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Nuclear Regulatory Commission
and Concerned Citizens

Reference: Private Spent Nuclear Fuel Storage
at the Skull Valley Goshute Indian Reservation

Subject: The Cost of not having spent nuclear fuel storage
or Spent Nuclear Fuel Storage Alternatives

Dear NRC and Concerned Citizens,

Please consider the cost of not having spent nuclear fuel storage. With no solution for spent nuclear fuel (SNF) storage, electric utilities are hesitant to build any more nuclear power plants. For decades ratepayers have paid the federal government \$3 million per day for SNF storage, still SNF storage has not been provided and it's happening is 12 years behind schedule. Electric utilities cannot build new coal-fired power plants because of the global warming caused by burning fossil fuels. New dams and new water power generation is not an option. As a result electric capacity is stagnated while demand continues to climb, a sure recipe for trouble. The nation thus has no policy or plan sufficient to meet future energy needs.

The power plants of today were designed to operate at 80% of capacity, but U.S. power generation is running at 95% of capacity. Plants running at 95% cannot be maintained, thus today's power plants are being run into the ground. In twenty years we will be needing 60% more electrical energy. Our utilities do not have the capacity to produce this power. New plants to produce this power are not even being designed. The lack of interim storage for SNF perpetuates these problems and prevents our country from having a working energy policy. The only two SNF storage projects are being developed in the nation. They are both in Utah. We do not have another ten years to start projects again. It is time to release the logjam and go forward.

It is foolish to permanently bury SNF in Yucca Mountain or anywhere else. We have the technology to recycle or reprocess the SNF to use the remaining 92 percent of energy contained therein. This would bring many good results: a) provide a great amount of energy for the future, b) drastically reduce the amount of waste that must be stored, c) reduce the required storage time from 10,000 years to only 600 years, and d) provide the best way to get rid of old weapons plutonium by burning it in reactors for its energy. Reprocessing should be part of our energy policy, and reprocessing would be facilitated by a working interim storage site.

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July 25, 2000

Concerned Citizen
Citizens Against Nuclear Waste in Utah

Subject: The Cost of not having spent nuclear fuel storage
Spent Nuclear Fuel Storage Alternatives

Dear Concerned Citizen,

Please consider the cost of not having spent nuclear fuel storage. With no solution for spent nuclear fuel (SNF) storage, electric utilities are hesitant to build any more nuclear power plants. Although the ratepayers for decades have paid the federal government \$3 million per day for it, permanent storage is already 12 years behind schedule. In addition the utilities are not building coal-fired power plants because of the global warming caused by all fossil fuels. As a result electric capacity is stagnated while demand continues to climb, a sure recipe for trouble. The nation thus has no policy or plan sufficient to meet these energy needs.

The power plants of today were designed to operate at 80% of capacity, but U.S. power generation is running at 95% of capacity. Plants running at 95% cannot be maintained, thus today's power plants are being run into the ground. In twenty years we will be needing 60% more electrical energy. Our utilities do not have the capacity to produce this power. New plants to produce this power are not even being designed.

The lack of interim storage for SNF perpetuates these problems and prevents our country from having a working energy policy. The only thing worse than having the central government micromanage a vital industry is having political activists micromanage a vital industry. It is time to release the logjam and go forward.

It is foolish to permanently bury SNF in Yucca Mountain or anywhere else. We have the technology to recycle or reprocess the SNF to use the remaining 92 percent of energy contained therein. This would bring many good results: a) provide a great amount of energy for the future, b) drastically reduce the amount of waste that must be stored, c) reduce the required storage time from 10,000 years to only 600 years, and d) provide the best way to get rid of old weapons plutonium by burning it in reactors for its energy. Reprocessing should be part of our energy policy, and reprocessing would be facilitated by a working interim storage site.

I am working to do both spent fuel storage and spent fuel reprocessing. It has been done safely for nearly 40 years and it can be done even more safely today. When you want to know about

what we can do, talk to me. Even if you want to keep the SNF where it is, talk to me and I will tell you about dry pool storage. In the mean time consider the following facts. If you have a problem with them, please talk to me.

