Low-Enriched Uranium. [22] DOE's HALU EA "Radiological Impacts of Atmospheric Releases" only uses one of the two MFC reprocessing facilities (2,500 kg of HULU feedstock) to estimate the annual emissions. "Alternative 1a assumes two processing facilities at MFC that would process 2,500 kg annually for a total of 5,000 kg processes at MFC." [23] This is intentionally deceptive by only showing ½ of production emissions. Also the EA does not offer the total emissions for reprocessing all of the 10 MT SNF let alone the rest of the sodium SNF.

DOE's deception extends to the total amount of sodium-bonded fuel slated for reprocessing at MFC. "**Since 1996, DOE has treated approximately 4.5 MTHM of sodium-bonded SNF—less than 10% of the 55.7 MTHM awaiting treatment at INL.**" [24]

DOE's EA "Waste Management" only reports 218 m ^{3} attributable to MFC but states: "During FY-2018, INL sent 934 m ^{3} low-level waste (LLW) to off-site facilities for disposal. INL would accumulate and store any waste generated per Federal and state regulations, and if required treat and disposed at an off-site permitted/licensed facility." [25]

Regardless what DOE wants to classify the MFC SNF reprocessing waste as – it still is HLW as defined by the NWPA and must be disposed in a deep geologic repository. [26]

DOE is pushing this nuclear fuel program when there is no market for new reactors [27] and most importantly nowhere to put the SNF and high-level waste generated by the HALEU processing nor the SNF after use in current reactors. The Nuclear Waste Technical Review Board report on SNF as it relates to limited HLW disposal options notes:

> "The MFC activated metals [waste] will be RH LLW in that package contact dose is expected to routinely exceed 200 mR/hr. and like the NRF and ATR activated metals could reach 30,000 R/hr. The activated metal would be classified under 10 CFR 61 typically as Class B and C with some exceeding Class C." [28] [emphasis added]

The EA is leaving out the complete disposal accounting of MFC Sodium-bonded SNF and HLW Produced by HALEU Reprocessing. As previous noted, **"**DOE continues to treat sodium-bonded SNF in the Fuel Conditioning Facility at the Materials and Fuels Complex. In fiscal year 2013, **DOE treated approximately 170 kilograms** [170 MT]. DOE planned to treat **76 kilograms in fiscal year 2014** (DOE 2013e) and to continue treatments into the future." [29] [30]

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21 DOE/EA-2087, Pg.13.

22 DOE/EA-2087

23 DOE/EA-2087, Pg.14.

24 NWTRB SNF Report, pg. 95

25 DOE/EA-2087, Pg.12.

26 NWTRB SNF Report, pg. 81. "The approximately 56 MTHM of sodium-bonded SNF in [Figure 5-3] Group 31 will be processed into two solid forms of high-level radioactive waste and will not be transported as SNF."

27 Dan Pope, A Northwest distaste for nuclear power, Originally published Seattle Times, July 31, 2008, Updated July 31, 2008.

28 INL/EXT-06-11601 Rev. 1, Pg. B-2

29 NWTRB SNF Report, pg. 99. Metric ton = 1,000g = kilograms; This is different (includes total wt. (fuel + cladding) than a metric ton heavy metal (includes uranium/plutonium).

30 DOE. 2013e. *Department of Energy FY 2014 Congressional Budget Request Energy Efficiency and Renewable Energy, Electricity Delivery and Energy Reliability, Nuclear Energy, Race to the Top for Energy Efficiency and Grid Modernization,*

Sodium-bonded fuel at INL Table

INL Storage Site	Used Fuel Type	Quantity in MTHM *
Materials and Fuels Complex (MFC)		
Radioactive Scrap and Waste Facility (RSWF)	EBR-II driver fuel	2.30
	EBR-II blanket fuel	19.20
	Han. FFTF driver	10.00
Hot Fuel Examination Facility	Han. FFTF driver	0.01
Idaho Nuclear Engineering and Technology Center (INTEC) (only the sodium bearing fuel)		
CPP-666 (wet)	EBR-II driver fuel	2.00
CPP-749 (dry)	Fermi-1	34.20
	Totals	~57.71 **

Source: Management of U.S. Department of Energy Spent Nuclear Fuel, December 2017, U.S, Pg. 94.
* MTHM = metric ton heavy metal (uranium); this understates the weight of the fuel that includes cladding and attached parts.
** DOE does not offer a clear inventory of sodium SNF in the EA or in other publicly available reports; so this total is an estimate based on what EDI has found to date. Also the above table does not include the 170 kilograms treated in 2013 and 76 kilograms treated in 2014.

An example of the uncertainty of the quantity of sodium-bonded SNF at INL that will require reprocessing and will produce high-level waste (HLW) the Fast Flux Test Facility below 10 MTHM is included in the above table. As previously cited:

> "Most of the mass of SNF in the 200 Area Interim Storage Area is from the Fast Flux Test Facility (approximately 10 MTHM). The Fast Flux Test Facility reactor was cooled with liquid sodium. DOE removed any adhering sodium113 from the SNF cladding before storing the fuel. Approximately 0.25 MTHM of the fuel used in the Fast Flux Test Facility is known as sodium-bonded SNF because it has a small amount of sodium inside the cladding (Box 2-2). The remainder of the Fast Flux Test Facility SNF is non-sodium-bonded. In 2008, Hanford shipped the sodium-bonded SNF to Idaho National Laboratory (INL) for processing (Simpson 2010)." [31]

Materials and Fuels Complex has treated roughly 4.5 MTHM of sodium-bonded SNF (driver fuel) since 1996. The two waste forms are Ceramic and Metal Waste HLW forms stored at the MFC's RSWF.