For each of the following numbered statements, please consider whether they are true and relevant.

Storage of spent nuclear fuel (SNF) is affecting the achievement of **four** global requirements:

- 1) an Electric energy policy and plan (True __ , False __, Don't know __),
- 2) use of nuclear fuels to reduce global warming (True __ , False __, Don't know __),
- 3) recovery of U238 energy in SNF, i.e. reprocessing SNF
(True __ , False __, Don't know __),
- 4) Disposal of weapons plutonium by consuming MOX fuel in nuclear reactors
(True __ , False __, Don't know __).

Electric Energy Policy and Plan

5) Electrical power plants were designed to operate at 80% capacity. 6) Today the electric power plants of the United States are operating at around 95% capacity. 7) At this operation rate, there is not time or opportunity for proper maintenance. 8) In the next twenty years, the demand for electrical power is expected to increase by 60%. 9) The power industry does not have means to furnish this power. 10) Today, except for natural gas peaking plants, there are no new electrical power generation plants on drafting boards, in engineering or in planning. 11) New coal burning plants cannot be built because of the need to reduce carbon dioxide (CO₂) gas to reduce the effects of global warming. 12) Existing hydroelectric plants are being threatened by dam removal. 13) The nation's only other high energy source is nuclear power and it is stymied by the SNF storage and disposal issue. 14) To meet future demands there should be at least 200 new nuclear power plants on the nation's drawing boards today. 15) At a time when the United States desperately needs to be planning, the U.S. does not have a national energy policy and plan. 16) A national energy policy and plan cannot be made until the U.S. has a solution for storage and disposal of SNF.

Use of Nuclear Fuels to Reduce Global Warming

17) World scientists are reporting a change in the world's atmosphere. 18) The world's high consumption and burning of fossil fuels is being blamed for increased quantities of CO₂ in the atmosphere. 19) The world's increased usage of fossil fuels over the last century is being blamed for atmospheric changes that are causing global warming. 20) Global warming will be devastating to the world as we know it. 21) The only way to reverse this trend is to curtail the burning of fossil fuels. 22) The first, easiest, and most obvious change the world can make to reduce the global warming trend is to replace coal-burning power plants with nuclear power plants. 23) To reduce global warming trends there should be many new nuclear power plants on the nation's drawing boards today.

Recovery of Energy in Spent Nuclear Fuel, i.e. Reprocessing SNF

24) Nuclear fuel contains a mixture of isotopes, only some of which fission and produce energy. 25) The prominent active components in nuclear fuel are U235 uranium and Pu239 plutonium. 26) Pu239 is breeder-reactor made from U238 uranium. 27) Nuclear fuel contains 97% U238 uranium which serves as a fission catalyst. 28) Spent nuclear fuel (SNF) still contains 92% U238 uranium. 29) Almost all of SNF can be reprocessed and recovered for continued use and an atomic material source to make energy in a nuclear power reactor. 30) If we bury SNF in Yucca mountain, in time, 92% of the nation's nuclear energy resources will end up buried in Yucca Mountain. 31) This is a huge waste. 32) There is no scientific support for burying SNF.

Disposal of Weapons Plutonium, by Consuming MOX Fuel in Nuclear Reactors

33) Over 40 tons of plutonium has been removed from U.S. nuclear weapons. 34) It takes only three (3) pounds of plutonium to make an atomic bomb. 35) For this to happen it also takes a sophisticated triggering mechanism. 36) After plutonium is converted chemically to an oxide, the oxide can not be configured to make a bomb. 37) The United States has a joint agreement with Russia to dispose of weapons plutonium. 38) Russia's commercial atomic power reactors continually produce fifteen (15) tons of plutonium every year. 39) This plutonium also needs disposal. 40) Plutonium can be disposed of only by a nuclear reaction--a bomb, or reduction in a nuclear power reactor--either way producing a great amount of energy. 41) One gram of plutonium (1/454 pounds) produces the energy equivalent to a ton of coal. 42) By weight, this is a factor of one million. 43) It does not make sense, and there is absolutely no need for the U.S. to store away 92% of its nuclear energy for 10,000 years of controlled storage in Yucca Mountain. 44) The technologies for reprocessing of SNF was developed at INEEL in Idaho. 45) France, England, and Sweden are reprocessing SNF by the techniques developed at INEEL. 46) New SNF reprocessing plants are being built in Japan, Australia, and India. 47) Third party intervener Peterson has applied for licenses for both intermediate storage and reprocessing of SNF.

Licensing of Storage of SNF at PFS and Pigeon Spur in Tooele and Box-Elder Counties, NRC Docket Nos. 72-22 and 72-23 Must Proceed.

48) The current requirement of SNF intermediate storage is for 70,000 metric tons of SNF. 49) The PFS facility in Tooele County, Utah, and the Pigeon Spur facility in Box-Elder County, Utah, can each be licensed to store 40,000 metric tons of SNF. 50) Licensing of Storage of SNF at PFS and Pigeon Spur in Tooele and Box-Elder Counties, NRC Docket Nos. 72-22 and 72-23 must proceed. 51) To further these two facilities, development funding should be made to P@A Engineers / Pigeon Spur for research and demonstration of: a) an Integrated transport, storage, monitoring, and retrieval system for heavy casks of hazardous materials, Ref. spent nuclear fuel rods, b) dry-pool canister transport, storage, monitoring, and retrieval system, c) crane load drop cushion, critical material fall protection, varying height under load support, for monitoring, storage and retrieval system, and d) a storage pad design, test proven, for ease of decommissioning.

52) In 1997 Peterson brought a court action against Utah's Governor in U.S. District Case No. 2:97CV 0691C in the court of U.S. Judge Teena Cambell. 53) Peterson complained of the

political hysteria Governor Leavitt's public displays were making of the subject of Peterson's work. 54) Governor Leavitt was creating a scare in the public by his talk of pink clouds hovering over his grandmother's house in Cedar City, Utah, after bomb tests in the test desert area of Nevada. 55) Governor Leavitt or his family are apparently so called "down winders". 56) Peterson himself is a "down winder". 57) But pink clouds have nothing whatever to do with storage of spent fuel. 58) Spent fuel is made up of variety of materials that are a mixed conglomerate in individual fuel rods which are held separated with racks. 59) Around the rods is an inert gas atmosphere. 60) From every aspect there simply is no way that spent nuclear fuel can form to make a bomb. 61) In Peterson's proposed reprocessing, the plutonium is only in a MOX (mixed-oxide) form, in which state the plutonium ingredient cannot possibly result in a critical mass to make a bomb.

62) Nuclear fuel is in the form of heavy pellets which are confined in fuel rods, which are sealed in canisters in an inert gas atmosphere. 63) In the engineered storage configuration the SNF is never exposed to the outside atmosphere. 64) But then, even if a canister and its fuel rods were to be broken apart, the pellets would only lay around on or in the ground where they could be easily found with a Geiger counter.

65) Where the SNF is stored in concrete storage casks, a person even laying against and embracing the concrete casks would receive only a few millirems per hour of radiation (less than 3mrem). 66) In comparison in a typical aircraft commercial flight, one is being exposed to 5 millirems of radiation from cosmic rays. 67) If we allowed living in the SNF storage field, it would be a safer place as for radiation than working in a flying commercial aircraft.

68) A nuclear utility engineer points out that if one takes all of the SNF so-called waste from a nuclear power plant for twenty five years, and spread it out over a football field, the material would stack only six inches high. 69) In comparison, 8% of the residue from coal burning is solid material. 70) The rest of the 92% goes up the stack and is spread out over the land as CO₂ gas and smoke. 71) Coal contains reactive materials including uranium. 72) Exposure to uranium from coal smoke is five million times as great as being around a plant which makes energy from nuclear fission. 73) Getting back to that 8% of solid ash, for twenty five years, if you stack that on a football field, the pile would be over a mile high. 74) No matter how one looks at energy from nuclear materials it is far cleaner and safer than energy from coal.