Activated metals produced during MFC SNF reprocessing

> **"**The Materials and Fuels Complex (MFC) will generate activated metals during waste segregation operations in the planned Remote Treatment Project (RTP) [now called the Remote-Handled Waste Disposal Facility]. LLW stored at MFC consists primarily of irradiated reactor subassembly hardware that has been drained of sodium and fuel removed. The hardware is typically stainless steel. LLW is stored in a number of configurations including pre-1978 waste cans, and in the post 1978, HFEF 5-Cask waste cans. Some of the LLW is co-mingled with other waste types and will have to be retrieved and sorted in RTP. The operations are expected to produce ~6 m3/y (as packaged estimate) of activated metal. The MFC

Fossil Energy Research and Development, Naval Petroleum and Oil Shale Reserves, Strategic Petroleum Reserve, Northeast Home Heating Oil Reserve, Ultra-Deepwater Unconventional Natural Gas, Elk Hills Lands Fund, Advanced Tech. Vehicle Manufacturing Loan Program, Title 17 Innovative Tech. Loan Guarantee Program, Energy Information Administration. DOE/CF-0086, Vol. 3. April.

[31] NWTRB SNF Report, pg. 67

activated metals will be RH LLW in that package contact dose is expected to routinely exceed 200 mR/hr. and like the NRF and ATR activated metals could reach 30,000 R/hr. The MFC activated metal would be classified under 10 CFR 61 typically as Class B and C with about 50% exceeding Class C. No specific activity information is included. The RTP is expected to operate FY 2012 through 2035." [32]

DOE's EA makes no declaration of this critical Greater-Than- Class C waste produced by MFC HALEA SNF reprocessing nor the ability of the INL Remote-Handled Waste Disposal Facility to safely isolate this HLW from the environment in violation of the Nuclear Waste Policy Act (NWPA) that states in pertinent part:

"In this case, Congress defined HLW in NWPA as 'highly radioactive material resulting from the reprocessing of spent nuclear fuel.' Congress then used the word 'including' to signal that what followed were examples designed to illustrate the definition just given. The two examples designated to illustrate the definition just given. The two examples are (1) 'liquid waste produced directly in reprocessing'; and (2) 'solid material derived from such liquid waste that contains fission products in sufficient concentrations.'" [Pg.10]

"NWPA's definition of HLW considers the source of the waste and, in the case of solids derived from liquid waste, its hazard. It is undisputed that the waste stored at Hanford, INEEL, and Savannah River is highly radioactive and the result of reprocessing. No solids are yet been extracted from the liquid waste at those sites and treated to reduce fission products. Thus, the waste at issue in this case falls within NWPA's definition of HLW." [33] [Pg.11]

"**Nuclear Waste Policy Act** The federal statute enacted in 1982 that establishes both the Federal Government's responsibility to provide a place for the permanent disposal of high-level radioactive waste and spent nuclear fuel, and the nuclear power generators' responsibility to bear the costs of permanently disposing of commercial spent nuclear fuel. Amendments to the Act in 1987 limited the Federal Government's site characterization activities to a possible geologic repository at Yucca Mountain, Nevada. The Act provides for extensive state, tribal, and public participation in the planning and development of permanent repositories." [Pg.180]

"Finding: DOE's aging management programs are not fully implemented. Some DOE SNF storage facilities lack aging management programs to facilitate retrieving stored SNF and packaging it into multi-purpose canisters needed to transport it to either a centralized interim storage facility or a permanent repository." [34] [Pg.7&8]

EDI understands full well that all sodium SNF must be treated in order to meet any HLW repository waste acceptance criteria (RCRA prohibition of sodium), but DOE is attempting to use the HALEU reprocessing to reclaim the usable uranium for nuclear fuel without dealing with the HLW produced in the process.

The extensive deficiencies of this EA, EDI discusses above, demonstrate that a full Environmental Impact Statement or preferably a Programmatic Environmental Impact Statement be prepared to fulfill the requirements of the National Environmental Policy Act for the reprocessing of sodium-bonded and sodium-cooled SNF.

Respectfully Submitted

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[32] INL/EXT-06-11601 Rev. 1, Section B.2-4.

[33] B.Lynn Winmill, Chief Judge U.S. District Court for Idaho, July 2, 2003, Memorandum Decision in NRDC v. DOE, Civ. No. 01-0413-S-BLM, pg. 11.
Also see Settlement Agreement/Consent Order that states: "3. DOE shall treat all high-level waste currently at INEL so that it is ready to be moved out of Idaho for disposal by a target date of 2035." Pg.3

[34] U.S. Nuclear Waste Technical Review Board, Management of U.S. Department of Energy Spent Nuclear Fuel, Report to the United States Congress and the Secretary of Energy, December 2017, Page 7&8

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