75) Peterson finds no basis for Governor Leavitt to impede his work for SNF storage. 76) Peterson tried to meet with Governor Leavitt and talk this out but Governor Leavitt made himself inaccessible. 77) To attempt to resolve the issue, Peterson brought a complaint against the Governor. 78) Peterson thought the matter was resolved with the suit. 79) But in the time since, Governor Leavitt just keeps talking about the pink clouds over his grandmother's house and still today expounds a "policy" of not seeing SNF transported, stored, or processed in Utah.

80) There is no reason to single out and make fear of SNF except that "nuclear" is a word that commands immediate attention. 81) This is partially the fault of our use of nuclear material for weapons. 82) For over a half a century nuclear material has been a fear subject of the whole world. 83) Even today, how nuclear weapons materials are processed and used in weapons is kept secret, and what people don't know keeps them in fear. 84) In this context, the Federal Government targeted the lands of Indian reservations for storage of SNF. 85) This targeted storage had the immediate appearance of hiding the subject or trying to skirt the issue around the general public. 86) This created a major problem for engineer Peterson or anyone else attempting to make a storage facility for SNF. 87) Eventually, however, in an intelligent society, a community with a good education system, the truth of nuclear material can be taught. 88) Utahns are exceptionally well

education system, the truth of nuclear material can be taught. 88) Utahns are exceptionally well educated and exceptionally concerned people. 89) If there is anywhere in the U.S. that residents will listen and then act responsibly for a national cause, Utah is the place.

90) Saving the environment, ridding the world of nuclear weapons, and preserving our energy for future generations are good subjects which Utahns will hear and act upon. 91) Utahns are supportive of the U.S. Government and its laws. 92) It is inconsistent and wrong for Governor Leavitt to expound a policy contrary to Federal Law. 93) For a time, until the public knows better, his speaking against nuclear material may appear to make him a saving knight in white armor. 94) But the truth is that the use of nuclear itself is the saving knight in white armor. 95) Nearly two thirds of the nation's Senators and Congressional Representatives in Washington are demanding a solution to the spent nuclear fuel issue. 96) The federal laws for interstate transport, and for use of nuclear materials to make electricity do not exclude any state. 97) In reality, in Washington they have to support any alternative on the table for storage of SNF. 98) They have to do this for the future of the environment, the future of electric power, the future of energy resources, and the future of a safe, nuclear-weapons free world.

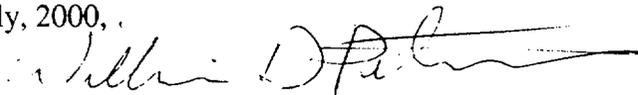
99) This issue of SNF storage in Utah has created a polarized atmosphere that must now be resolved. 100) The spent nuclear fuel issue is beyond politics. 101) The politics was done twenty years ago. 102) Today the solution needs to be engineered.

103) Utah's governor Michael O. Leavitt's "policy" and stand against storage of SNF may have affected the reader's understanding and stand relative to storage of SNF, but the reader is asked to consider the facts and make up his or her own mind.

Facts and knowledge of spent nuclear fuel have been abused, misused and corrupted. What is herein said may be new to you. Fundamental facts like that SNF consists of 92% U238 which is further usable to make power are not widely known. Some the nation's best scientists have looked at this document and found everything written herein to be true. Some of the scientists who find the above to be true and correct include:

Gary Sandquist, Ph.D., P.E., Prof of Nuclear Engineering
Steven Barrowes, Ph.D., Former Prof. of Physics,

Dated this 27th day of July, 2000, .



William D. (Bill) Peterson, M.S., P.E.
Pigeon Spur, NRC Docket No. 72-23